T24(JUGAO)

Bending machine operation manual

Chapter 1 Overview

1.1 Main interface

As shown above, the screen is divided into 3 levels of structure, and in all screens, the location where each structure is located is fixed, only the content of the page differs.

1、On the left side is the function bar, including the left and right buttons  the power level login button , the  status display button  , the menu button  and the system date and time display.

2、Below Figure 1-3 is the prompt bar, the system is often blue, when the system alarm is red, click the red icon on the left to clear the alarm, clear the alarm must first

eliminate the corresponding error, click the button to take effect, otherwise the alarm will not be cleared. Clicking on the input box will also prompt the data ID and the upper and lower limits. The right side shows the current machine status, it will prompt the current machine to proceed to a certain step, and it will also prompt the pedal to wait when you need to step on the pedal.

3、Click on the power level login and enter your username and password before you enter the high power level and can see more of the page.

4、Menu bar: This system is divided into 6 menus according to the main functions, of which:

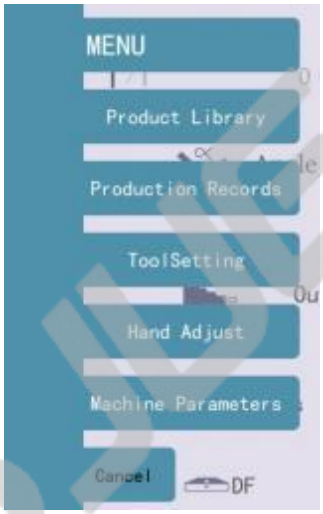


Figure 1-4 Menu bar page

Product library: products can be created, stored, read and deleted.

Production records: setting production targets and keeping production records.

Tool setting: Enter the tool setting interface to adjust the maximum opening after changing the mold.

Manual axis adjustment: In this screen, you can perform manual actions on individual axes.

Machine parameters: machine configuration, machine status and tuning parameters.

Chapter 2 Product Library

Click "Products" in the menu bar to enter the product library,

No	Customer	ProductName	Material	TH	Punch	Die	Type	Steps	Date
1		00	SPCC	1	Sh100/86	h46/86/8	Graph	2	2023-09-05
2		0099	SPCC	1	Sh100/86	h46/86/8	Graph	2	2023-09-08
3		2222	SPCC	1	Rh100/86	h46/86/8	Graph	2	2023-09-08
4		666	SPCC	1	Sh100/86	h46/86/8	Data	1	2023-09-08
5		777	SPCC	1	Sh100/86	h46/86/8	Data	17	2023-09-05
6		7yu	SPCC	1	Sh100/86	h46/86/8	Graph	4	2023-09-05
7		87u	SPCC	1	Sh100/86	h46/86/8	Graph	8	2023-09-08
8		888	SPCC	1	Sh100/86	h46/86/8	Data	1	2023-09-09
9		8uiyu	STAINLESS	1	Rh100/86	h46/86/8	Graph	5	2023-09-09

1 、 Click the "New" button to automatically jump to the "Processing" screen, where you can edit blank product steps.

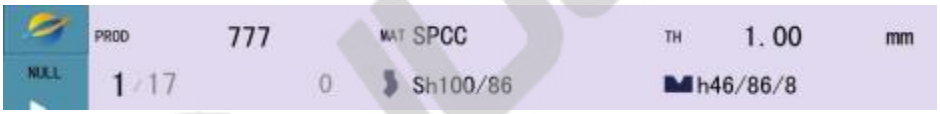
2 、Click the "Save" button, enter the customer’s name and product name in the pop-up window, and the product information in the "Processing" screen will be saved to
the product library.

3 、Select a product and click on the "Delete" button, the product will be deleted from the product library.

4 、Select a product, click on the "Read" button, and the product will be read into the "Processing" screen.

Chapter 3 Free bending work step editor

Create a new or read product, enter the processing screen, and bend the work step.



Punch: Click the Punch name to enter the Punch library to select a mold. Users can create, edit, delete and read molds in the Punch library, please refer to "**Chapter 6 Mold Library**" for details.

Die: Same as "Punch". The mold parameters set here are the system default mold.

Material: Click on the material name to select the processed material from the material library.

Plate thickness: Edit the material thickness.

