HF WIRE CUTTING PROGRAMMING AND CONTROL INTEGRATED SYSTEM

Brief Description Of HF SOFT General And Special Functions





Wechat technical support





WEDM PROGRAM AND CONTROL SYSTEM FOR UNDERLYING/DESKTOP

GENERAL PURPOSE SOFTWARE



PROFESSIONAL SOFTWARE FOR ENTERPRISE AUTOMATION

HF V10 is a general-purpose software, HF X10 is a professional software for

enterprise automation and special processes.

The following will briefly introduce the HF general and special functions of the

hybrid V10/X10.

The HF SOFT editing and control integrated system is divided into two system installation

methods: "desktop" and "bottom type".

The HF series software includes:

① HF wire cutting editing and control Integrated system (HF)

② HF sand wire machine programming and control integrated system (HF-ABR)

③ HF Industrial automation intelligent control system (referred to as: HF-IA)

④ HF Automatic programming transmission system (referred to as: HF-P)

Affirms that:

At www.hgdsoft.com We will provide V10 and X10 software downloads on the official website of. com. If one of your hardware devices has a "dongle" label marked with "V10" or "X10", you can upgrade HF software to the latest version of V10/X10. Do not force upgrading or running without identification, such as causing software dog damage and not enjoying after-sales service.

What is the HF underlying control system:

The PC does not need to install Windows or Linux or Unix. After the PC is powered on, it directly enters the HF control system to work.

Characteristic:

Quickly access HF software directly after power-on Professional control work is independently completed by HF system The underlying mode is stable, powerful and fast GHOST installation and recovery completed at a high speed (1 second) Hard disk portability is very strong, and the same hard disk can be applied to other PC ends Solid state drive is lightweight and convenient for technical support

The underlying HF software can be self-upgraded, easy to understand and effective

in real time



(starting up)

(straight)

1、HF Interface



- 1. "Exit" : Exit the software
- 2. "Program" : drawing and post-processing code generation
- 3. "Process" : code processing

- 4. "4-Axes" : heterohedron synthesis
- 5. "Param." : Basic system parameter settings
- 6. "Other " : other comprehensive processing and operating functions
- 7. "Information" : Software Instructions and Introduction



2、 "Program" Interface

"program" contains various drawing functions, and has high-precision mathematical model processing for straight lines, arcs, and parabola.



The graphics programming accuracy and processing ability of HF "program" are much higher than the drawing method of small arcs in CAD graphics programming. It should be noted that CAD uses a straight-line approximation drawing method for small arcs, and the accuracy calculation is less than that of HF, while HF directly uses the real arc processing method and the large-precision bottom layer processing. HF's full-drawing programming makes the processing data transmission more synchronized with the axis, and the workpiece is more accurate and smooth.

"program" contains keyboard shortcuts to:

"Choose intersect"	"Take trace	"Del trace(line or	"Del continuous		
point": 1	between two points on aux" :2	arc)" : 3	traces″: 4		
"Del	"Clear Screen" : 6	"Exit" :7	"Only display		
aux(point/line/circle)" :			traces": 8		
5					
"Display all" :9	"Display traces's	"Move graph" :	"Full screen" : C		

	direction" : A	В		
"Zoom (in/out)" :D	"More display	"Take aux'	"Take	
	functions" : E	point" : F	aux' line" : G	
"Take aux' arc" :H	"1 tange' circle" : I	"2 tange'	"3 tange'	
		circle": J	circle": K	
"Common tange'	"Undo graph" :M	"proces" :N	"Other" :O	
line":L				
"Draw trace' line" : P	"Draw trace' arc" :	"Regular	"List' points	
	Q	curve" : R	curve" : S	
"Change	"Change block" :	"Modify trace" :	"Change	
contionuse" : T	U	V	trace" : W	
"Order for traces" : X	"Fillet/cChamfer" :	"Lead in/out-	"Input graph" :0	
	Υ	line" : Z		
"Next 1" :F9	Frame selection	"Next 2" :F10	Frame selection	
	graphics		graphics	
"2NC1" : F5	Frame selection	"2NC 2" :F6	Frame selection	
	graphics		graphics	

Shortcut key operations can be performed on the "program" interface.

A、 "2NC/D1" 和 "2NC/D2" : Quickly generate 2NC code



At the bottom right corner of the "Full Drawing Programming" interface

"2NC/D1" is "execute all trajectory lines", "2NC/D2" is "execute trajectory lines within the leader".

Manufacture Resource(All Line)															
F Va	F Value 0.08 ShortOut 3						Walk.Sp 200					RUI	(YES)		
Save	2NC	¥/M/1	D	Angle	e.C1	0		Cut.S	Sp	1000				EXIT	
Limi	t.Bp	NoBee	∋p	Back	.St	50		Puase	e	On			· Sr	AVE H	`F
CutC	lass	4 Kin	nd	Back	.Sp	200		Date	Way	Hight	t . Sp	ß	> ci	JT SEI	ſ
Roug	h.Nu	0		Cut.	4u	3		Mate	rial	0		Alti	tude	10	
Group	P.W	P.I	Ι	V	H.V Stat	Grou Puls	Grou Stat	Step Puls	Step Stat	Loop Time	Loop Stat	Sing Stat	Fila Spee	Puls	+
M10	0	0	0	0	1	0	0	0	0	1	0	0	0	з "	
M11	0	0	0	0	1	0	0	0	0	1	0	0	0	10	SG
M12	0	0	0	0	1	0	0	0	0	1	0	0	0	20	
M13	0	0	0	0	0	0	0	0	0	0	0	0	0	30	

F Value	0.08	ShortOut	3	Walk.Sp	200
Save 2NC	Y/M/D	Angle.Cl	0	Cut.Sp	1000
Limit.Bp	NoBeep	Back.St	50	Puase	On
CutClass	4 Kind	Back.Sp	200	Date Way	Hight.Sp

Various parameters in "Run", you can immediately synchronize the current Settings when you click "Run".

RUN (YES)
EXIT
· SAVE H^F
> CUT SET

"Execute" : Start generating processing G code

Cancel: Exits the 2NC library

Save H^F: Save the current battery parameter file

"Cutting parameters" : enter manufacturing parameters, cutting times, deviation,

overcut, etc.

Rough.Nu 0	Cut.Nu	3	Material	0	Altitude	10

Contents of the material database. When there is a material database, you can select "Material", enter the value of "Altitude", enter the value of "Rough.Nu", instantly access the "manufacturing parameters" and "electrical parameters", just click "Run" to start processing.

Group	P.W	P.I	Ι	V	H.V	Grou	Grou	Step	Step	Loop	Loop	Sing	Fila	Puls	
					Stat	Puls	Stat	Puls	Stat	Time	Stat	Stat	Spee		•
M10	0	0	0	0	1	0	0	0	0	1	0	0	0	3 '	
M11	0	0	0	0	1	0	0	0	0	1	0	0	0	10	SG
M12	0	0	0	0	1	0	0	0	0	1	0	0	0	20	
M13	0	0	0	0	0	0	0	0	0	0	0	0	0	30	

Each item in Electrical Parameters can be modified independently. "SG" is the first electrical parameter when cutting starts. "+" to retrieve the saved Electrical Parameter file.

Manu	factu	re R	lesouro	ce(All	Line))		S	Note:C	utPause	
F Va	F Value 0 ShortOut 3					Walk.Sp	200		RUNCYES	>	
Save	2NC	¥∕M	I⁄D	Angle	.C1	0	Cut.Sp	100		EXIT	
Limi	t.Bp	NoB	leep	Back.	St	50	Puase	On		· SAVE O	сс
CutC	lass	4 K	ind	Back.	Sp	200	Date Way	Hight.S	•	< GROU SI	ЕТ
Roug	h.Nu	0		Cut.N	u	3	Material	0	Altitu	de 10	
CUT	Over lap	T	ab Iidth	Offseg	Freg	Gut Tab H-Freg	CutTab Stop	Nu 3 Cut	Nu 3 Cut	For M1* +M01	+
Cut.1 Cut.2 Cut.3	.30		1.2	.04 .02 0	1 2 3	0	0	0	0	0	

"Grou Set" (manufacturing parameters) : Each item can be modified independently and is automatically presented when retrieved from the material database.

Whether "2NC Library" has "material database" or not, you can manually set "cutting times", "cutting parameters", "electrical parameters", and one-click to start generating processing code, just click "Cut". "**2NC/D**" It can quickly access cutting and electrical parameters, and display the current selected file content and historical file content in real-time.

And, after clicking on "Generate G Code and Process", the G code can be automatically generated and retrieved to the processing interface. And the cutting frequency parameters and electrical parameters are configured at once.

The "2NC/D" can quickly and quickly process the 2NC code for users and achieve one click start processing.

All data can be modified. After clicking Execute, all data takes effect. And the processing graphics and processing parameters are all automatically completed, just click to cut.

"S" button can view the processing situation in real time. "Save File" can be automatically generated or saved according to the user's preference when selecting a file name.

1、 "In/Out Line"



This function needs to set the "gap compensation f" value used globally in option D, otherwise it cannot be used. If there is a "global gap compensation f" value, it will be displayed at the bottom of the screen. At the same time, if the D option f has a value, "Execute 1" or "Execute 2" will skip the input of the f value, but will be rendered.



Use the mouse box to select the required coefficient to modify the lead-in line of the graph, and enter the value of f.

What should be understood is that the+- input of the f value is only to switch the same side or the opposite side of the lead-in line of the current drawing.

Distance: if you enter f as - 2, the lead-in arrow moves to the opposite side. The change effect is as follows

Before change :







Please note that this f value is the gap compensation f value, and this f value is the f value of the graph you selected, which does not conflict with the global f value, and will be automatically converted into a coefficient to bring in after the input is completed. The purpose of entering f value is to make it easier to understand and use directly, but the final f value will be expressed as a coefficient.

This function can be modified in full drawing programming when applied to different graphics using different gap compensation.

Three ways to turn off "global f value": (ensure that "global f value" does not interfere with the next work)

(1) Manually reset the "global f value" to 0; (2) Exit the software and close it automatically; (3) "Global f value" and enter the post position.

Mind Map:

When the global f value is positive, all graphics are compensated according to the same side; When the global f value is negative, all graphics are compensated according to the opposite side. The logic is the same as the input effect of f value when it is set after.

The+- in "block change compensation f value" is only the switching direction.

Special cases:

After modifying the f value of a figure leader to 0, you can enter the+- f value at will after modifying the f value again, check the arrow direction, and then make the required+- f modification.

"Batch coeff." :

This function needs to set the "gap compensation f" value used globally in option D, otherwise it cannot be used. If there is a "global gap compensation f" value, it will be displayed at the bottom of the screen. At the same time, if the D option f has a value, "Execute 1" or "Execute 2" will skip the input of the f value, but will be rendered. Use the mouse box to select the required coefficient to modify the lead-in line of the graph, and enter the value of f.

Please note that this f value is the gap compensation f value, and this f value is the f value of the graph you selected, which does not conflict with the global f value, and will be automatically converted into a coefficient to bring in after the input is completed. The purpose of entering f value is to make it easier to understand and use directly, but the final f value will be expressed as a coefficient.

This function can be modified in full drawing programming when applied to different graphics using different gap compensation.



"Batch line" :

Follow the prompts to select a drawing that already has a leader



Then frame the block area where the same drawing exists



Automatically generate leaders with the same cut in and trend. (if the selected block area drawing is very different from the existing leader drawing, the leader length is automatically compensated)





Select the area of the block where the leader needs to be deleted, and all drawing

leaders in the block will be deleted automatically.



Leader deletion is completed after marquee selection.

"C' lastsetp" :

Cancel the previous operation of generating or canceling the leader, and return to the previous operation.

"Shrink&Blow" :

Reduce and enlarge the drawing in the leader operation, and automatically return to the leader interface after ESC is cancelled.

"Zoom" :



Click the mouse (left or right button) on the graphic interface in the "full drawing

programming" interface, or click the key D to quickly enter "zoom".





The left mouse button box selects the local zoom range, and the right mouse button box selects the local zoom range, which can be realized immediately. Double click the mouse (or ESC) to exit immediately.

Comprehensive function description:

Mouse (left+left) box selection=zoom in

Mouse (right+right) box selection=Zoom out

Mouse (left+left) click in place=exit

Mouse (right+right) click in place=exit

Mouse (left+right) click in place=full screen

Mouse (right+left) click in place=full screen

The combination of the above mouse buttons completely eliminates the use of a keyboard, and can complete all functions such as zooming in, zooming out, exiting, and full screen with one hand. Greatly accelerating graphics processing speed and smooth

operation.





Click $\uparrow\downarrow \leftarrow \rightarrow$ key in the "Full Drawing Programming" interface, or click button B to quickly enter the "Move Graph"



You can use the arrow keys (or the edge of the mouse) to move the image in "Move Image".

2、 "Overcut sharp corner"



"Program" - "Modify trace" - "Overcut sharp corner", please add lead in/out-line before using this function. Single graphics can be processed by frame selection, or multiple graphics can be processed in batch.



Overcut sharp corner, punch only (for single cut).

"Line OverCut" generate the following legend:



"Line OverCut" the lead-in line and the cut-in direction need to be in the same straight line direction, suitable for right-angle shape.

"Triangle OverCut" generate the following legend :



"Triangle OverCut" it is required that the lead-in and the cut-in direction are in the same linear direction, and can be used for non-right-angle shapes.

1Detected USB Drive2Box: Serial port3Default Path For R4Cautiousely Changes5Program Right'Bords6MDC Mode7EXIT	Letter /W File d Param.> e ESC	(1 (2 (3 (4 (5 (6	$\begin{array}{c} 0 & \rangle & H: \\ (0 & \rangle & COM \\ (0 & \rangle & \\ (0 & \rangle & Rad \\ (0 & \rangle & Rig \\ (0 & \rangle & MDC \end{array}$	ius,Motor,Sc nt'Borde ESC Mode(OFF)	ope,Jump (OFF)		
Work Card:PCI CARD		Work Path I:\WDDBB\HF9					
HF SYSTEM FOR ISA&PCI CARD							

3、 "Program Right' Borde ESC":

When the "Full Drawing Programming Right Touch Exit" is set to "ON" in "System

Settings", in the selection menu of full drawing programming branch column buttons,

right touch the rightmost border to return to the Home screen. This method can

accelerate the graphics rendering processing ability after habitual use.

4A、"READ"



Include :

"Call Traces" : Retrieve the trajectory line graph in HGT format.

"Call Auxs" : Retrieve auxiliary line diagrams in HGN format.

"Call Tr&Auxs" : Automatically retrieve HGN files with the same name after retrieving

an HGT file, such as retrieving SDJ Automatically retrieve SDJ after HGT HGN and

automatic full screen display.

"Call DXF" : Retrieve DXF format files that are compatible with all formats.

"Call CAD" : Must have a dedicated HF font library.

"Call GB Cha." : Must have a dedicated HF font library.

"Call AUTOP" : Retrieve DAT format file.

"<Clear>" : Clear screen, can be cleared in real-time on the image adjustment interface.

4、 "READ" - "CALL DXF"

Regardless of whether the HGT, HGN, or DXF files are retrieved during the image retrieval process, the graphics will automatically display full screen after the retrieval is completed



Any mouse button/enter key: execute downwards.



Any mouse button/enter key: execute downwards.

Any mouse button can quickly and directly reach the target file location with one click

when selecting "Retrieve DXF".

If we call DXF files generated by other software, we can use "Auto Merge Sort" to

quickly process graphics.



Call the DXF file generated by other software, and use "Auto Merge Sort" in "Sort" to





Example: When external DXF files are not "automatically merged and sorted"



Example: The case of external DXF files that have used Auto Merge Sort

After comparison, we find that the external DXF files that have used "automatic merge and sort" have become orderly and regular.

4B、"CAD"

Call CA	D Parameter
Character Set and it's name	Multiple Fonts: SHXNEXTNFST
Height(mm)	20
X-propotionality[1]	0
Center Rotation Gradient	0
Vertical Elevation Angle	0
Mirror or not	No
Arayal Mode	Base on MID-P of base line
Chara HF CAD cter:	
Exit	ОК

		(Call CAD)
Call CA	D Parameter	Hollow Char
Character Set and it's name	Multiple: SHXNEXTNITALCOMP	Hollow CN
Height(mm)	20	
X-propotionality[1]	0	User-Char
Center Rotation Gradient	0	User-CN
Vertical Elevation Angle	0	Multiple Fonts
Mirror or not	No	
Arayal Mode	Base on MID-P of base line	Exit
Chara HF CAD		
Exit	ок	



	(R)	EAD)
	1 Call	Traces
	2 Call	Auxs
	3 Call	Tr&Auxs
	4 Call	DXF
	5 Call	CAD
	6 Call	GB Cha.
	7 Call	AUTOP
	8 < C1	ear >
	0 EXIT	
Esc:Exit		

4C、 "Save"

"Trace&Ausx" : Automatically save the guide line as an HGN file with the same

name while saving the HGT file.

"F9=USB" : Quickly switch between storing local and USB drives (without

manually entering drive letters and paths, etc.).



F9=USB, F9 switch can achieve the function of storing to local or USB drive.



F9=USB, when stored on a USB drive, the USB icon will be displayed in the bottom

right corner of the interface.



USB valid (USB storage), the entered file name will be stored on the USB drive.

5、"De. Tr&Au" :Del Trace and Aux

You can box select graphics and batch delete selected graphics; You can also click on the trajectory line with the left mouse button to turn it into an auxiliary line; You can also right-click to directly delete trajectory lines or auxiliary lines.





