E200PS Operation Manual

(Version: V1.01)

ESTUN AUTOMATION CO., LTD

Total Solution Supplier

Contents

Preface

Synopsis

This document guides the operator how to operate the E200PS shear 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. It is not allowed to 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.
- E200PS 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 any operation of the device.
- ESTUN preserves the right to modifying this manual in the event of function adding or print error.
- E200PS device has the safety-door protection function, but only works on the **CUT** 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!

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

Chapter 1 Product Introduction

1.1 Characteristic

E200PS CNC device is a very suitable for torsional axis shearing machine, providing solutions for most of the wiggle or gate 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.
- The gap (G-axis) is controllable.
- Unilateral and bilateral location, to improve the positioning precision and reduce screw clearance.
- The action **CUT** and **EOS** is controllable.
- Pneumatic feeding causes to convey the material to be nimble.
- Backgauge can automatic homing.
- Backgauge can be adjusted through the manual keys.
- The pages of **SYSTEM PARAMETER** and **DIAGNOSIS** are hidden, requires a specific password can enter into.

1.2 Operation Panel

E200PS Operation panel is as shown in Figure 1-1.

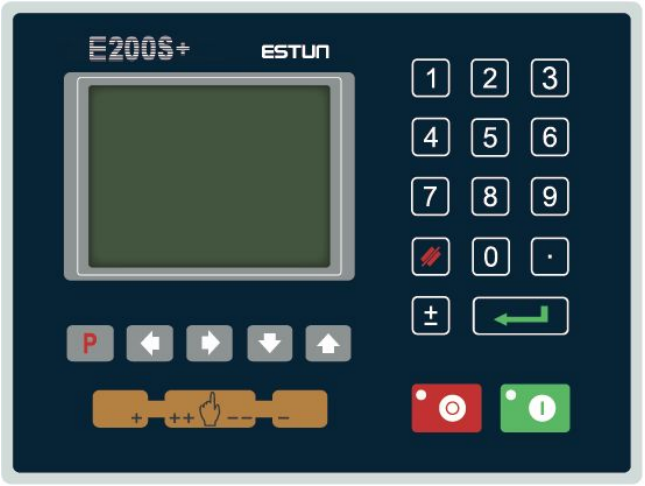

Figure 1-1 Operation panel

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

Table 1-1 Description of key functions

Key	Function Description
	Delete key: delete all data in input area on left bottom of displayer.
	Enter key: confirm the input content. If no content is input, the key has the similar function to direction key .

Key	Function Description
	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
	Function switch: switch over different function pages
	Symbolic key: user input symbol, or start diagnosis.
	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

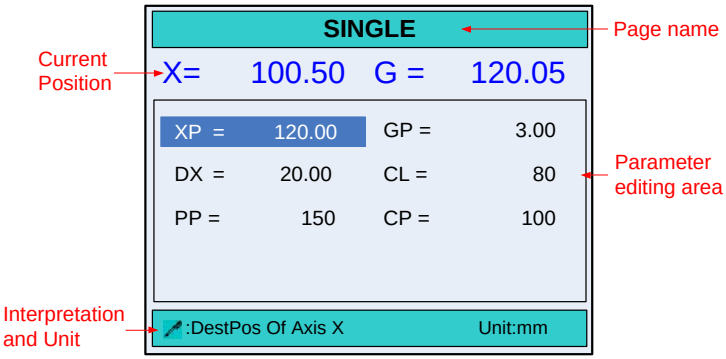

Figure 1-2 Display area

- Page name: here shows the name of the current page.
- Current Position: here shows the relative position of the X-axis and G-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 is1 block of metal material, needs to be processed into workpieces with same length, the require as following:

- Length of each workpiece is 100.00mm
- Gap is 1.00mm
- Distance of retracting is 5.00mm
- Time for the backgauge retract waiting is 2.00s
- Workpiece is 10.