Angle bending: click 

can choose "angle bending", "position bending", "flat bending", "bottom bending "way. The back according to the different bending way to enter the corresponding angle or position.

Blocking: Click on  to select blocking or palletizing.

Outer Dimension: Click outer to select "Outer Dimension", "Inner Dimension", "x- axis position".

R-axis: Input the position of R-axis.

Deflection: Enter the position of the deflection.

Z-axis: input the position of Z-axis center point, since the calculation of Z1, Z2 position; X-axis: The position where the backstop moves horizontally in the vertical mold direction.

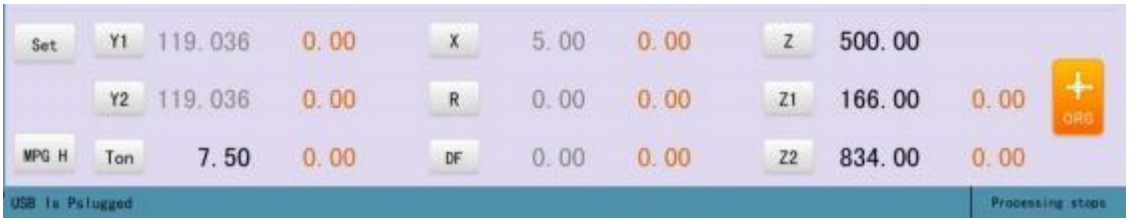
Clicking on the number of work steps brings up four buttons for adjusting the work steps, they are:

Insert: insert a blank line work step above the current work step.

Delete: delete the current work step, the following work steps are automatically moved up one line.

Upshift: exchange the position of the current work step with the previous work step.

Downshift: exchange the position of the current work step with the next work step.



Handwheel slow: Handwheel fast and slow rate switch button, used to adjust the speed of the handwheel action times.

Next to the axis name, the set position and the actual position of the axis are displayed in order. Switching the work step or modifying the current work step

parameter setting, you can observe the change of the set position, which is convenient to understand the influence of different parameters on the target position of the axis.

Y1/Y2 setting position and X setting position are automatically calculated by the system according to the parameters of "angle" and "X axis" set in the work step bar and cannot be modified directly. Tonnage, R setting position and Z1/Z2 setting position are automatically calculated by the system, but manual modification is allowed.

Tonnage: The system calculates the bending tonnage for the current work step.

R position R-axis default position 0.00mm, when the lower edge of the stopper finger is at the same level with the upper edge of the Die.

Z center: Block refers to the blocking position along the Die in the parallel direction. The default is the middle position. The Z center position can be adjusted manually, and the Z1 and Z2 setting positions will be adjusted to both sides in the same proportion according to the board width relative to the Z center position.

Y-axis curve: Used to view the Y-axis action curve.

Deflection: When processing products, the hydraulic compensation cylinder or mechanical compensation applies an upward force to the table to produce a certain amount of movement so that the bending angle remains consistent when processing large width products.

3.1 Detailed reference

Processing of the right-hand side of the detailed parameters, there is also a left-hand side of the mode selection chapter in detail.

method selection:

Free bending: The sheet is bent to the set angle by dropping the Punch to the desired depth, as shown in Figure 3-4. The system calculates the required Y-axis position to obtain the set angle. Free bending requires the Punch angle to be less than or equal to the Die angle, and the target angle to be larger than both the upper and Die angles.

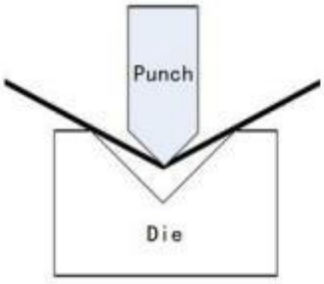
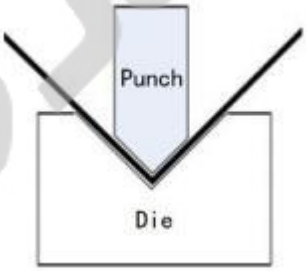
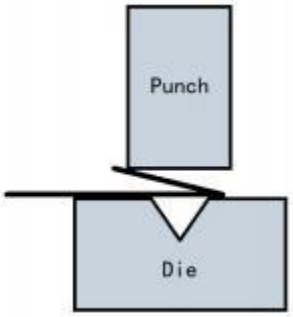


Figure 3-4 Free bending

Press bottom bending: The Punch will be folded into the bottom of the Die to get the required bending angle. The Y-axis position is the position of the bottom of the Die minus the plate thickness, which can be corrected by the correction value.