Box select the graphics that need to be completely deleted



Delete key is YES


You can also change the trajectory line to a duplicate line, or directly delete the trajectory line or auxiliary line

Full function cancellation, capable of deleting all lines, and convenient and fast box

selection method makes graphics processing more convenient

"Change block" – "Translation" :



Retrieve HGT graphics



Adjust the graphics to the appropriate position



First, select the graphics that need to be listed in the 'Tacke block' box, and then select

'Translation'



Enter 'Number of Cycles', enter the displacement value in the X or Y direction (when

X=0, it means that the entire selection content has no change in X value, and when Y=regular, it means that the graph is in an upward array (when negative, it is in a downward array)

For example, the graph is arranged to the right, X=0, Y=25



Then select ' Take block ' and select 'Displacement' using the same method as before.

Through "displacement", we can achieve batch arrays of single and multiple shapes. In

practical operation, using 1-2 times can complete the array graphics.



When the operation is completed, the array graphics achieved through "displacement" are completed.



Through "Display traces' s", we will find that the order of the 1-6 rows of graphics is

from left to right. If the actual cutting needs to be carried out with the shortest route, please refer to "Directional Sorting"



"Order for traces" - "Direction sort" :

selecte "Order for traces" - "Direction sort"



Box select the shapes that need to be sorted (for example, the order of the second row of shapes was originally left to right)



Specify sorting direction: (1) Right; (2) To the left; (3) Up; (4) Down

When we perform operations on rows 2, 4, and 6 of the graphics, we obtain the

graphics



At this point, all graphics are completed according to the shortest route.





"Next 1" = Execute all trajectory lines (all shapes):



Execute all trajectory lines (all shapes)



The graphics are transferred to the generation, and the required machining code can be generated by post-processing.





Execute trajectory lines within the leader (all shapes)



The graphics are transmitted to the generator, and the required machining code can be

generated by post-processing.





When pressing F9, box select the shape to be selected (regardless of whether it has a leader).



The selected graphics are transferred to the generation, and the required machining code can be generated by placing them in the background.



F10= Execute the trajectory line within the leader (boxed shape):

When pressing F10, box select the shape to be selected (the shape needs to have a leader).



The selected graphics are transmitted to the generator, and the required machining code can be generated after being placed.

3、"Process" interface





Shortcut key :

OF." : Q	SUB" : P	"GR" : M	"EFF.STEP/S" : N

"HIGH	"MOTOR" : J	"Pu":R	"Si" : S
FREQENCE" : I			
"ON/OFF" : O	"PULSE-":- or K	"PULSE+" :+ or	"EP":R
		L	

"EP":Electrical parameter transmission



"EP":(Shortcut key R): Click to enter the electrical parameter sending interface,

complete and return to the processing interface.



HF WEDM														
Current Class:M10 Out Para.(4-type)														
Class	s P.W	P.I	I	v	HVol stat	Grou puls	Grou stat	step puls	step stat	loop time	loop stat	sing stat	lfila spee	Puls
M10	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	5
M11	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	21
M12	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	22
M13	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	23
M14	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	24
M15	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	25
M16	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	26
M17	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	27
Out Paramet.(Not change)														
Class: 0 1 2 3 4 5 6 7 (No=Enter):														
COM	Port	Clos	e,No	Activ	e)									
						09	:02:3	5						

This interface can switch between three modes through the following methods:

- (3) Sending electrical parameters (not modifiable)
- (4) Sending electrical parameters (modifiable)
- (1) Enter the main interface of electrical parameters



"S": mechanical coordinates



Processing interface, S-key to enter; S-key exit

"OF.": Instant compensation function (three functions).

-"SAME TIME"

- -"CUSTOM:FE/MALE"
- -"DIFFE' TIME F' "
- "<START FIX TR>"
- "EXIT"

The compensation that needs to be added in the next picture can be modified in real time without redrawing and regenerating the G code. It should be noted that if instant wire compensation is used, the content of the G code is different from the G code file without instant wire compensation. Therefore, if there are multiple instantaneous wire compensation, the compensation coefficient should be considered on the basis of the compensation that has been done before.





" compensation "-"Film with the same cut times":

All graphics in the processing diagram are used for real-time wire compensation according to the cutting times parameter of the current mode or the OCC file is selected, and the cutting times are the same.

1 SAME TIME F' 0.1
2 CUSTOM FE/MALE 0
3 DIFFE' TIME F'
4 <start fix="" tr=""></start>
5 EXIT
CUTTING OFFSET 0
MALE OVER LEN. 0
TAB 1-C MARGIN 0
FEMALE TAB LEN 0
FEMALE TAB WID
SAVE CANCEL
-6=Cut Of Times

" compensation "-"Customized Instant wire compensation ":

Real-time wire repair is made according to the parameters of the die length, step margin,

die step height and width.

1 SAME TIME F' 0.1						
2 CUSTOM : FE/MALE 0						
3 DIFFE' TIME F'						
4 <start fix="" tr=""></start>						
5 EXIT						
Graph Number: 1 The 1 Graph(OCC):						
Need Exist OCC						
■6=Cut Of Times						

" compensation "-"Film with different cut times":

The real-time wire compensation of OCC (post-cutting times parameter file) is defined according to the cutting times of different graphics in the processing drawing and the total compensation coefficient.

" compensation "-"Customized Instant wire compensation ":

Real-time wire repair is made according to the parameters of the die length, step margin, die step height and width.



" compensation "-"Apply M.R.P":



If "Applied pitch MRP" is set to "NO", it means that "Reading disk automatic pitch MRP" is not enabled. In this case, MRP cannot be applied but the trajectory can be corrected in real time.



When "Applied pitch MRP" is "old MRP", it means that "control" - "reading disk automatic pitch MRP" is on, and the XY value of the old pitch is used in the real-time correction trajectory (no real-time detection of the lower machine signal).



When "Applied pitch MRP" is "New MRP", it means that "control" - "reading disk automatic pitch MRP" is on. The XY value of the new pitch is used in this real-time correction trajectory (real-time detection of the signal of the lower machine).

" compensation "-"Film with different cut times":

The real-time wire compensation of OCC (post-cutting times parameter file) is defined according to the cutting times of different graphics in the processing drawing and the total compensation coefficient.



No matter what method of wire compensation is selected, click "Start Correction Track", and the calculation and compensation will start automatically. After completion, it will automatically return to the processing interface to start a new cutting.

Please refer to the "post" G code generation instructions for the "post" method of generating G codes with different cuts.

"NULL":NULL WALK

Real-time display of "Maximum setting speed of idling", MAX:******. In addition to satisfying the stepping motor, the idling motor automatically performs uniform speed increase at the beginning, full speed idling in the middle, and uniform speed reduction at the end of the servo motor during idling, ensuring the full-function and stable state of the servo motor during idling.

HF V9		ULSE – 10	+ ON/OFF
		X000	0000
		Y000	0000
	\sim	+ WALK	+ ONE
		- WALK	- ONE
		+N ONE	-N ONE
	\sim	(1000/S):20	00
	OF.	EX	IT
	SUB	MAX:	1000
SUB>>	GR	TIME=0H 0	000.00.00
N0000 G92 X0Y0Z0 {F= 0.0 X= 22.0 Y	= 0.0}		
NAME: Z1 ZNC SEGM: 0 11	:22:09 MODE: ST	OP EFF.STEP/	S ESC







" NULL " – "Normal Mode" :



Edge detection is not carried out in "General mode" during empty walk.

" NULL " – "Edging Mode" :



Edge detection in "Common Mode" in the X9 version.

" NULL " has three modes:

Unrestricted idling: when the pause symbol is valid, M00 pauses during idling; when the pause symbol is invalid, M00 does not pause during idling, and the entire process is idling.

Single-segment empty walk: just walk a piece of code.

N-segment idling: according to the set N number, N number of effective segments (M00 non-effective segment) will be taken.

N segment delay: After N segment input, you can enter the inter segment delay time, and enter or 0 without delay. This function is applicable to measuring the error value of each segment with a laser interferometer and generating the pitch format file AME with one click in "Pitch format conversion" in "Other functions".



When using the N segment idling function, you will be prompted to enter "DELAY (S)"

after entering the N segment number, and the default "Enter" is not used. If the number of seconds is entered, it will automatically delay and continue after each segment is empty. This function is mainly used to trigger the measurement of "Renishaw Laser Interferometer", and can cooperate with "Pitch Format Conversion" in "Other Functions" to automatically convert all values and measurements into AME format pitch files and apply them with one click.



HF X9		ULSE - 3 + ON/OFF
		X0000001 Y0000000
		+ WALK + ONE + N - WALK - ONE - N Max Speed
	OF.	-> (Edging Mode) <- EXIT
SUB>>	SUB GR	TIME=0# 0000.07.32
N0004 M00 → N0005 G00 X 14.4444 Y 1	1.4815	
NAME: 5 2NC SEGM: 5	15:25:04 MODE: ST	OP EFF.STEP/S ESC

"Walk" has two modes:

(1) General mode: ordinary empty walk.

(2) Side touch mode: Pause immediately after detecting side touch signal during empty walk.

"READ" :

(1) G-code

- (2) 3B-code
- (3) G-code –(Vary)

(Communication angle): it can automatically input the angle and call the G code according to the mechanical feedback angle. Machinery manufacturers can customize the lower computer design with reference to the communication protocol.

HF V9		PULSI	E —	4	+	0N/OFF
			2NC TAC 3B	3NC TA1 BBB	4NC 1S0 +90	5NC CNC
			R	otate	180	
			R	otate	-90	
			X-ax	ial su	ummet)	ry
	OF	2.	Y-ax	ial s <u>u</u>	ymmeti	ry
	SL	JB .	(G	ain An No chi	ngle)	
SUB>>	GF				ange a	
NAME: T1 ZNC SEGM: 0 11	15:23 MODE:	Read	EFF.S	TEP/S		ESC

- (4) 3B-code –(Vary)
- (5) Class&Para. + G-code
- (6) Other Function
- (7) Correcting the pitch

			XYUV Thre	ad Pitch				
XY Data:	Segment:20	Length:0.01	(Amen	d-No)				
UV Data:	Segment:20	Length:0.1	(Yes-XY)	¦(Yes-UV)				
Base Point:	X:300	¥:200						
			-					
			Start	Amend				
			Clear Amend-Yes Sign					
			XY Edit	UV Edit				
			T.P Test&Amend					
			Config File	(Save/Load)				
			Exi	t				
1)Datum Point Right Upper.	1)Datum Point Of XY At Bottomm Left Corner. 2)Cutting Start Point Of XY At Right Upper. 3)Inital Point Of UV At Mid-Point Of UV							
	13:21:11							

		XYUV Thread Pitch					
XY Data:	Segment:10	Length:10					
UV Data:	Segment:0	Length:0					
Base Point:	X:300	¥:200					
			XY Read	XY Save			
			UV Read	UV Save			
			AME Input	AME Output			
			E	xit			
1)File *.AME 2	1)File *.AME 2)Save path XYUV 3)First name:XY or UV 4)Input max:5bit						
14:30:49							

Correction of pitch includes: XY editing, UV editing, XY reading, UV reading, XY saving,

UV saving, AME import, AME export. Import AME, export AME as batch import export *

The pitch parameter file in AME format.

(1) XY Save: If you enter 111, it will be saved to the XYUV \ XY-11I.AME file.

(2) XY read: It selects a saved file The AME file changes in real-time to the pitch parameter of this XY.

(3) AME import: Import all AME files from a certain location (such as a USB drive) into the local XYUV directory.

(4) Export AME: Export all AME files in the XYUV directory of the local machine to a certain location, such as a USB drive.

The above functions can greatly facilitate machine tool manufacturers to debug different pitch compensation machine tools.

"T.P Test&Amend" :

The error of pitch can be measured directly by laser interferometer on the basis of non-

drawing

Thr	Thread Pitch Test								
x	Segment	10	Length(mm)	0.01	Start >				
¥	Segment	0	Length(mm)	0	Start >				
U	Segment	0	Length(mm)	0	Start >				
V	Segment	0	Length(mm)	0	Start >				
Thr	ead Pitch Aj	pply							
хч	Segment	20	Length(mm)	0.01	XY EDIT	Start »>			
υv	Segment	20	Length(mm)	0.1	UV EDIT	Start »>			
SET	Se. Delay	0(8)	Run Number	4	Run Speed	200(/S)			
C.F	Start S.D	1(mm)	End S.D	1(mm)	Run Mode	Two-Way			
	Clear		Exit (T	hread)	Exit (Main)			
Not	Note:Pulse Equivalent(X=1;Y=1;U=1;V=1)/(Base-Point:X=0;Y=0)								

Two functions are available: Test and Apply.In general, you should try "test" before using

"apply". You can also use the ESC key to cancel "Execute".

Thre	Thread Pitch Test »								
x	Segment	10	Length(mm)	0.01	Start >				
¥	Segment	0	Length(mm)	0	Start >				
U	Segment	0	Length(mm)	0	Start >				
v	Segment	0	Length(mm)	0	Start >				
Thre	ead Pitch A	pply							
хч	Segment	20	Length(mm)	0.01	XY EDIT	Start »>			
υv	Segment	20	Length(mm)	0.1	UV EDIT	Start »>			
						_			
T.P	T.P Test 1/4								
L									
	Clear		Exit (Thread) Exit (Main)						
Note	e:Pulse Equ	ivalent(X=1;Y	=1;U=1;V=1)/	(Base-Point:X	=0;Y=0)				

The error data is obtained by using pitch test and laser interferometer.

Thread Pitch Test												
x	Segment	10	Length(mm)	0.01	Start >							
¥	Segment	0	Length(mm)	0	Start >							
U	Segment	0	Length(mm)	0	Start >							
v	Segment	0	Length(mm)									
Thread Pitch Apply »												
хч	Segment	20	Length(mm)	0.01	XY EDIT	Start »>						
UV	Segment	20	Length(mm)	0.1	UV EDIT	Start »>						
						_						
T.P	Apply					12/20						
	Clear		Exit (T	hread)	Exit (Main)							
Note:Pulse Equivalent(X=1;Y=1;U=1;V=1)/(Base-Point:X=0;Y=0)												

On the basis of available data, start one-click pitch correction.

HF V9				EP				PULSE	-	4	+	0N/0FF
XY Amend data(provide by suplier):Unit mm;thread pitch unit step,+ or -												
P 1/3												
Segment 93 Length 20				Invalid			Valid	P–U p		P-Dow	P-Down Selec	
1 X 1.4	Y	1.4	2	х	-2.6	Y	-2.6	3	х	0.1	Y	0.1
4 X -2.4	Y	-2.4	5	х	-1.3	Y	-1.3	6	х	-1.9	Y	-1.9
7 X -1	Y	-1	8	х	-0.8	Y	-0.8	9	х	-0.4	Y	-0.4
10 X -2.2	Y	-2.2	11	х	0	Y	0	12	х	-0.5	Y	-0.5
13 X -1.8	Y	-1.8	14	х	-0.4	Y	-0.4	15	х	1	Y	1
16 X 0.4	Y	0.4	17	х	1.6	Y	1.6	18	х	1.9	Y	1.9
19 X -0.2	Y	-0.2	20	х	-1	Y	-1	21	х	0.1	Y	0.1
22 X -2.1	Y	-2.1	23	х	-2.6	Y	-2.6	24	х	-2	Y	-2
25 X -2.5	Y	-2.5	26	х	-1	Y	-1	27	х	-0.2	Y	-0.2
28 X -0.8	Y	-0.8	29	х	0.9	Y	0.9	30	х	2.1	Y	2.1
31 X 0.2	Y	0.2	32	х	1.4	Y	1.4	33	х	-2.6	Y	-2.6
34 X 0.1	Y	0.1	35	х	-2.4	Y	-2.4	36	х	-1.3	Y	-1.3
NAME :			10:50:5	3	MODE: 1	Read	EFF	.STEP/S		ESC		

"Thread Pith Amend Data" :

HF	V9						EP			PULSE		4	+	0N∕0FF
	UV Amend data(provide by suplier):Unit mm;thread pitch unit step,+ or -													
_													P 1/	′ 8
3	egme	nt	93 Len	gth	20	In	valid	V	alid	P-	Սթ	P-Dow	m Sel	lect
	1	+U		+V		-U		-V						
	2	+U		+Ų		-U		-V						
	3	+U		+Ų		-U		-V						
	4	+U		+Ų		-U		-V						
	5	+U		+Ų		-U		-V						
	6	+U		+Ų		-U		-V						
	7	+U		+Ų		-U		-V]				
	8	+U		+Ų		-U		-V]				
	9	+U		+Ų		-U		-V		1				
	10	+U		+Ų		-U		-V		1				
	11	+U		+Ų		-U		-V		1				
	12	+U		+Ų		-U		-Ų						
NA	ME :			SI	EGM :		10:56	5:33	MODE :	Read	EFF .	STEP/S		ESC

Screw pitch XYUV editable unlimited N segments
Among them (5) you can select high-frequency parameters and then select the processing G code at the same time to complete the configuration required for processing at one time. If the H^F file is not selected in (5), the parameters will be sent according to the current default high-frequency parameter configuration file that has been set. High-frequency parameter files are retrieved and used in real time, improving work efficiency and human-machine integration.