2.1.2 Analysis

Parameter	Setting
XP	100.00mm
GP	1.00mm
DX	5.00mm
CL	80
PP	10
Others	According to the actual situation to set.

2.1.3 Procedure

Step 1 When the E200PS 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.

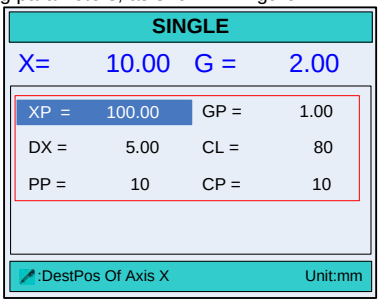

Figure 2-1 Single-Step example configuration

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

2.2 Mutil-Step

2.2.1 Background

Now, There are 5 metal materials, need to be processed into three workpieces with different length, the require as following:

- The first sheet: Length is 100.00mm, Gap is 1.00mm, Distance of retracting is 5.00mm.
- The second sheet: Length is 300.00mm, Gap is 1.00mm, Distance of retracting is 5.00mm.
- The third sheet: Length is 600.00mm, Gap 1.00mm, Distance of retracting is 5.00mm.

2.2.2 Analysis

This operation will edit and save in the 2program, set the following parameters on the **PROGRAM** page.

Page	Parameter	Setting
PROGRAM	ST	3
	PP	5
1 / 3ST	XP	100.00mm
	GP	1.00mm
	DX	5.00mm
	Repeat Times	1
2 / 3ST	XP	300.00mm
	GP	1.00mm
	DX	5.00mm
	Repeat Times	1
3 / 3ST	XP	600.00mm
	GP	1.00mm
	DX	5.00mm
	Repeat Times	1

2.2.3 Procedure

Step 1 When the E200PS device is electrified, wait a few seconds into the **SINGLE** page (Default page).

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

Step 3 Press  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.

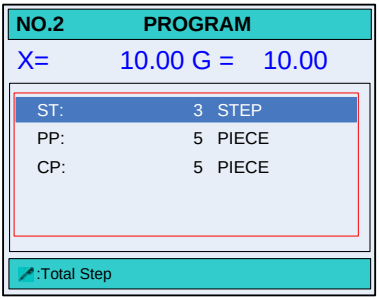

Figure 2-2 Mutil-Step example configuration

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.

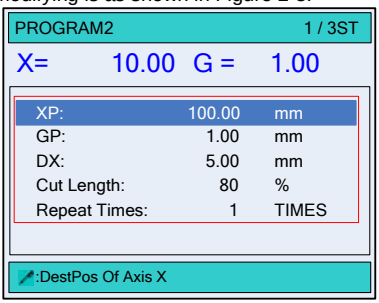

Figure 2-3 Step configuration

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

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

Step 8 Press  to run the device, 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 device.
- 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 device.