Flattening bending: the plate is bent into a sharp angle after the previous bending, using the flattening Punch, the sharp angle of the plate is flattened and the plate is folded, the Y-axis position is for the position of the pressure plate point minus the plate thickness, which can be corrected by the correction value.

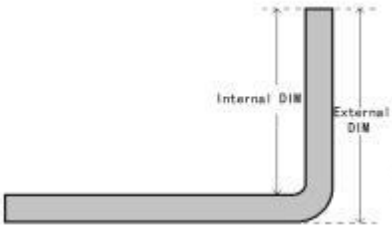


Press bottom flattening: like press flattening bending, the Y-axis position is for the position of the press plate point, which can be corrected by the correction value.

Dimensions: inner dimensions, outer dimensions. As shown in Figure 3-7.

The distance of the stopper end from the inside of the sheet metal at the bend, called the inner dimension.

The distance of the stopper end from the outer side of the sheet metal at the bend, called the outer dimension.



The X-axis target position is calculated differently for the inner and outer dimensions because the inner side shrinks and the outer side extends when the sheet metal is bent. the X-axis target position is larger than the inner dimension and smaller than the outer dimension.

Rear blocking material: blocking and holding material. When the distance of X-axis is short, choose the blocking mode. When the X-axis is long, due to the gravity of the plate material downward tilt can choose the palletizing mode, the plate material will be placed on the blocking finger forward to hold. When you use the pallet mode, the system automatically calculates the target position of X-axis and R- axis in the pallet mode.

utomatically calculates the target position of X-axis and R- axis in the pallet mode.

Retreat distance: The relative distance that the X-axis needs to retreat to avoid

when the slider descends to the clamping point.

Clamping point: The position where the slider is just pressed against the plate.

Avoidance mode: You can choose 3 types of backstop avoidance mode; the avoidance position is set in the "avoidance" screen.

0: No avoidance is used

1: Move to the "X avoidance position" before the backstop movement.

2: Move to the "R avoidance position" before the backstop movement.

3: Move to "X avoidance position" and "R avoidance position" before the backstop movement.

Board width: The width of the sheet along the length of the mold.

Repeat: The number of times the current work step needs to be repeated.

Step change signal: When you click to switch to "use", after the Y-axis return stroke is finished, you need to step on the down pedal once before the backstop will start to move to the position set for the next step.

Step change delay: the delay time before switching to the next work step.

Slow distance: The distance between the speed change point and the platen point. If the current work step slow distance is 0, the "default slow distance" is used. If the default slow speed distance is also 0, the system default slow speed distance is used.

Holding time: The holding time after the end of bending. The "default hold time" is used when the hold time of the current work step is 0.

Rising distance: After bending, the Punch rises to the distance above the platen point. The "default liftback distance" is used when the liftback distance is 0 before the work step.

Work-in speed: speed during work-in, set by percentage.

Slow return speed: speed at slow return, set as a percentage;

Slow back distance: the distance of slow back up, when set to 0,slow back up is not used.

Chapter 4 Processing

4.1 Processing

Click Back to return to the processing screen,. For the convenience of the user, editing and processing are in the same screen. The red button at the bottom right corner is the "Start Processing" button, which is in editing mode
before processing starts and in processing mode after processing starts.

Edit the machining step or read the product, and after setting the schedule number in the production control screen, click the red button in the machining screen

Chapter 5 Mold Library

5.1 Punch library

In the "Machining" screen, click on the Punch name to enter the Punch library screen.

The Top Model Library shows the list of top models saved in the system, which can be turned by the left arrow.

Click on the menu bar pop-up button.

New Click "New" to bring up various types of new Punchs; enter the editing interface as shown in Figure 5-2.

Edit : Click "Edit" to modify a parameter of the current Punch.

Delete : Select a top die and click "Delete" to delete the top die.

Read : Select a top die and click "Read" to read the selected top die into the current application.

5.2 Die librar