"Check" - "Pull" :



HF	' U9 EP .		D PUL	SE	3	+ ON/OFF
	(1) Certain pul	ley dista	nce			
	Note:Certain pulley distance use a c Gradient<0:top big bottom small	cone;Grad 1.	ient>0:t	op sma	ll bott	om big,
	Old di. of Top to Down	12	.00000			
	Old dis. Down to bench	12	.00000			
	Work piece thickness	19	.00000			
	Single gradient(°) is	-15	.00000			
	Down arc diam.(mm) is	20	.00000			
	Top arc diam.(mm) is	30	. 18207			
	Solid:Y-Diam. of Down.	15	.00000			
	Solid:Y-Diamet. of Top	30	.00000			
	Calculation Bring	Into	Exit			
	Distance of Top to Down	: 8	. 14566			
	Distanc of Down to bench	: 1	.81232		Bring	Into OK
NA	ME: 1 2NC SEGM: 0 10:4	7:53 MO	DE: dis.	EFF.	STEP∕S	ESC

Each function contains a "plug in" function, which can directly plug the calculation results into the "guide wheel parameters".

HF	V9	ULSE - 3 + ON/OFF							
	(2) Certain pul	ley distance							
	Note:Certain pulley distance use two cones;Gradient>0:top small bottom big,;Gradient<0:top big bottom small.								
	Old di. of Top to Down	194.00000							
	Old dis. Down to bench	76.00000							
	Cone 1#	Cone 2#							
	Work piece thickn. 10.00000	Work piece thickn. 20.00000							
	Single gradient(°) 2.00000	Single gradient(°) 2.00000							
	Down arc diam.(mm) 2.00000	Down arc diam.(mm) 2.00000							
	Down arc diam.(mm) is 1.30158	Top arc diamet.(mm) is 0.60317							
	Solid:Y-Di. of Top 1.00000	Solid:Y-Di. of Top 0.00000							
	Calculation	Exit 🔖							
NA	ME: EXAMP2 3NC SEGM: 0 17:0	0:53 MODE: Dis. EFF.STEP/S ESC							

HF	' V9			_	J L 🔲	PULSE -	- 3	+	0N∕0FF	
		(3) Ce	rtain distance	of	Top to Down	pulley				
	Note:Certain distance of Top to Down pulley use a cone; Gradient>0:top small bottom big,Gradient<0:top big bottom small.									
		01d d	i. of Top to Do	ωn	194.000	00				
		Dist.	of Down to ber	ch	76.000	100				
		Singl	e gradient(°)		0.000	00				
		Down	arc diameter(mm	o:	0.000	00				
		Solid	:Y-Diame. of Do	ωn	0.000	00				
			Calculation		Exit 🔓	•				
NA	ME: EXAMP2	3NC S	EGM: 0 17	':01	:21 MODE:	Dis. EF	F.STEP/S	s	ESC	

HF	' V9				_		PULSE	—	3	+	0N/0FF
			(4) Ce	rtain distand	e of	Down pulley	to ben	ch			
	Not	e:Certai Gradie	n dista nt>0:to	nce of Down y p small botto	pulley om big	to Bench us ,Gradient<0	se a co top bi	ne; g bot	tom s	small	
			01d d	is. Down to l	ench	76.000	<u>300</u>				
			Singl	e gradient(°))	0.000	<u>900</u>				
			Down	arc diameter((mm):	0.00	000				
			Solid	:Y-Diame. of	Down	0.00	<u>900</u>				
				Calculation	n 🗌	Exit 🔓					
NC	ME	FYAMP2	3NC 9	FCM: 0	17.01	·51 MODE:	Die	FFF Q	TED	1	FSC

HF	' V9	_		3 + ON∕OFF
		(5) Calculation Pu	lley radius	
	Note:Certai Gradie	n pulley radius use a con nt>0:top small bottom big	ne; {,Gradient<0:top big b	ottom small.
		Old Pulley radius	19.00000	
		Work piece thicknes	40.00000	
		Single gradient(°) is	2.00000	
		Down arc diam.(mm) is	1.00000	
		Top arc diame.(mm) is	-1.79366	
		Solid:Top arc/Down arc	is Top arc	
		Solid:X-Diameter is	1.00000	
		Calculation	Exit 🔓	
NA	ME: EXAMP2	3NC SEGM: 0 17:02	2:20 MODE: Radi EFF	.STEP/S ESC

"Check" and "Rastr":



"MOVE" :



The contents of the previous shift, such as LOD:+X 1, and the contents of the current shift, such as NEW:+X 100, are displayed.

At the same time, Send is displayed when sending data. If a large number of data is being sent continuously, Send persists or blinks.

" To Vertical" : Records all XYUV numbers in the manual axis shift, and sends them in first-in-last-out mode in the center of the back.

"**SI**" **and** "**Pu**": The water pump and the wire barrel switch can independently control each item (open the "pump wire" control in the "control") (expansion card pins are required). If the option is turned on in "Control", the button will be displayed on the processing interface, and the water pump and the wire barrel will be turned on automatically when you click on it.

"**OBJECT**" : A red dot will be displayed on the "Position" button when the pause symbol is valid, and a black dot will be displayed when it is invalid, which can be viewed in real time.



"**RTS**": The remaining time (minutes) to cut the workpiece in the forward or reverse direction, calculated based on the current cutting efficiency, the RTS fluctuates slightly, but it is basically accurate. It allows the user to leave the cutting duty and switch to work again within the required time.

"Blue Wave Bar": Display the current efficiency percentage according to the set cutting speed, and understand the settings and processing efficiency in real time.

"SUB": "Sub-Control Center" (SUB X9 Sub-Control Center)

Enter the "Sub-control Center" by pressing the P key in the processing interface, or you

can choose to enter by pressing the button.

"**SUB**>>": SUB>> is displayed as "Sub-Control Center" 5. After the function is turned off (OFF), the processing interface can query the SUB status in real time. Example: When the "**Dry running in reverse direction after cutting**" is set to ON state, SUB. will be displayed as SUB-6, and so on. At the same time, SUB can provide "sub-control center" combined function display, such as S5S7.

"Aligning to edge": Ordinary centering and edge alignment of molybdenum wire, if you want to achieve better accuracy requirements, please use the digital display method. The load resistance value of the high-frequency power supply output must be greater than 510 ohms when centering and opposite sides.

"Measurement ": A common alignment method for molybdenum wire edge contact. If you want to achieve better accuracy requirements, please use digital display. The load resistance value of the high-frequency power supply output needs to be greater than 510 ohms when aligning with the opposite side.

HF V9	EP		PULSE - 3 + ON/OFF
Defau	It Paramenters During Measurement	t:	8. Profile Angle
			9. Profile Aenter
			A. Side
1	Touch the number of times of the each side (>=1)	8(times)	B. Inner Center
2	Starting.Step-num. of no measure the walking(>=100)	100(step)	C. Rotat Coordinate
3	(num.)side empress again measure while walk.(>=0)	No	D. Coordinate Change
4	(num.)signal in measure while walk of process(>=0)	No	
5	Most quickly speed(step/s)	300	UP Y 4
6	Most slow speed(step/s)	200	Left Cent Righ
۹ ₂ -	EXIT		
			Down Y 5
			6. Set Config 8
	(3)(4)only for V1		7. Exit
NAME :	2 2NC SEGM: 11 13:	14:01 MODE: S	TOP EFF.STEP/S ESC



'Measurement' includes the first generation of 'alignment to edge' and the second generation of 'alignment to edge'

The second generation of "measurement" includes: "external angle finding", "external center finding", "edge finding", and "internal center finding"

'Finding the center inside' includes: 'Centering the circular hole', 'Centering the groove',

'Rotat Coordinate'

'Finding the center of the hollow circle at three points', and' Finding the center of the solid circle at three points'

HF X9			H	PULSE –	4 +	0N∕0FF
		Pr	∿o-Angle	P0 : P0	P1 P2	РЗ
				5. X	Distance	0.0mm
				6. Y 7. Wi	Distance re Diameter	0.0mm 0.0mm
				8. Ru	m(step)	
				Beal:	11	
					P3 -x-+ -⊻	P2 -+X
*¥ Ĺ+X				Unit:m		P1
NAME :	SEGM:	13:57:16	MODE: ST	TOP EFF	.STEP/S	ESC

"Pro-Angle" :

HF X9			P	ULSE – 4 +	0N/0FF
		Pr	o-Angle	P0 P1 P2	P3
				: PØ	
				5. X Distance	0.0mm
				6. Y Distance	0.0mm
				7. Wire Diameter	0.00
				8. Run(step)	0.10
				0. Exit	0.15
				Real:	0.20
				P3	0.25
				¥+	0.30
				-x	User
+ Y				Р ^{и — У} е	Exit
Ĺ				P0	P1
				UIICOMM	
	SECN -	12:50:14	MODE: OT		FSC
HHIL.	SEGU.	13.38.11	HODE: 21	OF EFF.STEP/S	ESC

The "Shape Corner Finding" includes four modes: P0, P1, P2, and P3, each with corresponding placement positions for molybdenum wires and workpieces.

The red dots of P0, P1, P2, and P3 represent the initial position of the molybdenum wire. The 'X-axis displacement' is the longest route length for X-axis motion, while the 'Y-axis displacement' is the longest route length for Y-axis motion.

"Pro-Center" :



The "Outline Classification" includes four modes: M0, M1, M2, and M3, each with corresponding placement positions for molybdenum wires and workpieces. When using this function, the position of the molybdenum wire is approximately placed at the center of the workpiece (precision is not required).

The red dots of M0, M1, M2, and M3 are the initial positions of the molybdenum wire.

The "workpiece width" refers to the actual width of the workpiece, and the "movement distance" refers to the distance that the molybdenum wire moves vertically towards the workpiece.

"Side" :

HF X9				PULSE - 4 + ON/OFF
			Side	X+ X- Y+ Y- : X+ 5. Rollback Dis. 0.0mm 6. Wire Diameter 0.0mm 7. Run(step) 0. Exit Real:
+¥ ↓ ↓ +X				. Unit:mm
NAME :	SEGM:	14:07:00	MODE: S	TOP EFF.STEP/S ESC

The red dot represents the initial position of the molybdenum wire.

"Inner"



The "finding the inner center" is divided into "dividing the center of a circular hole",

"dividing the center of a groove", "finding the center of a hollow circle at three points", and "finding the center of a solid circle at three points"

HF X9		PULSE - 4 + ON/OFF
		Round hole ذ 45° : ذ 3. Max Move Dis. 10mm 4. Run(step) 0. Back
+¥ Ĺ→+X		0°: Unit:mm
NAME :	SEGM:	14:11:10 MODE: STOP EFF.STEP/S ESC

"Inner" - "Round hole" :

The red dot represents the initial position of the molybdenum wire.

"Inner" - "Trench" :



The red dot represents the initial position of the molybdenum wire.

"Inner" - "3Point Void" :



The red dot represents the initial position of the molybdenum wire.

HF X9		PULSE - 4 + ON/OFF
+Y ↓ ↓ +X		3Point Sol. X+ X- Y+ Y- : X+ Rad. Dia. R= 30 7. Run(step) 0. Back Real:
NAME :	SEGM:	14:13:25 MODE: STOP EFF.STEP/S ESC

"Inner" - "3Point Sol." :

The red dot represents the initial position of the molybdenum wire.

"Rotat Coordinate" :

HF V9			EP			PU	LSE –	3	+	0N∕0FF
							Rot	at Coo	ordina	te
							1. Sel	ect G-	Code	File
		6					2. Aut	o Find	l Ang l	e
		(,,				3. Cut	om Ang	le	
							4. Exi	t		
υv										
ХЧ							222	.6NC		
			,,							
NAME :	3 2NC	SEGM: 0	0 1	13:30:06	MODE:	STO	P EFF.	STEP/S		ESC

Real time display of G-code file graphics

HF V9	EP P	ULSE - 3 + ON/OFF
		Rotat Coordinate
		1. Select G-Code File
		2. Auto Find Angle
		3. Cutom Angle
		4. Exit
XY C		Fully Automatic
Gain Angle = Wait Machine Wo	prk Signal	(Anykey Break)
NAME: 3 2NC SEGM: Ø	13:30:40 MODE: ST	OP EFF.STEP/S ESC

Capable of "fully automatic communication angle"

HF V9	EP	PULSE	- 3 + 0N/0FF
			Rotat Coordinate
		1.	Select G-Code File
		2.	Auto Find Angle
		З.	Cutom Angle
		4.	Exit
UV			
ХУ			Angle:10
	_		
NAME: 3 2NC SEGM	: 0 13:31:23	MODE: STOP	EFF.STEP/S ESC

Customizable rotation angle

"Coordinate Change" :



HF V9]					EP		F	PU)	LSE - 3 + ON/OFF
							_			1. Exit
Curr	ent	2	Ta	rget 5	5	Execu	te	Reverse		2. Move Speed
Find	Page	Pg:1				PageUj	р	PageDown		SPEED(/S):515
1	x	0	Y	0	U	0	V	0		3. Mach.Coordinnates
12	x	0	Y	0	U	0	V	0		5 Clean Config
3	х	0	Y	0	U	0	Ų	0	Ľ	5. Clear conrig
4	х	0	Y	0	U	0	V	0		Current(Nu):2
I 5	X	1	Y	1	U	2	V	8		X:0 Y:0
6	X	0	Y	0	U	0	V	0		U:0 V:0
7	X	0	Y	0	U	0	V	0		Target(Nu):5
8	X	0	Y	0	U	0	Ų	0		X:1 Y:1
9	X	0	Y	0	U	0	V	0		U:2 V:8
10	X	0	Y	0	U	0	V	0		
NAME :	1	2 N	c :	SEGM: 7		09:41:0	03	MODE: ST	[0]	P EFF.STEP/S ESC

HF V9)				[EP				PU	LSE -	- 3	+	0N∕0FF
		-	_								1.	Exit		
Curr	ent	2	Ta	rget	5		Execut	e	Reverse	ľ	2.	Move	Speed	
Fini	Dage	Pa 1					Pagella	-	Page Deum	╢		SPEED	- (/s):	515
FIIIC	iraye	19.1					rageop		ragenown					
1	x	0	Y	0	U	0		Ų	0		з.	Mach.	Coord	innates
12	X	0	Y	0	U	0		Ų	0		5	Clean	Conf	ia
3	X	0	Y	0	U	0		Ų	0	Ľ	у.	Clear	Com	19
4	X	0	Y	0	U	0		Ų	0		Curr	ent (Nu):2	
I 5	X	1	Y	1	U	2		Ų	8		X:0		¥:0	
6	X	0	Y	0	U	0		Ų	0		U:0		V:0	
7	X	0	Y	0	U	0		V	0		Tar	get(Nu):5	
8	Х	0	Y	0	U	0		Ų	0		X:1		¥:1	
9	X	0	Y	0	U	0		V	0		U:2		V:8	
10	X	0	Y	0	U	0		Ų	0			Exec	uting	
													_	
NAME	1	2 N	C :	SEGM: 7		6	9:41:3	0	MODE: S	TO	P EF	F.STEP	∕s	ESC

" Coordinate Change " can move the mechanical coordinates of different workpieces to facilitate timely coordinate switching between 1-10 workpieces.

4、 "Processing"-"Parameters" main interface

HF	V9			EP J L 🗆	PL	ILSE - 3 + ON/OFF
	1	Examine the time of short circuit	•	1(\$)		2.2NC
	2	The pure Cape postpones the time	:	On Sing:3(S)		
	3	Step number of UNDO	:	1000(Step)		
	4	Speed of UNDO	:	1000(Step/S)		
	5	The Speed of NULL and MOVE and RESCT	:	1000(Step/S)		
	6	Most quickly speed of MOVE and RESCT	+	500(Step/S)		
	7	CUT to End:Close machine and beep	:	No ,No Beep		
	8	UNDO to End:Close machine and beep	:	No ,Beep 10(S)		MOVE CHEC PARA EXIT
	9	CUT the hour the most quickly speed	:	100(Step/S),(1)		
	Â	Work piece thicknes (cal. effici. use)	:	300(mm)		
	B	Para. of Pulley	>>	(When 4-axes.)		•OBJECT RESCT MEASUR
	С	Para. of 4-axes	>>	(Can't as on.)		+CUT +ONE CONTIN
	D	Other parameters	»			-CUT -ONE STOP
	0	EXIT				TIME=0H 0000.00.21
NAM	E: 2	2NC SEGM: 11		13:00:57 MODE: 1	Par	a EFF.STEP/S ESC

HF	V9			PULSE - 3 + ON/OFF
Pa	ra.	Of Pulley:		1.2NC
	_			
	1	Pulley types	Pulley not swing	
	2	Pulley radius	10(mm)	
	3	Distance of the Top to Down Pulley	20(mm)	
	4	Distance of the Down Pulley to bench	30(mm)	MOVE CHEC PARA EXIT
	5	(Calculator)		READ 5 DRYRUN5 UNDO 1
	0	EXIT		•OBJECT _B RESCT B MEASUR
				+CUT B +ONE CONTIN
				-CUT -ONE STOP
No	te∶l	Jhen 4−axes CUT. use		TIME=0H 0000.00.00
NA	ME :	1 2NC SEGM: Ø	10:46:48 MODE: Pa	ara EFF.STEP/S ESC

"Calculator" can be transferred to "Guide Wheel Parameters" by "substitution" after passing the calculation result.