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

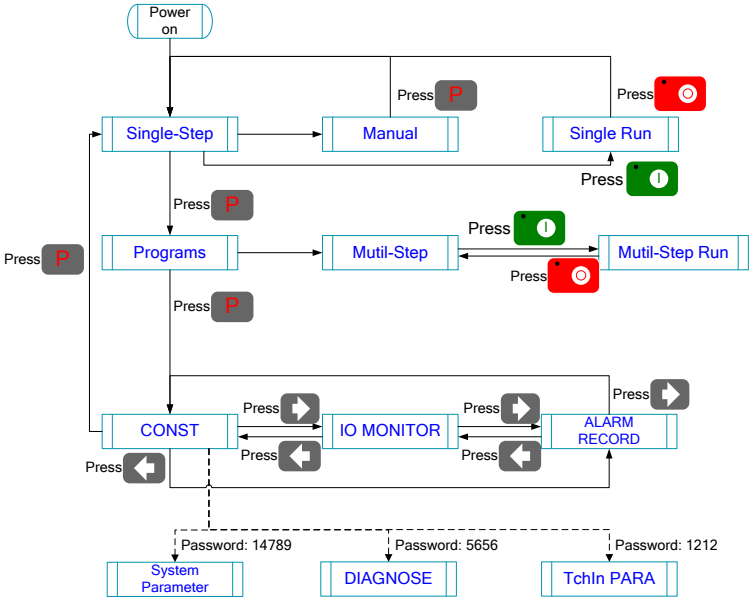

Figure 3-1 Operation Flow

3.3 Single Step

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

When the E200PS 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 device, the page on the device enters to **RUN** page.
- Press  to stop the machine. the page on the device enters to **SINGLE** page.

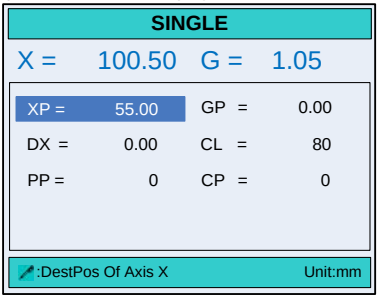

Figure 3-2 The **SINGLE** page

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	-9999.999~9999.999	mm/inch	Program position of X axle.
GP	0.00	0~99.99	mm/inch	Program position of Y axle.
DX	0.00	0~9999.999	mm/inch	Retract distance of X axle.
CL	0	0~100	%	Actual time of the cut length = Max time of the cut length × CL
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.

3.4 Mutil-Step

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

Step 1 When the E200PS 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. E200PS 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.

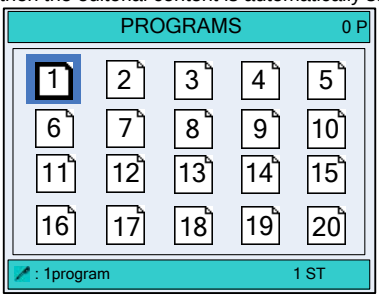

Figure 3-3 The **PROGRAMS** page

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.

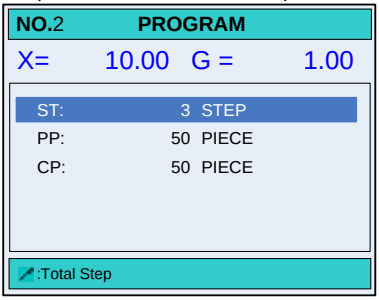

Figure 3-4 The **PROGRAM** page

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

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

Parameter	Default	Range	Unit	Description
ST	0	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.

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  back to **PROGRAM** page.

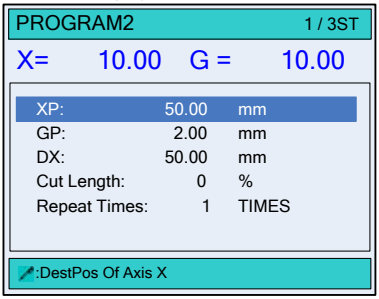

Figure 3-5 The **STEP** page

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	-9999.999~9999.999	mm/inch	Program position of X-axis.
GP	0.00	0~99.99	mm/inch	Program position of G-axis.
DX	0.00	0~9999.999	mm/inch	Retract distance of X axle.

Parameter	Default	Range	Unit	Description
Cut Length	0	0~100	%	Actual time of the cut length = Max time of the cut length × Cut Length
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 device.
If you want to run the device 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 device in in sequence, press P back to **PROGRAM** page, and then Press to run, the device enters **RUN** page.

----End

3.5 Manual

NOTE
In general, operator wants to adjust the backgauge or the block, need to enter **MANUAL** page to do relevant operation.

When the E200PS 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.