HF	V9			PULSE - 3 + ON/OFF
Pa	ra.	of 4-Axes:		2.2NC
	1	XY-axes types :	З*6ср	
	2	UV-axes types :	(+dp)+(-dp)	
	3	XY-gear'compensa. :	0, 0(µm)	
	4	X-plank'direction :	Not Verse	
	5	Y-plank'direction :	Not Verse	
	6	U-plank'direction :	Not Verse	MOVE CHEC PARA EXIT
	7	V-plank'direction :	Not Verse	READ DRYRUN UNDO
	0	, EXIT		•OBJECT RESCT MEASUR
				+CUT +ONE CONTIN
				-CUT E -ONE STOP
No	te:(Can't Be Modify Arbitrari	ly	TIME=0+ 0000.00.21
NA	ME :	2 2NC SEGM: 11	13:02:06 MODE: Pa	ara EFF.STEP/S ESC

HF	' V9	E	ΣP		PL	ILSE - 3 + ON/OFF
	1	The solid hour shows data time the partition:	e	0.1		2.2NC
	2	Measure limit and beep :	S	les,Yes		
	3	OUT allow the signal to _w control the self-box?	ŀ	10		
	4	Repeat CUT »	5	les		
	5	Pulse equivalent of xyuv-axes »				
	6	Modul of Touch the side»	E	B(times)		
	7	Measure the Photo-Card?»	Þ	10		
	8	Class or Parameters (use as MULTI-CUT) »				MOVE CHEC PARA EXIT
	9	Of 5'OUT-Port »	ŀ	ULTI-CUTiother		
	A	G00 Protect Set :	C	CLOSE		
	В	Process Graph. Delay :	ŀ	forma l		•OBJECT RESCT MEASUR
	С	Parameter Lock :	١	10		+CUT B +ONE CONTIN
	D	f Automatic Capture :	C)FF		-CUT -ONE STOP
	0 (SEX I T				TIME=0: 0000.00.21
NA	ME: 2	2NC SEGM: 11	13	3:02:34 MODE:	Par	a EFF.STEP/S ESC

At the same time, the "parameter" interface includes "parameter locking" to protect important parameters and prevent misoperation and change. After locking, click "xyuv four axis parameters" and "other parameters" to prompt "unlock: 0000". Enter 0000 to enter, and enter 6666 to permanently unlock. After permanent unlocking, you can also use "parameter locking" to re lock.

4、 (1) "Measure limit and beep"

"Press" - "Para" - "other paramters" - "measure limit and beep"

HF V9		EP JL 🗆	D P	ULSE - 3 + ON/OFF
Measu	re Limit&Beep:			2.2NC
1	Measure Limit ? :	Yes	;	
2	Measure Beep ? :	Yes	;	
0	F EXIT			
				MOUE CHEC PARA EXIT
				HOVE CHEC2 THAN ENTIN
				READ 5 DRYRUN UNDO 1
				•OBJECT, RESCT , MEASUR,
				+CUT 8 +ONE CONTIN
Note 1	imit Reen Lou Level vali	d Pont10		-CUT E -ONE STOP
noteri	Imit, Beep Low Level Vall Imitate, Short Circuit The	P10,P8		TIME=0# 0000.00.21
NAME :	2 2NC SEGM: 11	13:03:07 MO	DE: Pa	ra EFF.STEP/S ESC

The function is effective at low level, and the limit signal and alarm signal are set at the same port, and the external lines can be combined and unified.

If the simulation test is required, please short circuit the parallel port P10 and P8

interfaces during processing. If the signal occurs, the "alarm or limit signal detected"

will be displayed, and the cutting will be suspended automatically.

(Note: the function of V9 version is different from that of earlier v7. Please plan according

to the latest setting requirements)

5、"Processing"-"Parameters"-"Z-axis table or self-rotating" (3D stereo processing)

The following example is "Processing"-"Parameters"-"Other parameters"-"Fifth output port or Z-axis parameters"-"Multiple cuts" after setting the interface to return to the processing interface.



The following example is "Processing"-"Parameters"-"Other parameters"-"Fifth output port or Z-axis parameters"-"Z-axis table or autorotation" after setting the interface to return to the processing interface.



We found that the processing interface graphics file "Z-axis table or spin" has more Zaxis values on the XY display than "multiple cuts", and the graphics transition line (Z-axis) changes from a straight line to an arc.

The settings are as follows: "Processing"-"Parameters"-"Other parameters"-"Fifth output port or Z-axis parameters"-"Z-axis table or self-rotation"

	ULSE - 4 + ON/OFF
1 Set 5'OUT Port Bench Rotate(Z-Axis) 2 5'axis types 3*6cp 3 Pulse equivalent .00119 of 5'axis	
4 5'axis Verse ? No 0 Exit Hint:5'OUT-PORT In HF-card Is:	MOVE CHEC PARA EXIT
ISA(9-port)-P2/P3/P4 or PCI(15-port)-P5/P6/P7) COM1-ASC Code OUT-PORT Is: COM1-9 P2/P3/P5 (Pls Set Up COM Send Active)	•OBJECT RESCT CENTER +CUT +ONE CONTIN -CUT -ONE STOP
Z-Axis Pulse=Minimum Scale Rotation Angle	TIME=0: 0000.00.00
NAME: T1 2NC SEGM: 0 11:21:00 MODE: Pa	Ira EFF.STEP/S ESC

Please note: "Pulse equivalent of the fifth axis" is the number of pulses sent in each step of the motor, that is, "Z-axis pulse equivalent" = "minimum scale rotation angle". Regardless of whether the motor type is servo or subdivision, it needs to be set according to the physical rules of the motor. At the same time, it should be noted that the Z-axis physical hardware is a rotating head, and the Z-axis rotation is based on 360 degrees. Therefore, regardless of the physical design of the servo and subdivision, it is necessary to meet the degree of rotation of each grid to be divisible by 360 degrees.

For example:

The motor has 1 degree per division, a total of 360 divisions, and a pulse equivalent of 1, which meets the requirements.

The motor is 1.5 degrees per division, 240 divisions in total, and the single pulse quantity is 1.5, which meets the requirements.

The motor has 1.5 degrees per division, a total of 200 divisions, and a pulse equivalent

of 1.5, which does not meet the requirements.

After the Z-axis design is completed, a serial parameter receiver needs to be made. Please refer to the "Serial Parameter Transmission Protocol" document. "Z-axis table or self-rotation" has transcended the plane (cone) to 3D threedimensional design. The drawing process needs to consider the Z-axis angle rotation design. Please design a single or multiple graphics combination for processing based on the space requirements of the three-dimensional rotating graphics.

"Processing"-"Parameters"-"Processing graphics rotation angle" (normal mode or -



90° mode)

(Normal display mode)



^{(-90°/2}D mode)

The normal and -90° display modes will be able to coordinate the direction of the machine tool XY to effectively determine the direction and position the graphics in real time.

6、Travel Limit Warn(Read)

HF	V9	E		PULSE - 4 + ON/OFF
	1	The solid hour shows data time the partition:	.1	EXAMP1.2NC
	2	Measure limit and beep :	No,No	
	3	OUT allow the signal to _» control the self-box?	No	
	4	Repeat CUT »	No	
	5	Pulse equivalent of xyuv-axes »		
	6	Modul of Touch the side»	1(times)	
	7	Measure the Photo-Card?»	No	
	8	Class or Parameters (use as MULTI-CUT) *		MOVE CHEC PARA EXIT
	9	Of 5'OUT-Port »	MULTI-CUTiother	
	A	G00 Protect Set :	CLOSE	KEHD 5 DRIKON 6 ONDO 1
	В	Travel Limit Warn(Read):	9999,9999	•OBJECT _B RESCT 9 MEASUR _A
	С	Parameter Lock :	No	+CUT +ONE CONTIN
	D	f Automatic Capture :	OFF	-CUT -ONE STOP
	0	EXIT		TIME=0 0000.00.00
		42		
NA	ME: E	XAMP1 2NC SEGM: 0	13:32:31 MODE:	Para EFF.STEP/S ESC

HF V9		EP			PU	ILSE - 4 + ON/OFF
Travel	l Limit Warn(Read):					 []
					_	
1	Max CUT distance of X(c	:m) :		9999		
2	Max CUT distance of Y(c	:m) :		9999		
3	Max piece height H(c	:m) :		9999		
0	EXIT					
						MOVE CHEC PARA EXIT
						READ 5 DRYRUN ₆ UNDO 1
						•OBJECT, RESCT , MEASUR,
						+CUT +ONE CONTIN
						-CUT -ONE STOP
						TIME=0# 0000.00.00
NAME :	SEGM:	13	:30:55	MODE:	Par	a EFF.STEP/S ESC

HF V9	ЕР	DID PULSE -	4 + 0N/0FF
		- 2NC - 6NC - CNC	3NC 4NC 5NC TAC TA1 ISO 3B BBB
SUB>>		1 G-Co 2 3B-C 3 G-Co 4 3B-C 5 (C1a) 6 0the ØR Ø	ode Code Dede(Vary) Code(Vary) M&Par+G-Code) er Function
NAME: EXAMP1 2NC SI	EGM: 13:31:40	MODE: Read EFF.ST	TEP/S ESC

Maximum stroke of X and Y (default 9999cm), maximum height of H (default 9999cm) When reading the NC file, if the X or Y or H value is found to be greater than the maximum set of valid values, an "alarm" prompt appears.

7、"SUB" main interface

	ULSE – 3 + 01	I∕0FF
	X9(Sub Center)	Р
	1 TA* Delay(1-9)8	0
	2 Class & Para.	4
	3 Silk&Pump Cont.	OFF
	4 ControlBox	1
	5 G00 ProtectlAu.	0
	6 Cut'Do. Auto -W	OFF
\times /	7 Cut'Do. L'Round	OFF
	8 Cut'Do. Close.A	OFF
	· 9 Auto'Re Process	OFF
	· A Multigraph Cut	OFF
	· B Gr. Inside NULL	OFF
SUB	123	CR
GR	UPT DOWNJ H	TIX
N0000 G92 X0Y0Z0 {F= 0.0 X=-16.2963 Y= 12.9630}		
NAME: 3 2NC SEGM: 0 10:26:12 MODE: ST	OP EFF.STEP/S	ESC





"CR" can be used to clear the Settings of the distributed control center with one click. The page number flag can indicate the current page or indicate which page has a setting.

- Delay(1-9)S : Set the delay time for the first knife cutting completion of TAC graphics.
- 2、**Class & Para**: Set the high-frequency parameters (the right side shows that the group number type has been selected by default).
- 3. There are 15 different types of parameters in categories 1-7.



At the same time, "high frequency combination and parameters" includes locking protection to prevent misoperation and modify class types.

Para-1 :

HF WEI	M							
		Edit	Para. (1-1	'ype) (Fi	lename:1.H	^F)		
	Class	P.Width	P.inter.	ShortCir	Speed	Pulse	Volt	
	M10	0	0	0	0	0	0	
	M11	0	0	0	0	0	0	
	M12	0	0	0	0	0	0	
	M13	0	0	0	0	0	0	
	M14	0	0	0	0	0	0	
	M15	0	0	0	0	0	0	
	M16	0	0	0	0	0	0	
	M17	0	0	0	0	0	0	
			[EXIT	ß			
				11:38:07				

Para-2	•	
	•	

HF WEI	M							
		Edit	Para. (2-1	(ype) (F	ilename:2.H	^F)		
	Class	P.Width	P.inter.	Fre.Power	Transducer	Pulse	Volt	
	M10	0	0	0	0	0	0	
	M11	0	0	0	0	0	0	
	M12	0	0	0	0	0	0	
	M13	0	0	0	0	0	0	
	M14	0	0	0	0	0	0	
	M15	0	0	0	0	0	0	
	M16	0	0	0	0	0	0	
	M17	0	0	0	0	0	0	
			Γ	EXIT				
			L					
				11:38:46				

Para-3:

HF WE	DM													
			Ed i	it Par	sa. G	3-Туре	e) ((File	name::	3.H^F)			
			Grou	Grou	Shor	Grou	volt	equa	pect	font	back	fila	volt	puls
Calss	: P.₩	P.I				puls	puls	puls	puls	step	step	spee		
140			Wiat	inte	curr	STAT	STAT	STAT	STAT	coae	coae	code	code	
M10	<u></u>	И	И	И	3.7	OFF	OFF	OFF	OFF	ИН	ИН	ИН	ИН	И
M11	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØH	ØH	ØH	ØH	0
M12	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØH	ØH	ØH	ØH	0
M13	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØH	ØH	ØH	ØH	0
M14	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØН	ØН	ØН	өн	0
M15	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØH	ØH	ØH	ØH	0
M16	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØH	ØH	ØH	ØH	0
M17	0	0	0	0	3.7	OFF	OFF	OFF	OFF	ØН	ØН	ØH	ØH	0
			Ed i	it M14	1-M17		E×	i t	Da	ataBas	seFile	. 2		
						11	L:39:2	26						

Para-4 :

HF WEI	M													
			Ed i	t Para	a. (4-	-Туре) a	Filena	ame:4	.H^F)				
Class	s P.₩	P.I	I	v	HVol stat	Grou puls	Grou stat	step puls	step stat	loop time	loop: stat	singl stat	fila spee	puls
M10	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M11	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M12	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M13	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M14	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M15	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M16	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M17	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
				Edit	t M14-	- M 17		Е	< I T]2			
						11	:40:06	5						

Para-5:

M10		Class P.W P.I Power LVol Grou Grou loop loopsingl fila Puls											
M10				stat	puls	stat	time	stat	stat	spee			
	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M11	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M12	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M13	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M14	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M15	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M16	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
M17	0	0	0	OFF	0	OFF	0	OFF	OFF	0	0		
			Edit	M10-M	13		E	K I T		6			

Para-6 :

HF WEDM							
	Edit 1	Para. ((6-Type)	(File	name:6)		
[Class	P.W	P.I	Power	Fila	Puls	
				count	spee		
	M10	0	0	0	0	0	
	M11	0	0	0	0	0	
	M12	0	0	0	0	0	
	M13	0	0	0	0	0	
	M14	0	0	0	0	0	
	M15	0	0	0	0	0	
	M16	0	0	0	0	0	
	M17	0	0	0	0	0	
		[EXI	T			
			11:4	1:23			

HF WEDM	1						
		Edit Para	. (7-Туре)	(Filena	ume:7)		
Class	P.Width	P.inter.	ShortCir	Speed	Pulse	Volt	Cut.Speed
M10	0	0	0	0	0	0	0
M11	0	0	0	0	0	0	0
M12	0	0	0	0	0	0	0
M13	0	0	0	0	0	0	0
M14	0	0	0	0	0	0	0
M15	0	0	0	0	0	0	0
M16	0	0	0	0	0	0	0
M17	0	0	0	0	0	0	0
If Pul	se=0,Cut.	Speed Acti	UE X	I T 🖓			
			11:	42:05			

(1) COM-Port Send(ASC) Set : (There are three options)



[1] (COM Port Close) Not send ASC code.

Para-7:

[2] COM Send ASC (Z' Send Paramet).

[3] COM Send ASC (Z' Send Pulse) . ←Suitable for z-axis table or self rotation

IF WEI	M													
Curre	ent Cl	lassi	M10 <mark>0</mark>	ut Pai	ra . (4-	-type) a	Filena	ame:)					
C 1	рц	D T			HVo 1	Grou	Grou	step	step	loop	loop	sing	fila	Puls
Class	: r.w	r.1		ľ	stat	puls	stat	puls	stat	time	stat	stat	spee	
M10	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M11	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M12	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M13	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M14	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M15	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M16	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
M17	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
					Dut Pa	aramet	t.(Not	t chai	nge)					
		Cl	ass:	013	234	5 6 3	7 (No	o=Ente	er):					
COM	Port	Clos	e,No (Active	∍)									
						11	:46:58	3						

If the serial port function is enabled, the unmodified and modifiable group number

parameters will display the serial port open status.
ŀ	HF WEDM														
Amend&Out(4-Type) (Filename:) Class:M10															
		P.W	P.I	A	V	HVol stat	Grou puls	Grou stat	step puls	step stat	loop time	loops stat	ingl stat	fila spee	puls
	01d	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
	New	0	0	0	0	OFF	0	OFF	0	OFF	0	OFF	OFF	0	0
	New 8 8 8 0 OFF 8 OFF 8 OFF 8 OFF 8 0FF 8 8 Save New Out New EXIT 5														
							11:4	47:37							

Parameter (not modified) interface for sending a group number

	PULSE - 4 + ON/OFF
HF V9 I I F 1 Set 5'OUT Port Bench Rotate(Z-Axis) 2 5'axis types 3*6cp 3 Pulse equivalent .00119 4 5'axis .00119 4 5'axis Verse ? No 8 Exit Hint:5'OUT-PORT In HF-card Is: ISA(9-port)-P2/P3/P4 or PCI(15-port)-P5/P6/P7)	PULSE - 4 + ON/OFF T1.2NC MOVE CHEC PARA EXIT READ NULL UNDO OBJECT BESCT CENTER
COM1-ASC Code OUT-PORT Is: COM1-9 P2/P3/P5 (Pls Set Up COM Send Active) Z-Axis Pulse=Minimum Scale Rotation Angle	+CUT $_{B}$ +ONE $_{C}$ CONTIN $_{B}$ -CUT $_{E}$ -ONE $_{F}$ STOP $_{C}$ TIME=0# 0000.00.00
NAME: T1 2NC SEGM: Ø 11:21:00 MODE: Pa	ura EFF.STEP/S ESC

The above figure shows "machining" - "parameters" - "other parameters" - "fifth

output port or z-axis parameters" - "z-axis table or self rotation"

[3] ASC code parameters sent by serial port (pulse sent by Z-axis) + "z-axis table or self rotation": then z-axis sends pulse, and high-frequency parameters are sent through serial port. If the z-axis needs to rotate in degrees, it needs to cooperate with the machining drawing. Please refer to "V" - "machining" - "parameters" - "z-axis table or self rotation".

For serial communication protocol, please refer to the document "serial parameter sending protocol".

For z-axis rotation design, please refer to the document "pulse calculation corresponding to z-axis degrees".

4、**Si and Pu**: On means to turn on the switch of water pump and silk drum, and the control button is displayed on the processing interface. Clicking cutting will also automatically turn on the switch of water pump and silk drum, and off means off.

HF X9	Si	Pu	PUI	LSE – 10 +	ON/OFF
				X0000(000
				Y0000(000
			ĺ	MOVE1 CHEC2 PARA READ5 NULL 6 OBJECT8 RESCT 9	UNDO 1 CENTER EDGE 4
SUB>>			OF. SUB GR	+CUT _B +ONE _C -CUT _E -ONE _F TIME=01 0000.0	Contin <mark>,</mark> Stop ₆ 30.00+
N0000 G92 X	0Y0Z0 (F= 0.10 X=	-5.0 ¥=-12.0}			
NAME: T10	2NC SEGM: 0	15:32:40	MODE: STO	P EFF.STEP/S	ESC

5. **ControlBox** : Press the p key to enter (or press the p key twice in a row in the processing interface to directly and quickly enter the default option), (the electronic handwheel mode has been selected by default is displayed on the right), or press the key to change the default.



Whether you click or use the shortcut key, it will reflect the direct effect of the electronic handwheel.





"Normal mode": normal mode.

"Fault tolerant mode": solve the mode of external magnetic field and electronic

interference.

"Fault tolerant mode" will completely solve the interference data formed by electromagnetic and external hardware pulse interference, and ensure that the axis data is completely normal.

"**Return Vertical**" : After the electronic hand wheel is moved, the molybdenum wire can be returned to the position before use by " Return Vertical ".

X9 Sub Control Center:

The X9 sub control center has many powerful automation control capabilities, which can not only greatly improve production efficiency, but also the combination control of different functions allows processing to easily reach industrial automation.

6、 **G00Protect|Au.** : The input options are 0, 1 and 2.

When option 0 is G00 = 0, pause during execution (the pause character is required to be valid);

Option 1 is G00 protection during execution and cutting is not allowed;



G00 protection will greatly solve the occurrence of false cutting and remind the user that false operation has occurred.



Option 2 is G00, which automatically starts cutting after automatic idling.

G00 = 2 makes the workpiece cutting process more in line with man-machine fit. For more powerful graphic inner segment idling, please use (x9) graphic inner segment idling.

7、 **(X9) Cut' Do. Auto** _**W** : When on is valid, the cutting is completed and automatically goes back to the starting point along the processing route.



Adapt to single graph and composite graph, and M00 automatically returns to the starting point without pause. It is suitable for large workpieces to work unattended for a long time and automatically return to the original point, which greatly saves time and facilitates restart.

8、 **(X9) Cut' Do. L' Round**: When on is valid, the cutting is completed and automatically returns to the starting point in a straight line (the nearest route).



Adapt to single graph and composite graph, automatic M00 does not pause, and the automatic straight line returns to the starting point. It is suitable for large workpieces to work unattended for a long time and automatically return to the original point, which greatly saves time and facilitates restart.

9、 **(X9) Cut' Do. Close.A** : Automatically turn off the high frequency, machine tool and computer after graphic cutting.



ESC can pause shutdown in real time

10, (X9) Auto' Re Process : After the figure cutting is completed, it will

automatically return to the starting cutting point and repeat the cutting.



(1) Auto' Re Process : ON/OFF

(2) **Repeat Number** : Enter 999 as the maximum number of times to repeat cutting for the figure.

(3) **Already Number** : In the middle of processing, you can pause and go back there to check the number of times that have been completed.

(4) **Ready Re' Signal** : ON/OFF On refers to automatic repeated cutting, which requires HF software to receive the signal before it can continue to repeat; Off is off, and no signal response is required to automatically repeat cutting.

(5) **Wait Re' Times** : Input 1-9 (the number corresponds to the minute unit), and the maximum setting is 99 minutes. When the repeated preparation signal is valid (on), wait for the set number of seconds when the cutting is completed. If the time exceeds, the repeated cutting function (protection work) will be automatically cancelled.

(6) **STOP' CODE** : M00 sets on / off status.

"Automatic repeat cutting" can realize two processing modes by using the setting switch of repeat signal:

(1) Automatic repeated automatic cutting, without the participation of external hardware equipment, can be used for continuous cutting of a large number of repeated graphics.

(2) Combined with manipulator connected automatic loading and unloading and automatic repeated cutting.



The manipulator can receive and respond signals according to "serial port parameter sending protocol" and customize PLC programming at the same time. Note: the automatic repeated cutting function can be combined with the G00 switch to do the corresponding work. If there is a pause function in the G00 state setting, it needs to be continued manually after the pause in the automatic repeated cutting, so please set it strictly according to the demand.

Online manipulators: FANUC, KUKA, Epson, Yaskawa, scunk, Sommer and rorze.



11. (X9) Multig. Con. Cut

(1) Multig. Con. Cut : ON/OFF

(2) **Gr**1 - **Gr5** : Graphic G code file.

(3) **Par1 - Par5** : The parameter file corresponding to the processing of graphic G code.

Multi image automatic continuous cutting can also cooperate with the z-axis rotation function of HF software to complete three-dimensional complex graphics at one time. It can also be applied to the combined machining of ordinary graphics.

Note: the figure at the beginning of cutting shall be the first drawing of the set G code file, and the corresponding work can also be done in combination with G00 switch.

× X9						PULSE - 10 + ON/OF
Gr.Ins	ide NUL	L V2 (1	f Exist	Gr. Is	Active)	(X9 Sub Control Center)
Gr.Fil	e:T19.2	NC	C	Config F	ile:T19.ACF	
_						1 Gr. Inside NULL
Alrea	dy Set	The Seg	.Nu. AI	L: 248	PAGE: 5 ∕ 1	2 Display G Code
5	7	9	11	13	A PageUp 1	3 Load Config
15	17	18	19	25	B PageDown 4	
27	29	31	33	35		
37	39	41	43	45	C Point Page	5 Save Config
47	49	51	53	55		6 G00=0
57	59	61	63	65		7 Clear All Nu
67	69	71	73	75	D Del Last Nu	D. No. David Chara
77	79	81	83	85	E Invert	8 Mu. Down Clear
87	89	91	93	95	F. Search	9 Exit To Pro.
97	99	101	103	105		~~
107	109	121	123	125	G Change	
Input	Num					
NULL-	>					Seg.Nu.:Small To Large
N0000	G92 XØY	0Z0 (F=	0.0 X=	0.0 Y=	0.0}	
ME: T1	9	2NC SE	GM: Ø	15	:02:05 MODE: S	STOP EFF.STEP/S

12. (X9) Gr. Inside NULL :



The function of "empty walk in graphic section" has been upgraded from the first generation to the second generation control, from the setting that the first generation supports 55 empty walks at most to 1045 empty walks at most, with more diverse functions, more flexible configuration and stronger control ability.

HF X9				P	ULSE - 10 + ON/OFF		
Gr.Inside I	NULL V2 (If E	Exist Gr. Is	Active)		(X9 Sub Control Center)P		
Gr.File:T19	9.2NC	Config Fi	ile:T19.ACF				
N0015 G03 X	0.6020 Y	-4.6713 I	-0.1256 J	-4	1 Gr.Inside NULL ON		
NØØ16 GØ3 X	2.3075 Y	-3.9648 I	-0.1256 J	-0	2 Display G Code		
NØØ17 GØ3 X	3.3366 Y	-2.9357 I	2.9515 J	-3	3 Load Config		
N0018 G03 X	4.0431 Y	-1.2302 I	-0.1256 J	-0			
N0019 G03 X	4.9765 Y	-0.5025 I	4.2261 J	-0	5 Saug Config		
N0020 G03 X	4.0431 Y	0.2251 I	4.2261 J	-0			
N0021 G03 X	3.7806 Y	1.1250 I	-0.1256 J	-0	6 G00=0		
N0022 M12					7 Clear All Nu		
N0023 G01 X	3.7877 Y	1.1598			8 Nu. Down Clear		
N0024 G03 X	3.3652 Y	1.9247 I	-0.1256 J	-0	9 Exit To Pro.		
N0025 G03 X	2.3016 Y	2.9883 I	2.9515 J	2			
NØØ26 GØ3 X	0.6264 Y	3.6822 I	-0.1256 J	-0			
N0027 G03 X	-0.8777 Y	3.6822 I	-0.1256 J	3			
N0028 G03 X	-2.5529 Y	2.9883 I	-0.1256 J	-0			
N0029 G03 X	-3.6164 Y	1.9247 I	-3.2028 J	2	Seg.Nu.:Small To Large		
[Continue] Enter:							
NAME: T19	2NC SEGM:	0 15	:03:44 MODE	: st	OP EFF.STEP/S ESC		

"Empty running section in graphics" can make any section of G code (single or composite) of any graphics complete automatic empty running, so as to meet the needs of fast and various bypasses; Even according to this function, the combined function of pause valid and G00 = 2 can be completed at one time from the beginning to the end without manual intervention.

(1) **Gr.Insidel NULL** : ON/OFF ON ,open state OFF ,close state

(2) **Display G Code** : Display the G code that has been transferred from the current processing interface, and display the currently set empty segment number in color separation, so as to query the number of segments to be set.

HF X9			PULSE - 10 + ON/OFF					
Gr.Inside NULL V2	(If Exist Gr.	Is Active)	(X9 Sub Control Center)P					
Gr.File:T19.2NC	Conf i	g File:T19.ACF						
N0015 G03 X 0.602	20 Y -4.6713	I -0.1256 J -4	1 Gr.Inside NULL ON					
N0016 G03 X 2.307	75 Y -3.9648	I -0.1256 J -0	2 Display G Code					
N0017 G03 X 3.336	6 Y -2.9357	I 2.9515 J -3	3 Load Config					
N0018 G03 X 4.043	31 Y -1.2302	I -0.1256 J -0						
N0019 G03 X 4.976	55 Y -0.5025	I 4.2261 J -0	5 Saue Config					
N0020 G03 X 4.043	31 Y 0.2251	I 4.2261 J -0						
N0021 G03 X 3.780	06 Y 1.1250	I -0.1256 J -0	6 600=0					
N0022 M12			7 Clear All Nu					
N0023 G01 X 3.787	77 Y 1.1598		8 Nu. Down Clear					
N0024 G03 X 3.365	52 Y 1.9247	I -0.1256 J -0	9 Exit To Pro.					
N0025 G03 X 2.301	LG Y 2.9883	I 2.9515 J 2						
N0026 G03 X 0.626	54 Y 3.6822	I -0.1256 J -0						
N0027 G03 X -0.877	77 ¥ 3.6822	I -0.1256 J 3						
N0028 G03 X -2.552	2.9883 Y	I -0.1256 J -0						
N0029 G03 X -3.616	54 Y 1.9247	I -3.2028 J 2	Seg.Nu.:Small To Large					
C.	[Continue] Enter:							
NAME: T19 2NC	SEGM: Ø	15:03:44 MODE: ST	OP EFF.STEP/S ESC					

HF X9		变频: - 3 + ON/OFF					
Gr.Inside NULL V2 (If	Exist Gr. Is Active)	(X9 Sub Control Center)P					
Gr.File:T12.2NC	Config File:T12.ACF						
?11		1 Gr.Inside NULL OFF					
N0013 G01 X 4.9900 Y	9.9900	2 Display G Code					
N0014 G01 X -4.9900 Y	9.9900	3 Load Config					
N0015 G01 X -4.9900 Y	4.9900						
N0016 M12		5 Saue Config					
N0017 G01 X -4.9500 Y	4.9500						
N0018 G01 X -9.9500 Y	4.9500	6 600=0					
N0019 G01 X -9.9500 Y	-4.9500	7 Clear All Nu					
7 G01 X -4.9900 Y	-9.9900	8 Nu. Down Clear					
N0020 G01 X -4.9500 Y	-4.9500	9 Exit To Pro.					
N0021 G01 X -4.9500 Y	-9.9500						
N0022 G01 X 4.9500 Y	-9.9500						
N0023 G01 X 4.9500 Y	-4.9500						
N0024 G01 X 9.9500 Y	-4.9500						
N0025 G01 X 9.9500 Y	4.9500	Seg.Nu.:Small To Large					
[Cont	[Continue] Enter:						
图名: T12 2NC 段号	:0 11:24:17 状态:	暂停 <u>效率(步/S)</u> ESC					

Appears when the G code is displayed? Number indicates that the G code file is missing N serial number, you can use "re-order N" in "Other functions" - "Edit text file". Complete the "re-order N" and retrieve the G code in the processing interface again.

(3) **Load Config** : Retrieve the saved configuration file of the drawing to facilitate immediate work after returning to processing.

(4) **InputNum** : Please enter the segment number strictly from small to large, and press enter to finish the input.

(5) **Del Last Nu**: Delete the last entered segment number.

(6) **Clear All Nu** : Clear all the entered segment numbers.

(7) **G00=** : The cutting options are 0, 1 and 2.

Option 0 is G00, pause during execution;

Option 1 is G00 protection during execution and cutting is not allowed;

Option 2 is G00, which automatically starts cutting after automatic idling.

(8) **Save Config**: The entered segment number has been saved.

(9) **Exit To Pro.** : Exit to the processing interface.

Note: the setting of segment number is a mandatory command of the user, so please carefully check the segment number when entering, and enter it in the order from small to large as required.

13、 "Last 0.5mm Stop"



"Pause at 0.5mm at the end of the figure" is divided into three gears: x1, X5 and X10, and each gear is a multiple of "0.5mm".

This function is applicable to freely setting the automatic pause at the end of each drawing in single drawing and composite drawing (excluding the drawing outgoing line distance).

When the switch is turned on and the physical distance is triggered during cutting, the cutting will be suspended automatically without prompt.

give an example:

For three figures, when the first figure "pause at 0.5mm at the end of the figure" takes effect and is suspended, you can turn to the "sub control center" to set the "pause at 0.5mm at the end of the figure" gear, which is the setting of the pause switch at the end of the next figure.

If the first figure "pause at 0.5mm at the end of the figure" has not been suspended (i.e. the physical distance has not occurred), the adjusted gear is the first figure.

Comprehensive:

"Pause at 0.5mm at the end of the figure" is effective for the physical distance that does not occur.

"Pause at 0.5mm at the end of the figure" a figure has taken effect, then the next figure is adjusted.

"Pause at 0.5mm at the end of the figure" if there is no change, the same magnification distance shall be used for all figures.

The automatic failure of "pause at 0.5mm at the end of the figure" means that all contents have been completed, or the figure has been adjusted again or the function has been turned off.

"Pause at 0.5mm at the end of the figure" function is applicable to waste fixation and blanking under fast and flexible settings. It can set the pause at the end of the distance freely and flexibly. At the same time, it can meet the requirements of graphics without lead-in leads and non closed graphics. It should be noted that each format G code file has its own process requirements. This function should not be logically confused with TAC or TA1 or &2nc.

14. Work Times (h) :



The use time of silk is counted in "hours". After changing the silk, click the button to start counting again from 0.

You need to enter permissions to reset statistics. The default password is : 111

15、 Cut End->0' SEG :

HF V9	JL DD PULSE - 8 + ON/OFF
	(Sub Control Center) P
	1 Last 0.5mm Stop OFF
	2 Work Times (h) 0
	3 Auto Pulse/Setp OFF
	4 Cut End-> 0'SEG
	· 5 Cut D.Y&PLC B/A OFF
	· 6 MachineHand R/I
	· 7 Auto P/T Wire OFF
	OF.
SUB>>	GR 52
N0000 G92 X0Y0Z0 {F= 0.110 X=-48.0	Y= 100.0}
NAME: 96GR 2NC SEGM: 0 16	:47:11 MODE: STOP EFF.STEP/S ESC

SUB , Pls Set "Cut End->0' SEG" =ON



A small green square will appear in front of the "Processing" button on the processing

interface, making it easy for users to understand whether the status is valid.

When a workpiece processing is completed and there is a "processing pause or completion", it will automatically reposition to the first segment of the graph, and the user can directly start cutting.



16. Auto Pulse/Step :

HF V9	L DD PULSE - 4 + ON/OFF
SUB>>	(Sub Control Center) P 1 Last 0.5mm Stop OFF 2 Work Times (h) 0 3 Auto Pulse/Setp OFF Change Pulse+-:5 0 0E-Close 0 0F. SUB GR 0
NAME: 7055 2NC SEGM: 0 09:30:	44 MODE: STOP EFF.STEP/S ESC

Enter a stable machining efficiency value (0=disable this function)

HF	19		J L	— P	ULSE –	3 +	0N/0FF
					(Sub Co	ntrol Cent	er) P
					1 Last	0.5mm Sto	p OFF
					2 Work	Times (h) 1
					3 Auto	Pulse/Set	p 45
					· 4 Cut	D.Y&PLC B/	A OFF
					· 5 Mach	ineHand R∕	Ι
				®	· 6 Auto	P/T Wire	OFF
				OF.			OFVIE
				SUB	57	DOMUT	OFYLL
SI				GN	02		
N	1000 G92 X0Y020 {F= 0.	0 X= 5.550	Y= 0.0}				
NAM	E: 13 ZNC SEGM:	0 12	2:05:44	MODE: ST	OP EFF.	STEP/S	ESC

The entered value will be presented to the right of the button



At the same time, in the processing interface, the background color of the variable frequency value will be changed, making it easier for users to distinguish from the normal mode.