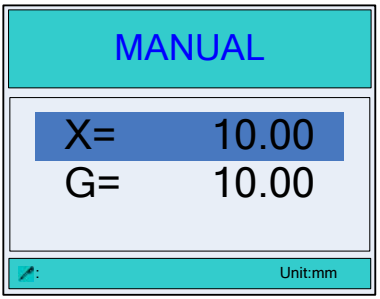

Figure 3-6 The **MANUAL** page

3.6 Alarm and Monitor

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

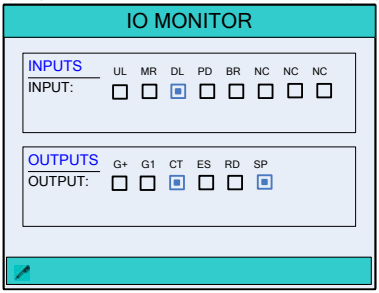

Figure 3-7 The **IO MONITOR** page

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

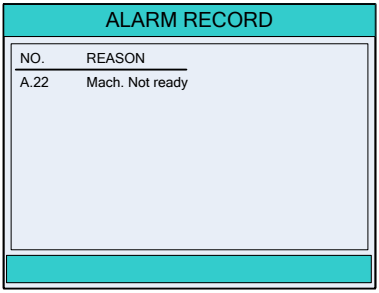

Figure 3-8 The **ALARM RECORD** page

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 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 **U_Limit** and **EOS** terminals are connected to +24V or not.
When the device is in multi-step programming, the program can't count.	Check **U_Limit** and **EOS** terminals are connected to +24V or not.
When programming is operating, the device loses control.	• Check whether encoder cable of G-axis is connected or not. • Check whether communication cable of X-axis is connected or not. • Check whether the motor direction of X-axis and the encoder count direction are correct.
When programming is operating, the device actual position will not display or change.	Check whether encoder wiring is correct or encoder cable is connected well.

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 is out of the minimum value, it is necessary to move the X-axis to the soft limit range manually.
A.03	XPos > maximum	The current position of X-axis is out of the maximum value, it is necessary to move the X-axis to the soft limit range manually.
A.04	GPos < minimum	The current position of G-axis is out of the minimum value, it is necessary to move the G-axis to the soft limit range manually.
A.05	GPos > maximum	The current position of G-axis is out of the maximum value, it is necessary to move the G-axis to the soft limit range manually.
A.06	Out of UDP	Move the cutter to the upper dead point by foot witch.
A.08	X Out of limt.	When the X-axis is employed for the front feed, The current position of X-axis is out of the soft limit range, it is necessary to move the X-axis to the soft limit range manually.
A.11	Slider Block err.	The slider is not on the TDC in the case of positioning. Move the cutter to the upper dead point by foot witch.
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.27	Can Send Err.	The device is not connected to the drive, please connect the drive.
A.29	SafeIn Err.	Light signal loss on the CUT 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.
AX.60~AX.67	CAN Error	The X-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
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 gauge current position.
G-tea. in	1.00	0~9999.999	mm/inch	When the teaching of G-axis is enabling, the operator assigns to the G-axis of a correct value, to represent current size of the gap.
SINGLE				
XP	0.00	-9999.999~9999.999	mm/inch	Program position of X axle.
GP	0.00	0~99.99	mm/inch	Program position of G axle.
DX	0.00	0~9999.999	mm/inch	Retract distance of X axle.
CL	0	0~100	%	Actual time of the cut length = Max time of the cut length ×CL
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.
PROGRAM				
ST	0	0~25	-	The total number of steps in this program.
PP	0	0~99999	-	The number of processing workpiece in this program.

Parameter	Default	Range	Unit	Description
CP	0	0~99999	-	• PP=0: this value is the current work piece. • PP>0: this value is the remain work piece.
STEP				
XP	0.00	-9999.999~9999.999	mm/inch	Program position of X-axis.
GP	0.00	0~99.99	mm/inch	Program position of G-axis.
DX	0.00	0~9999.999	mm/inch	Retract distance of X axle.
Cut Length	0	0~100	%	Actual time of the cut length = Max time of the cut length ×Cut Length
Repeat Times	1	1~99	-	The repeat times in this step.

www.estun.com

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

ESTUN