Introduction:

(Automatic frequency conversion value/efficiency) can automatically adjust the frequency conversion value according to different thicknesses of the workpiece until stable processing efficiency, suitable for different slope and sharp height workpieces. It allows users to face similar workpiece processing without the need for manual intervention and continuous adjustment of frequency conversion values. This function is applicable to the 1-255 frequency conversion value range function.

This feature has three underlying control capabilities:

(1) Continuous short circuit: Continuously increase the frequency conversion value

(slow down) until the short circuit signal disappears.

(2) Intermittent short circuit: After the frequency conversion value slows down once

(+10), detect the short circuit and continue to detect it until the short circuit signal disappears.

(3) Workpiece from high to low: The frequency conversion value will adaptively accelerate based on the change in efficiency value, and self determine whether to maintain it.

The above controls are all within the short-circuit test waiting time. If the shortcircuit test waiting time is exceeded, it will be rolled back according to the default method.



17. Wire To Vertical :



The function obtains mechanical coordinates through communication with the lower machine, and automatically starts to vertical molybdenum wire after clicking the button. Can be operated and proofread multiple times and in real time.

18、 Cut M1* Delay :



When the value is 0, the function is disabled (without delay). The valid values are 1-9.

Delay before group number sending (electrical parameter sending) in processing,

no delay when empty.

Globally valid: When the switch is valid (1-9), the function is valid in real time even after the software is restarted.

19、 NC Auto M.R.P :

HF X9		ULSE - 3 + ON/OFF
	\frown	X9(Sub Center) P
		1 Last 0.5mm Stop OFF
()		2 Work Times (h) 0
		3 Auto Pulse/Setp OFF
		4 Cut End-> 0'SEG OFF
		5 A-axis Rotation
(6 Wire-> Vertical
· · · · · · · · · · · · · · · · · · ·	\times /	7 Cut M1* Delay 0
		8 Nc Auto M.R.P
		· 8 Cut D.Y&PLC B/A OFF
		· 9 MachineHand R/I
	OF	· A Auto P/T Wire OFF
	SUB	2
SUR>>	GR	UPT DOWNI EXIT
N0004 M00		
→ N0005 G00 X 14.4444 Y	1.4815	
NAME: 5 2NC SEGM:	5 15:51:35 MODE: ST	OP EFF.STEP/S ESC

When the function is ON: after reading the 2NC file, the mechanical XY value of the lower machine is automatically obtained, and the automatic pitch is applied.

Wait 10 seconds for the next machine to time out. If time out occurs, manually enter the XY value.

20、 Cut D.Y&PLC B/A :

HF X9		- 3 + ON/OFF
	(X9 S	ub Control Center)P
	1 La	st 0.5mm Stop OFF
	2 Wa	rk Times (h) 0
	· 3 Cu	t D.Y&PLC B/A OFF
	· 4 Ma	chineHand R/I
	· 5 Au	to P/T Wire OFF
	OF.	
	SUB UP1	DOWN1 ØEXIT
* SUB>>	GR	
N0007 G01 X 0.0000 Y 0.0000 → N0008 M02	{ LEAD OUT }	
NAME: T7 2NC SEGM: 8 14	:30:57 MODE: STOP EF	F.STEP/S ESC



Cut Duration[N]: continuous working time after clicking cutting (seconds)

Time P.Delay[D]: Wait time after HF software pause (seconds)

Operating characteristics: continuous high frequency

When the switch is set to ON, clicking the cut will automatically pause 3 seconds after the start (for example) and send a low level signal to the parallel port (LPT) 10 Angle. PLC receives the low level signal immediately according to its custom programming content back N steps, and then forward N steps. The following action (cut-pait-cut) will be repeated throughout the cut.

Note that the overall time after the corresponding PLC signal and the motor movement is set less than D, and the best time can be obtained through debugging.



21. MachineHand R/I:



The robotic arm is suitable for independent loading or unloading needs at a certain time.

This communication is unidirectional and does not require a mechanical signal to be sent back.



At the same time, it should be noted that this function is different from the robot arm's loading and unloading communication after the workpiece is completed in X9's "Automatic Repeat Cutting". There is bidirectional communication between the robot arm and the HF system in "Automatic Repeat Cutting". Therefore, PLC programming can be used to allow the robotic arm to recognize two different signal requests.

22. Auto P|T Wire :





When the switch is ON: When the processing reaches M00, a wire removal request

signal will be sent to the machine. After receiving the wire removal signal from the

machine, G00 will automatically idle and complete. After completing G00 automatic idling, send a wire threading request signal to the machine, and automatically start normal cutting after receiving the wire threading signal from the machine. Introduction: In this functional interface, mechanical wire removal or threading can also be manually requested.

Introduction: In this functional interface, mechanical wire removal or threading can also be manually requested.



23. Anti-Oxidation:

Anti-oxidation working mode can solve the process requirements of anti-oxidation (electrolysis) of the workpiece

When the function is ON: when no load is triggered during cutting, the parallel port alarm signal automatically starts to empty, and the edge signal is detected during empty walking. If there is a edge signal, the automatic cutting begins. And the starting point of the next figure M00 continues cutting without pausing.

The overall logic of the "anti-oxidation working mode" is that after the parallel port alarm signal is triggered when cutting no-load, the edge signal is automatically detected in the forward air walking, and the cutting automatically starts to continue once it occurs.

"Anti-oxidation working mode" still supports the diversity of G00 functions, and stops when G00=0 is cut to the pause; When G00=1, G00 cutting protection needs to be manually empty; G00=2 when cutting to G00 automatically empty.



24, SUB (example)

5 (G00 Protect |Au.=2) , 7 (Cut' Do. Auto -W=ON)

The above configuration will automatically return to the starting point of graphic cutting in a straight line from the end point after the workpiece cutting is completed. Save a lot of time for reset operation after cutting. Interference judgment: sub sub sub control center will automatically judge and select interference. If multiple choices or invalid combinations are selected, it will prompt and automatically reset the selection.

7、 "SUB X9" Interface and information interconnection

(1) The combination setting of "sub control center" G00 and pause character is globally effective and can be set when it is visible.

(2) "Sub control center" will greatly improve enterprise automation and professional processing, and meet the requirements of professional and S-level work.
(3) The "sub control center" part contains the interface definitions and interactive information of various equipment, man-machine exchange, manipulator, z-axis, etc. for the interface and information transmission definitions, please set and prepare the equipment in strict accordance with the requirements to prevent mistransmission and misconnection. Please consult the equipment enterprise for details.

8、 "Gr"



In the new version of HF, the linear particle engine display mode is adopted, and the graphics display speed is greatly improved when the graphics are displayed on the "Process" interface and the reduced and enlarged graphics in the "drawing".

9、 "Program" and "Next"

		(REA	D)
		1	Ca 1 1	Trac	es
		2	Call	Auxs	
		3	Call	DXF	
		4	Call	CAD	
		5	Call	GB C	ha .
	(6	Call	AUTO	Р
		0	EXIT		
				ł	
Ren (Evit					

"Transfer DXF file": 3. Transfer of absolute coordinates. No matter how large the drawing datum point based on CAD is, it can also be automatically transferred in and displayed. After the retrieval is completed, the graphics will be automatically displayed in full screen. DXF file import compatible with all formats.


"Sort" - "cancel duplicate lines": filter duplicate lines made based on CAD that cannot be recognized by the naked eye."

"Next": G code, 3b type, 3b group number type, general taper, variable taper machining order generation.



(a)		
(B) .2NC	-	-
(C)&.2NC		
(D) . TAC		
(E) .TA1		
(F) .0CC		

"- -" At state : After saving the G code, manual access to the machining

interface is required to retrieve the G code.

"-AUTO-" At state : Automatically retrieve and wait for processing after saving G

code.

The post main interface can not only use the menu to save G-code independently, but also directly select the format type of G-code to be saved through the shortcut save module.

	0k	Times(1-7)?	5			
.30	Overlap (mm)	Tab width(mm)	1.2			
.08	1'0ffseg(>=0)	1 H-freg(1-7)	1			
.06	2'0ffseg(>=0)	2 H-freg(1-7)	2			
.04	3'0ffseg(>=0)	3 H-freg(1-7)	3			
.02	4'0ffseg(>=Ø)	4 H-freg(1-7)	4			
0	5'0ffseg(>=0)	5 H-freg(1-7)	5			
	Starting CUT Tab,H	-freg(1-7)(No=0)	0			
	Starting CUT Tab, STOP ?		No			
	Offseg of 5'CUT	Offseg of 5'CUT Tab (general=0)				
	H-fre. of 5'CUT	Tab (1-7)(No=0)	0			
	(Save Con	fig OCC)	3			
1. If Ω_{men} then to end on Ω_{men} H-freq: 1-2001 2-2010 7-2111						
2: If Tabewidth(Aothene1-times CHT Tab						
3: offset: 1's > 2's	:>3's=0					

		0k	Times(1-7)?	3	
	.30	Overlap (mm)	Tab width(mm)	1.2	
	.04	1'Offseg(>=0)	1 H-freg(1-7)	1	
	.02	2'0ffseg(>=Ø)	2 H-freg(1-7)	2	
	0	3'0ffseg(>=0)	3 H-freg(1-7)	3	
		Starting CUT Tab,H	-freg(1-7)(No=0)	0	
		Starting CUT	Tab, STOP ?	No	
		Offseg of 3'CUT	0		
		H-fre. of 3'CUT	0		
		(Save Con	2		
1: If $0verlap<0$ then to endp on out-line. H-freg: 1->001, 2->0107->111.					
2: If Tab 2: offect	bewidth<0oth	ene1-times CUT Tab			
J. UIISet	3. Offset. 1 S / 2 S / 3 S=0				

"Cutting times": when switching between different cutting times, the high-frequency

aro	up	number	will b	be	automatically	1-7	sorted.
<u> </u>							

Г						
		0k	Times(1-7)?	7		
	.30	Overlap (mm)	Tab width(mm)	1.2		
	.12	1'Offseg(>=0)	1 H-freg(1-7)			
	.10	2'0ffseg(>=0)	2 H-freg(1-7)	2		
	.08	3'0ffseg(>=0)	3 H-freg(1-7)	3		
	.06	4'0ffseg(>=0)	4 H-freg(1-7)	4		
	.04	5'0ffseg(>=0)	5 H-freg(1-7)	5		
	.02	6'Offseg(>=0)	6 H-freg(1-7)	6		
	0	7'0ffseg(>=0)	7 H-freg(1-7)	7		
		Starting CUT Tab,H-freg(1-7)(No=0)		0		
		Starting CUT	Tab, STOP ?	No		
		Offseg of 7'CUT	Tab (general=0)	0		
		H-fre. of 7'CUT Tab (1-7)(No=0)		0		
		(Save Config OCC)				
1: If Overlap<0 then to endp on out-line. H-freg: 1->001, 2->0107->111.						
2: If Tabewidth<0othene1-times CUT Tab						
3: offset:	: 1's > 2's	> 3's=0				

When inputting content, the positioning color is displayed to confirm the position

accurately and intuitively.

		0k	Times(1-7)?	7		
	.30	Overlap (mm)	Tab width(mm)	1.2		
	.12	1'0ffseg(>=0)	1 H-freg(1-7)	1		
	.10	2'0ffseg(>=0)	2 H-freg(1-7)	2		
	.08	3'0ffseg(>=0)	3 H-freg(1-7)	3		
	.06	4'0ffseg(>=0)	4 H-freg(1-7)	4		
	.04	5'0ffseg(>=0)	5 H-freg(1-7)	5		
	.02	6'0ffseg(>=0)	6 H-freg(1-7)	6		
	0	7'0ffseg(>=0)	7 H-freg(1-7)	7		
		Starting CUT Tab,H	-freg(1-7)(No=0)	0		
		Starting CUT	Tab, STOP ?	No		
		Offseg of 7'CUT	Tab (general=0)	0		
		H-fre. of 7'CUT Tab (1-7)(No=0)		0		
		(Save Config OCC) AB007				
1: If Overlap<0 then to endp on out-line. H-freg: 1->001, 2->0107->111.						
2: If Tabewidth<0othene1-times CUT Tab						
3: offset	3: offset: 1's > 2's > 3's=0					

"Save current cutting parameter OCC": save the cutting parameter content as an

OCC file with a user-defined file name.



When the number of cuts is 1, it will be automatically saved as 0 OCC file.



"**Cutting times configuration file**": retrieve the saved "cutting times" configuration content in real time and generate it in real time. For example, if you enter 1 in "cutting times profile", 1 will be called OCC configuration file.The configuration contents of different cutting times can be saved as OCC files with different names for real-time calling, modification and saving in the later stage.

		0k	Times(1-7)?	7	
	.30	Overlap (mm)	Tab width(mm)	1.2	
	.12	1'0ffseg(>=0)	1 H-freg(1-7)	1	
	. 10	2'Offseg(>=0)	2 H-freg(1-7)	2	
	.08	3'0ffseg(>=0)	3 H-freg(1-7)	3	
	.06	4'0ffseg(>=0)	4 H-freg(1-7)	4	
	.04	5'0ffseg(>=0)	5 H-freg(1-7)	5	
	.02	6'Offseg(>=0)	6 H-freg(1-7)	6	
	0	7'0ffseg(>=0)	7 H-freg(1-7)	7	
		Starting CUT Tab,H	-freg(1-7)(No=0)	0	
		Starting CUT	Tab, STOP ?	No	
		Offseg of 7'CUT	Tab (general=0)	0	
		H-fre. of 7'CUT	0		
		(Save Config OCC)			
1: If $0 \neq 1$ then to endp on out-line. H-freg: 1->001, 2->0107->111.					
2: If Tabewidth<0othene1-times CUT Tab					
3: offset	::1's > 2's	> 3's=0			

Call 1 After the OCC file, the cutting times and configuration content will be displayed. The cutting parameter OCC file can be quickly used in the "post" cutting times setting and a variety of "wire compensation". Being good at using OCC configuration will improve work efficiency and automatic processing.

"**IF +M01 Be. M1***" : After this function is opened, the corresponding position of the saved G-code will automatically exist M01 (corner cleaner code). At the same time, please open the "corner cleaner delay" function in "Processing" - "Parameters" to use this function.

Ok	Times(1-7)?	5			
Overlap (mm)	Tab width(mm)	1.2			
1'0ffseg(>=0)	1 H-freg(1-7)	1			
2'0ffseg(>=0)	2 H-freg(1-7)	2			
3'0ffseg(>=0)	3 H-freg(1-7)	3			
4'0ffseg(>=0)	4 H-freg(1-7)	4			
5'0ffseg(>=0)	5 H-freg(1-7)	5			
Starting CUT Tab,H	Starting CUT Tab,H-freg(1-7)(No=0)				
Starting CUT	Tab, STOP ?	No			
Offseg of 5'CUT	Tab (general=0)	0			
H-fre. of 5'CUT	Tab (1-7)(No=0)	0			
(If +M01 Be. M1*)	(Save Config OCC)				
1: If Overlap<0 then to endp on out-line. H-freg: 1->001, 2->0107->111.					
2: If Tabewidth<0othene1-times CUT Tab					
> 2's > 3's=0					
	0k 0verlap (mm) 1'0ffseg(>=0) 2'0ffseg(>=0) 3'0ffseg(>=0) 4'0ffseg(>=0) 5'0ffseg(>=0) 5'0ffseg(>=0) Starting CUT Tab,H Starting CUT Tab,H 0ffseg of 5'CUT H-fre. of 5'CUT (If +M01 Be. M1*) √3 then to endp on out-line <0otherent-times CUT Tab	$\frac{0k}{0 \text{ Ver lap (mm)}} = \frac{0k}{1 \text{ Ines (1-7)?}}$ $\frac{0 \text{ Ver lap (mm)}}{1^{2} \text{ Off seg (>=0)}} = \frac{1 \text{ H-freg. (1-7)}}{1 \text{ H-freg. (1-7)}}$ $\frac{2^{2} \text{ Off seg (>=0)}}{3^{2} \text{ H-freg. (1-7)}}$ $\frac{4^{2} \text{ Off seg (>=0)}}{5^{2} \text{ Off seg (>=0)}} = \frac{4 \text{ H-freg. (1-7)}}{5^{2} \text{ Off seg (>=0)}} = \frac{4 \text{ H-freg. (1-7)}}{5 \text{ H-freg. (1-7)}}$ $\frac{5^{2} \text{ Starting CUT Tab, H-freg. (1-7) (No=0)}}{5 \text{ Starting CUT Tab, STOP ?}}$ $\frac{6 \text{ Off seg of 5' CUT Tab (1-7) (No=0)}}{1 \text{ H-fre. of 5' CUT Tab (1-7) (No=0)}}$ $\frac{1}{\sqrt{3}}$ $\frac{1}{\sqrt{3}}$ $\frac{1}{\sqrt{3}}$ $\frac{1}{\sqrt{3}}$ $\frac{1}{\sqrt{3}}$ $\frac{1}{\sqrt{3}}$			



After clicking on "IF+M01 Be. M1 *", it will change to "OK +M01 For M1**", and a text prompt will appear in the bottom left corner.

		Filename: I:\WDDBB\HF9\00A	
		Offset F= 0.000	
	(1)	Form 2D-lists of G-Code	
	(2)	Form 2D-lists of 3B	
	(3)	3B With multi-times CUT	
	(4)	Form lists of Cone	
	(5)	Form Change-Cone	
	(6)	• Times of CUT	
	(7)	• Times of CUT-Config	
	(8)	• User-Defined CUT	
	(9)	Process	
	(0)	EXIT	
			v
Note:	Times=5	Overlap(mm)=.30 Ta	ab width(mm)=1.2 M01+M1*

After the M01 automatic generation function is turned on, a prompt of "M01+M1 *"

will appear on the rear main interface, making it easy for users to know the status.

HI	7 V9				ULSE - 3 + ON/OFF
	1	Examine the time of short circuit	:	5(8)	TT.2NC
	2	opostpones the time	1	On Sing(5(S)	
	3	Step number of UNDO	:	10(Step)	
	4	Speed of UNDO	:	100(Step/S)	
	5	The Speed of NULL and MOVE and RESCT	:	1000(Step/S)	
	6	Most guickly speed of MOVE and RESCT	:	1000(Step/S)	
	7	CUT to End:Close machine and beep	:	Yes,Beep 5(S)	
	8	UNDO to End:Close machine and beep	:	Yes,Beep 5(S)	MOVE, CHEC, PARA EXIT,
	9	CUT the hour the most quickly speed	:	1000(Step/S),(1)	READ DRYRUN UNDO
	A	Work piece thicknes (cal. effici. use)		60(mm)	
	В	Para. of Pulley	»	(When 4-axes.)	*UBJECT RESCT HEASUR
	С	Para. of 4-axes	>>	(Can't as on.)	+CUT +ONE CONTIN
	D	Other parameters	»		-CUT -ONE STOP
	0	EXIT			TIME=0.000.00.00
NF	AME: T	T ZNC SEGM: 0		10:34:36 MODE: Pa	ra EFF.STEP/S ESC

After using the "IF+M01 Be. M1 *" function, please turn on the "The pure cape

postpones the time" function in "Processing" - "PAPR".

This function can correct short circuits that occur during multiple mechanical cuts and different times of cutting.

"User-Defined CUT" : The punch length, step allowance, die step and manual pause are only valid for the first cut.

User-defined CUT			
	(1) Male Overcut Length(mm)	0	
	(2) Tab once-cut margin(mm)	0	
	(3) Female Tab >>>		
	(4) Manual MOO FirstCut Set	OFF	
	(0) Save and Exit		
		<i>S</i>	
(1) Input 9 on Enter No quereut			
(2)Female overcut length or width is 0,No overcut			

"Manual pause is only valid for the first switch": on / off

Click on to switch between on and off, and the status remains valid regardless of software exit or software operation.

Generally, this function is applied to the suspension of die fixing and waste taking (&2nc). Manually add the pause symbol in the full drawing programming graphics. When the die has no steps, the manual pause symbol reminds the fixed waste, and the pause reminds the waste to be removed after the first knife is cut. Method of adding alarm symbol: "full drawing programming" - "correction" - "truncation: track line" - "other" - "alarm symbol".



When "manual pause is only valid for the first cut" is on, the G code will display [manual M00 only for the first cut: on]. When it is off, it displays [manual M00, only the first switch: off].

When the "manual pause symbol is only valid for the first cut" is on, there is only the manual alarm symbol of the first cut in the G code of multiple cuts, and there is no manual alarm symbol in the number of other cuts.

If you need to switch before this state during work, please pay attention to the prompt state below the G code saving place.



"Manual pause is only valid for the first cut" function remains valid after changing the cutting times of different figures in "supplement".

"Form 2D-lists of G-code" :



Save in multiple G code modes :

- (1) Common G-code File (2NC)
- (2) Female G-code File With Stop Sign (&.2NC)
- (3) Auto-delay G-code File (.TAC)
- (4) Auto-delay and stop G-code File (.TA1)
- (5) Common Different Times G-code File

HF WEDM G code generation has a unique processing mode. The generated G code combined with high-frequency parameters makes the workpiece more smooth and delicate.

(5) "Common Different Times G-code File" :



Select "save common machining orders with different cutting times", and the options are

2nc, & 2nc, TAC and TA1 according to the requirements.



Displays how many independent figures are included in this cutting diagram.

Enter the OCC file of each independent drawing according to the cutting order

(cutting times parameter).



After OCC input, confirm the operation. (confirm whether the entered OCC is incorrect)



Enter a file name and save the file.



After 2nc is saved, it is transferred to machining and the 2nc file is retrieved, and the

display is as above (the cutting times of each independent figure are different).

"Generate plane G code processing order" can generate g codes in different situations according to work requirements, and can realize a variety of G codes such as M00 processing, pause, delay and user-defined delay time. At the same time, the G code generated by HF software includes patented processing mode. The generated code is used with high-frequency parameters to make the workpiece more smooth and fine.



"Generate 3B code processing order" :

3b processing order can be generated and transmitted to single board computer.

"Generate 3B group code processing order" :



3b processing order can be generated and transmitted to single board computer.

"Generate general taper machining order"

(1) Graph in Down / Top	Graph in Down
(2) Top <down top="">Down</down>	Top < Down
(3) Single Gradient(°)	10
(4) Thickness (mm)	15
(5) Display 3D-graph	
(6) Display Lists	
(7) Process	
(8) Save Lists	
(9) Save Lists-First Cut Pause	[&.3NC]
(A) Form file of HGT	
(0) E×it	



&.3NC "Stop processing after the first knife is cut, and save the single disk"



In "program", add an alarm symbol to the end of the graphic lead-in line and select the second point. Select "save the processing order after the first cutter is cut", and the processing interface calls the G code file to pause after the first cutter is completed.



"Generate variable taper machining order" :



&.4NC "First knife stop disk"



In "program", add an alarm symbol to the end of the graphic lead-in line and select the second point. Select "first tool stop save disk", and the G code file can be retrieved from

the processing interface to pause after the first tool is completed.

10. "4-AXES"

 Need Lead In/Out-Lines.Start point of in-lines(Top-Down) are equal. Use zone:Zones of Top-Down are equal.Hint:Lines in brackets and each lines outside the brackets is a zone.The In/Out-1' number should be equal. 				
(1) Name	e of Top-graph	TI.HGT		
(2) Name	e of Down-graph	T2.HGT		
(3) Thio	kness of Work piece	30		
(4) Mode	e of Compose	Use zone (segment) compose		
(5) Set	zone (brackets)			
(6) Disp)lay 3D-graph			
(7) Disp)lay Lists			
(8) Proc	ess			
(9) Save	e Lists			
(A) Save	e Lists-First Cut Pause			
(B) Time	es of CUT	3 Times, Overlap=.30		
Form file	of HGT Exit	Tab width=1.2		
Topzones :	3 Down-zones: 7	Topsegm.: 3 Down-segm.: 7		
		[Esc:Exit]		

Build 4-Axes according to the zones(segments) of top &down graphic (HGT)

Optional "Times of CUT", "Lists-First Cut Pause", "Form file of HGT ".

Create two different shapes on the drawing interface: for example





Example: T1. HGT and T2. HGT, respectively.

T1 is a full circle, T2 is a right angle square.

The meaning of interval: the default number of segments

Therefore, we conclude that the intervals of T1 and T2 are not equal.

When both the upper and lower surface shapes are the same shape, or both are shapes with the same line segment, the default method of interval synthesis is directly used to generate 5NC code. (Please set the cutting times in advance)

Number of cuts:

		0k	Times(1-7)?	3				
	.30	Overlap (mm)	Tab width(mm)	1.2				
	.04	1'0ffseg(>=0)	1 H-freg(1-7)	1				
	.02	2'0ffseg(>=0)	2 H-freg(1-7)	2				
	0	3'0ffseg(>=0)	3 H-freg(1-7)	3				
		Starting CUT Tab,H	-freg(1-7)(No=0)	3 0				
		Starting CUT	Tab, STOP ?	No				
		Offseg of 3'CUT	0					
		H-fre. of 3'CUT	Tab (1-7)(No=0)	0				
		(If +M01 Be. M1*)	(Save Config OCC)					
1: If Ove	1: If Overlap<0 then to endp on out-line. H-freg: 1->001, 2->0107->111.							
Z: If Tab	2: If Tabewidth<0othene1-times CUT Tab							
3: offset: 1's > 2's > 3's=0								

Heterogeneous synthesis method: synthesis by interval:

 Need Lead In/Out-Lines.Start point of in-lines(Top-Down) are equal. Use zone:Zones of Top-Down are equal.Hint:Lines in brackets and each lines outside the brackets is a zone.The In/Out-1' number should be equal. 					
(1) Name of Top-graph	T1.HGT				
(2) Name of Down-graph	T2.HGT				
(3) Thickness of Work piece	30				
(4) Mode of Compose	Use zone (segment) compose				
(5) Set zone (brackets)					
(6) Display 3D-graph					
(7) Display Lists					
(8) Process					
(9) Save Lists					
(A) Save Lists-First Cut Pause					
(B) Times of CUT	3 Times, Overlap=.30				
Form file of HGT Exit	Tab width=1.2				
Topzones: 3 Down-zones: 7	Topsegm.: 3 Down-segm.: 7				
	[Esc:Exit]				

When T1 and T2 have unequal intervals, Junhui displays an error message when displaying a stereoscopic image or saving a processing order. At this point, we can use 'composition by length' or 'processing line segments as intervals'.

Heterogeneous synthesis method: synthesis by length:

1) N 2) U 3) 1	 Need Lead In/Out-Lines.Start point of in-lines(Top-Down) are equal. Use zone:Zones of Top-Down are equal.Hint:Lines in brackets and each lines outside the brackets is a zone.The In/Out-1' number should be equal. 					
	(1) Name of Top	-graph	T1.HGT			
	(2) Name of Dow	m-graph	T2.HGT			
	(3) Thickness o	f Work piece	30			
	(4) Mode of Com	pose	Use length compos	e		
		Å				
	(6) Display 3D-	graph				
	(7) Display Lists					
	(8) Process					
	(9) Save Lists					
	(A) Save Lists-	First Cut Pause				
	(B) Times of CUT		3 Times, Overlap=	.30		
	Form file of HGT	Exit	Tab width=1.2			
			Topsegm.: 3	Down-segm.: 7		
				[Esc:Exit]		

When T1 and T2 have unequal intervals, the "heterohedral synthesis method: synthesis by length" can be used

Heterogeneous synthesis method: treating line segments as intervals:

After selecting "Process line segments as intervals, the upper and lower graphics will be displayed for switching views.





Since the number of intervals for T1 is 1 (the number of graphic segments is 1), we can set T2 to 1 interval.

Select the "front bracket" to locate the cutting start point (ESC deselected), and then select the "back bracket" to locate the cutting start point (ESC deselected).



At this point, we will find that the "front bracket" and "back bracket" of T2 overlap, indicating that the starting and ending points are in the same place, and the number of intervals is 1. This ensures that the number of intervals between T2 and T1 is the same.

(In actual operation, the number of intervals can be set according to how many intervals need to be synchronized between two graphics)



After displaying the stereoscopic image, we will find that the graphics are already valid. Click on "Save Processing Order" to proceed

Heterogeneous synthesis has three functions:

- (1) Directly using the same interval number: synthesizing by interval
- (2) Use of different interval numbers: synthesized by length
- (3) Using different interval numbers: treating line segments as intervals

In practical processing, it can meet different needs and graphic characteristics for heterogeneous synthesis processing. You can synchronize the number of intervals between two graphs based on the difference in the number of intervals on the upper or lower surfaces.



3D-graph can be displayed according to different angles of "X-Rotate", "Y-Rotate"



and "Z-Rotate".

After reading the 5NC file in Process interface, can select "3D" or "2D" display.

&.5NC "Save Lists-First Cut Pause"



Add an alarm symbol to the end point of the graphic Lead-in in "Program" and select the second point. Select "Save Lists-First Cut Pause", and reading G code file in Process interface, cutting will pause after the Lists-First Cut is completed.

Number of cuts , Helical gear:



In the upper and lower surface shapes, we only need to have the same starting point

of the introduction point for both shapes, and the endpoint of the introduction line

is located at the same point of the two tooth tips, respectively.



(3D+2D) Integration desing:

After configuring all files, select (3D+2D) Integration desing

(3D+2D)Integration Design: Umread IME File IM-E2401							
1. ON/OFF	Batch>>	3D-OCC	3D-H^F	Pile	First	2D-OCC	2D-H^F
3D= 4	3D Gr.	Reset	Reset			Reset	Reset
2. > Load	Gr. 1						
3. < Output	Gr. 2						
4. + Save	Gr. 3						
5 Clear	Gr. 4						
	Gr. 5						
PAGE: 1	Gr. 6						
6. Page Up	Gr. 7				Π	Γ	
7. Page Down	Gr. 8					Γ	
8. Exit	Gr. 9				Π	Γ	Γ
	Gr. 10						
	Gr. 11						
	Gr. 12						
HF SOFT							

Initialize interface

Mind map:

Figures 1, 2,... all represent how many different faces there are, for example, 3D=4 on

the homepage.

The straight body belongs to a part of the heterohedron.

Two parts of understanding:

(1) Is it to cut the heterohedron first and then cut the straight body? Or do we cut the straight body first and then the heterohedron?

(2) Do you use the upper surface graphics or the lower surface graphics for a straight body?

Straight cut surface: 1. The upper surface shape is straight body/2. The lower surface shape is straight body/0. Cancel or reset

First (oblique): 1. Cut the oblique (heterohedron) first/2. Cut the straight body first/0.

Cancel or reset

(3D-OCC) OR (2D-OCC) When there is . When:

set to no setting (using 0.OCC)

($3D-H^{F}$) OR ($2D-H^{F}$) When there is . When:

set to no setting (using default h^f parameters)

One cut (when the table has. = no manufacturing parameter =0.OCC), but with electrical parameters, the first cut electrical parameters are the M11 content in the selected electrical parameters file.

(3D+2D)Integration Design: Unread IME File IM-E2401							
1. ON/OFF	Batch>>	3D-OCC	3D-H^F	Pile	First	2D-OCC	2D-H^F
3D= 4	3D Gr.	Reset	Reset			Reset	Reset
2. > Load	Gr. 1						
3. < Output	Gr. 2	A2	B3	Սբ	Bevel	A3	B5
4. + Save	Gr. 3						
5 Clear	Gr. 4						
	Gr. 5						
PAGE: 1	Gr. 6						
6. Page Up	Gr. 7	Π			Π	Γ	
7. Page Down	Gr. 8						
8. Exit	Gr. 9						
	Gr. 10				Γ	Γ	
	Gr. 11						
	Gr. 12						
HF SOFT							

It is possible to configure all different faces in bulk, or to configure a specific face separately. After configuration is completed, if the switch is on, it will display "3D+2D"



Processing document storage (6NC)



```
N0000 G92 X0Y0 Z 30.0 {x= 0.0 y= 0.0}
           4.0000 Y
                       0.0000
N0001 G01 X
                                { LEAD IN }
N0002 G01 X
             4.0000 Y
                        4.0000
N0003 G01 X
            -4.0000 Y
                        4.0000
            -4.0000 Y
N0004 G01 X
                        -4.0000
N0005 G01 X 4.0000 Y
                        -4.0000
                        0.0000
N0006 G01 X
             4.0000 Y
N0007 G01 X
             0.0000 Y
                         0.0000
                                { LEAD OUT }
N0008 M00
            20.0000 Y
N0009 G00 X
                         0.0000
N0010 M00
N0024 G01 X
             23.7000 Y
                         0.0000
                                { LEAD IN }
N0025 G01 X 23.9800 Y
                         0.0000
     M11(0;0;0;0;0;0;0;0;0;0;0;0;0;0;11;0)
             23.9800 Y
N0027 G01 X
                         3.9800
                      3.9800
N0028 G01 X 16.0200 Y
N0029 G01 X 16.0200 Y
                        -3.9800
N0030 G01 X 23.9800 Y -3.9800
                        0.0000
N0031 G01 X 23.9800 Y
N0032 G01 X
             23.9900 Y
                         0.1500
N0034 G01 X
             23.9900 Y
                         3.9900
N0035 G01 X
           16.0100 Y
                         3.9900
```

Explanation: The new 6NC code file contains the electrical parameters after the M group number in the file.

If the electrical parameters are not included after the M group number, the electrical parameters will be sent according to the system's default M group number parameters.

(3D+2D integrated design) can meet the different cutting times and electrical parameters of different shapes in heterohedra.

11. "Other"

[Other] 1						
(1) Set HF Language	(2) Edit File	(3) Delay File				
(4) File Or Folder	(5) IGES->HGT	(6) G Code Change				
(7) 3B Code->HGT	(8) 3B Codes->Processor	(9) G Code->HGT				
(A) 3B Codes->Memorizer	(B) Involute Gear Para.	(C) RS232-Com-In/Out				
(D) Cls Program View	(E) Cls Process View	(F) HF Initialization				
(G) Process Output	(H) Backup&Load Paramet.	(I) Backup&Load GHOST				
(J) Bottom Config Cancel	(K) Bottom Config Set	(L) Mouse Copy File				
(M) Card XYUVZ Ordinate	(N) Usb Drive Letter (O) Card BIOS Set Ex					
(P) Date Times Setting	(Q) HF Down Shutdown PC	(S) G Support In/Output				
(S) RS232-Com Check	(T) File Batch In/Output	(U) All Data Sfx To Zip				
(V) HF Updat (W) Process	(X) Program (Y) PageUp	(Z) PageDown (Ø) EXIT				
HF SOFT						

[Other] 2						
-						
(1) G'Code->Fanuc G'Code	(2) G'Code->GF G'Code	(3) Renishaw RTL->AME				
(4) Renishaw REN->AME	(5) Workpiece Count	(6) Process 3B/ ON				
(7) Extemal 3B->HF 3B	(8) 2NC->A-axis Rotation					
(V) HF Updat (W) Process	(X) Program (Y) PageUp	(Z) PageDown (Ø) EXIT				
HF SOFT						

The following shows only individual content instructions, and others are commonly

used.
(1) **"Set HF Language"** :Can switch system languages between Simplified Chinese,

[Other] 1										
(1) Set HF Language	(2) Edit File	(3) Delay File								
(4) File Or Folder	(5) IGES->HGT	(6) G Code Change								
(7) 3B Code->HGT	(8) 3B Codes->Proces	ssor (9) G Code->HGT								
(A) 3B Codes->Memorizer	(B) Involute Gear Pa	ara. (C) RS232-Com-In/Out								
(D) Cls Program View	(E) Cls Process View	(F) HF Initialization								
(G) Process Output	(H) Backup&Load Para	amet. (I) Backup&Load GHOST								
(J) Bottom Config Cancel	(K) Bottom Config Se	et (L) Mouse Copy File								
(M) Card XYUVZ Ordinate	(N) Usb Drive Letter	c (O) Card BIOS Set Explain								
(P) Date Times Setting	(Q) HF Down Shutdown	n PC (S) G Support In/Output								
(S) RS232-Com Check	(T) File Batch In/Ou	tput (U) All Data Sfx To Zip								
(V) HF Updat (W) Process	(X) Program (Y) Pag	geUp (Z) PageDown (Ø) EXIT								
	HF SOFT									

Traditional Chinese, and English.

Select (1)Set HF Language

SET HF SYSTEM	LANGUAGE			
NATIVE SYSTEM	LANGUAGE :			
1. Sim Chinese	2. Tra Chinese	3. English	4. Import HF	5. Exit 😓
Note:Pls Stop	The Cut Work			

HF software will display no other languages without importing a language pack

SET HF SYSTEM LANGUAGE									
Language Adding									
1. Sim Chinese	2. Tra Chinese	3. English	4. Import HF	5. Exit					
Note:Pls Stop	The Cut Work								

Select the latest version of FHGD-C.EXE file on the USB drive (or hard drive) through

"Import", and then the Chinese language software will start to be fully automatically imported

SET HF SYSTEM LANGUAGE			
NATIVE SYSTEM LANGUAGE:			
(1) Simplified Chinese			
(3) English			
1. Sim Chinese 2. Tra Chinese	3. English	4. Import HF	5. Exit 🔓
Note:Pls Stop The Cut Work			

After the import is completed, it can be found that the Chinese language itself and the standard English language imported already exist.

You can switch between any of the three languages by selecting the button.

(4) "File or Folder" :

File Or Folder:
(1) Del File
(2) Batch Del File
(3) Copy File
(4) Batch Input(out)
(5) New Folder
(6) Del Folder
(7) EXIT
r9
Notice:Deleted Files&Folder Cannot Be Restored,Pls Prudent Operation
HF SOFT

(5) "Edit Text" : 2 editing modes and automatic sorting by N sequence number

	Edit Txt File													
1	MODEL-1	2	MODEL-2	:	3	N	Reorde	r	4	Display	y Text	5	Exit	
N	oto'(The N N	unhan	a In Th		6 J.L	; 1 1	ha du	to P		den) _				
						Н	IF SOFT							

There are two editing modes in the Edit text feature

Reorder N: The G code of 2NC will automatically reorder N sequence number after using this feature after artificially inserting a code (such as M11) or artificially modifying the sequence number of the N segment. And no matter whether the N sequence number is correct, it is rearranged correctly.

When using this function, a text prompt will be made after finding a definite N sequence number.

Display text: You can view the contents of the file before or after the text is modified to see if the code content or N sequence number is correctly arranged.

Edit Mode 2: You can edit ordinary text content, or compare and copy and paste content in dual text files.

Dual Text Mode: In "Edit Mode 2", the first text file is selected, and the keyboard Alt+F6 is used to quickly enter the "Split Windows" mode. Alternatively, you can click on "View" (or ALT to move options to View) with the mouse, and then click on "Split Windows" with the mouse. At this point, move the cursor to the second text mode and open a new file through "File Open". At this point, the dual text display will appear. *How to copy and paste:* Hold down the left mouse button and drag from left to right, select the content to be copied (grayed out), and start copying with Ctrl+C. Click on the location where you want to paste with the mouse, and Ctrl+V will start pasting.

At the same time, you can also use the keyboard Shift+arrow keys to select a row (grayed out), Ctrl+C to start copying, and Ctrl+V to start pasting.

(5) "IGES -> HGT" : Converting IGES files to HGTHGT graphics files.

(6) "G Code Change" : Customize the G code content, convert the original HF (G

code) into a custom code format G code, and provide a complete solution for exporting the converted G code to different CNC centers for real-time processing.

It should be noted that "G Code Change" can also convert text content of any format into the text content of the demand object.But the converted text content needs to match the conversion rules.

G Code Custom Conversion							
(1) Select basic G code	(2) Select custom format	(3) Edit custom format					
(4) Delay G code	(5) Copy G code file	(6) Exit					
(7) Start change		슈					
Custom Format: 1.2DP							
Basic G Code: TEST9	.2NC						
Changed G Code: TEST^2	2DP.2NC						

2DP File Name: 1.2DP									
G92	G99	F=	K=	{	}	}	{	X=	XX=
¥=	¥¥=	LEAD IN	IN	LEAD OUT	OUT	END UP	UP	END DOWN	DOWN
M00	MØM	M01	XM01	M02	XM02	GØØ	କେଥ	GØ1	K01
GØ2	KØ2	GØ3	көз	x		Y	YY	U	
V	VV	z		I		J		к	
L		R		M10	S10	M11	S11	M12	812
M13	S13	M14	S14	M15	815	M16	S16	M17	S17
Cu	stom 1	N0039	=P00399						
Cu	Custom 2 N0040=P00409								
Clea	Clear All Select 2DP Save 2DP Exit								

Edit the 2DP custom file, select the original G code, select the Custom format (2DP), and start change.Support to display query original and changed G code files, copy G code files to anywhere and USB drive.

Note: The input content of "Edit Custom Format" in "G Code Change" should not conflict with the previous content, for example, "{" is change to "}" , and then "}" is changed to "{" , and the actual data is "{" and "}" will not change.

(8) "3B Codes -> Processor"

1.3B	(Common Controller)
	(1) FeiHong-1
	(2) ShangWuZhuan
	(3) ChangFeng-2
	(4) SUSanGuang
	(5) ChangFeng-1
	(6) ChengWuZhuan
	(7) HuaFang-1
	(8) HuaFang-2
	(9) FeiHong-2
	(A) Send Options Edit
	(B) (Select 3B File)
	(0) Exit

1.3B	(Common Controller)	
	(1) FeiHong-1	
	(2) ShangWuZhuan	
	(3) ChangFeng-2	
	(4) SUSanGuang	
	(5) ChangFeng-1	
	(6) ChengWuZhuan	
	(7) HuaFang-1	
	(8) HuaFang-2	
	(9) FeiHong-2	
	(A) Send Options Edit	
	(B) (Select 3B File)	
	(0) Exit	
		1
	(Ready) Enter Start:	

3 B	α	.3B)							SPEED:0
(N0001)	в	13629	B	1473	B	13629	GX	L1	
(N0002)	В	40	В	8	В	40	GX	L1	
(N0003)	В	13669	В	0	В	54676	GY	NR1	
(N0004)	В	20	В	40	В	40	GY	L1	
(NØØØ5)	В	13689	В	40	В	54716	GY	NR1	
(NØØØ6)	В	13689	В	0	В	40	GY	NR1	
(NØØØ7)	В	9	В	40	В	40	GY	L1	
(NØØØ8)	В	13698	В	80	В	54714	GY	NR1	
(NØØØ9)	В	13699	В	0	В	80	GY	NR1	
(NØØ10)	В	13698	В	80	B	80	GY	NR1	
(NØØ11)	В	80	В	9	B	80	GX	L3	
(NØØ12)	В	13628	В	1632	B	13628	GX	L3	
(NØØ13)	D								
(NØØ14)	В	36296	В	370	В	36296	GX	L1	
(NØØ15)	D								
(NØØ16)	В	13629	В	1473	В	13629	GX	L1	
(NØ017)	В	40	В	9	В	40	GX	L1	
(NØØ18)	В	13669	В	0	В	54676	GY	NR1	
(NØØ19)	В	20	В	40	В	40	GY	L1	
(NØØ2Ø)	В	13689	В	40	В	54716	GY	NR1	
(NØØ21)	В	13689	В	0	В	40	GY	NR1	
(NØØ22)	В	10	В	40	В	40	GY	L1	
(NØØ23)	В	13699	В	80	В	54716	GY	NR1	
(NØØ24)	В	13699	В	0	В	80	GY	NR1	
(NØØ25)	B	13698	B	80	B	80	GY	NR1	
🗌 Data	Ser	nding.	• •						ESC:Exit

(9) **"G Code** -> **HGT"** : Convert the G codes generated by the slow-moving, medium-moving, and fast-moving software to HGT graphic files.

(G) **"Process Output"** : Because the machining drawing directly reads the G code of USB drive, but the local file does not exist, use this function to export the machining drawing as a G code file and save it.

(I) **"Backup&Load GHOST**" : Real time HF system GHOST backup and recall under underlying architecture.

It has three main characteristics: (1) the ability to backup and restore; (2) The operation is extremely simple; (3) Extremely fast

Backup&Load GHOST:									
(1) Backup GHOST	(2) GHOST Load	(3) Cancle Select	(3) EXIT						
Notice:Backup&Load GHOST Will Resetting HF,Pls Prudent Operation									
	HF SOFT								

(J) **"Bottom Config Cancel"** : Due to individual reasons, the bottom configuration AUTOEXEC.BAT and CONFIG.SYS files required for WIN system startup are implanted into abnormal files, resulting in abnormal system memory work. This function will directly clear the bottom configuration and restore the clean bottom. Restart your computer after setting.

(K) **"Bottom Config Set"** : The bottom system starts setting and configuration, and the software runs faster and more stable. Restart the computer after setting.

HF Bottom Config: (1) ISA-USE CARD :Input 1 (2) PCI-USE CARD :Input 2 Pls Input Key: Note:[ESC-EXIT] HF SOFT

HF Bottom Config:
ISA-USB CARD
ISA-USB #5 : input 1
ISA-USB #6 : input 2
ISA-USB #7 : input 3
ISA-USB #8 : input 4
Input Select(Enter=1):
Note:[ESC-EXIT]
HF SOFT

ISA-USB defaults to # 5 in the underlying software, and in order to expand the user's application range, it includes four options that users can choose according to their

situation.

ISA-USB is a USB hot plug card that supports ISA type (black slot) in the bottom configuration.

PCI-USB is a USB hot plug card that supports PCI type (white slot) in the bottom configuration.

(L) "Mouse Copy File" : Quickly copy files by using file browsing and selection.

Mouse Copy File:							
(1) Select The File For Copy							
	EINTES	TNEN	UDISK()				
N USERDATN EXAMP2.3NC FU.DAT	DRVN XYUVN EXAMP3.5NC FV.DAT	ICON EXAMP1_2NC FC.DAT	PIFN EXAMP2.2NC FH.DAT				
Disk	<<	>>	Exit				
HF SOFT							

Select the files that need to be copied

Mouse Copy File:								
(2) Select Target Floder,Exit Start Copy File								
E:NTESTNEN HDISK()								
N USERDATN EXAMP2.3NC FU.DAT	DRUN XYUUN EXAMP3.5NC FV.DAT	ICON EXAMP1.2NC FC.DAT	PIFN EXAMP2.2NC FH.DAT					
Disk	<<	>>	Exit					
		HE SOF	T					

Enter the directory where the file needs to be pasted, select 'Exit Query', and the copy will be automatically completed

(M) **"Card XYUVZ Ordinate**" : Due to individual reasons, the processing interface cannot be entered, or cannot be cut normally, or the control card has no coordinate memory. Use this function to record XYUVZ coordinates, reinstall the "HF Initialization" or reinstall the HF system, and then the cutting position needs to be accurately positioned by using the Process interface OBJECT(->XY POINT) function..



(N) **"USB Drive Letter"** :

USB Drive Letter Detection:	U-DISK
Last USB Drive Letter:(NO)	
1. Detection 2. Exit	
Note:Use It Without A USB Disk (USB Disk Is Letter Detection)	

USB Drive Letter Detection:	U-DISK
USB Drive:(H)	
1. Detection 2. Exit	
Note:Use It Without A USB Disk (USB Disk Is Letter Detection)	

Exit Program	Process	4-A	xes	Conf	ig	Other	Informa.
1Detected USB Drive Letter2Box: Serial port3Default Path For R/W File4Cautiousely Changed Param.>5Program Right'Borde ESC6MDC Mode7> EXIT				<pre>(1)> H: (2)> COM1 (3)> (4)> Radius,Motor,Scope,Jump (5)> Right'Borde ESC(OFF) (6)> MDC Mode(OFF)</pre>			
Work Card:PCI CARD	L		Wo	rk Patl	h I:N	WDDBB\HF9	
HF SYSTEM FOR ISA&PCI CARD							

In the "System Settings" section, there is "Detected USB drive letter", which makes it easy for users to know the USB drive path. After "USB drive letter detection", all file browsers will display content such as "USB drive (F)" in the upper right corner, making it convenient for users to access USB drive files.

(O) "Font Library Install" :

HF Font Library Installation:								
Font Library For Short(Pack),Name(HGTSHX.EXE),Font Library Name(*.SHX)								
1 Loca Reinta, 2 USB PACK 3 Select PACK	4 Input * SHX	5 EXIT						
Note:Time Is Long,Pls Arrange Your Time Reasonably								
HF SOFT								

(P) **"Date Time Setting"** : Check and set the local time, identify whether the host battery is powered down, resulting in the loss of BIOS settings, or set the local date and time.

Specific Date:
2024-04-07 10:54:35
Y 2024 M 04 D 07
H 10 M 54 S 35
Refresh Exit
Note:Using Standard Format
HF SOFT

Please enter according to the date format or time format listed

(Q) **"HF Down Shutdown PC"** : Set whether to automatically shut down after exiting the HF software.

(V) **"HF Soft Upgrade"** : Suitable for bottom HF software upgrade.

HF Soft Upgrade Pls Select The Upgrade File (FHGD-E.EXE)						
	F : NTES	TNEHF90				
N PIFN SETUP.EXE	DRVN USERDATN Z.EXE	HELP∖ FHGD−E.EXE	ICON INSTALL.EXE			
Disk	>	\rightarrow	Exit			

Precautions before "HF soft upgrade" :

 The graphics in the old software "processing" have been processed, because the "HF software upgrade" will automatically clear the "processing" (initialization).

② The graphics in the old software "full drawing programming" have been saved, because "HF software upgrade" will automatically clear "full drawing programming" (initialization)

③ If you need to manually archive the "processing" - "parameter" information, you can take photos for archiving. However, "HF software upgrade" will automatically retain the "parameter" information in the original and old software, so this item is only for the reference of users who need additional backup files.

(4)"HF soft upgrade" is to upgrade to the latest version of HF software V9 or X9. Only software dogs with V9 or X9 identification are supported. Otherwise, the HF control system cannot be upgraded or started after upgrading.

"HF Soft Upgrade" :

The storage medium needs to have the official FHGD-E.EXE (for English or FHGD-C.EXE for Chinese) installation package of HF software.

The storage medium can be hard disk or USB flash disk. If it is hard disk, copy the installation package to the hard disk in advance.

USB flash disk mode: insert USB flash disk (HF-USB card port), and select the corresponding USB flash disk number in the path.

Hard disk mode: select the hard disk number in the path.

Please wait about 1-2 minutes after the package is upgraded automatically. Please pull out the USB flash disk according to the prompt in the step. After the upgrade is completed, it will automatically shut down (pull out the USB flash disk), restart it and enter the new version to present immediately.

<u>Tip: Use "HF Soft Upgrade" to update the local Chinese to English or traditional</u> <u>Chinese version, but if the downgrade software does not include the "HF Soft</u> <u>Upgrade" function, the "HF Soft Upgrade" function will not be available in the</u> updated version.

(R) **"G Support In/Output"** : Import and export of G code supporting files.

G-Code Support Files In/Output							
Pls Select The G-Code File (2NC/TAC/TA1) -(Copied File)							
	K:N	HF9					
N PIFN 正常加工N 001.2NC 002&.2NC 011&.2NC 1.2NC 1001&.2NC 1002.TAC 13.2NC	BASON USERDATN 0.2NC 001.TA1 002.2NC 02.2NC 1.TA1 1001.2NC 111.2NC 177.2NC	DRUN 加工参数N 00.2NC 001.YAC 003&.2NC 0^2DP.2NC 1.TAC 1001.TA1 1112.2NC 2&.2NC	EDITCO~1N 精修参数N 001&.2NC 0011&.2NC 01.2NC 1&.2NC 10.2NC 1001.TAC 117.TA1 2.2NC				
Disk	<<	>>	Exit				
Note: Auto Am	alyse After Se	lecting The G-(Code File.				

"G Support In/Output": import and export the configuration file (.ACF) of "Gr. Inside Null" matched with 2NC/TAC/TA1 and the bottom G-code data (.BCD) that can realize "OF." function(real-time fix trace), etc. The whole series of files is exported to a storage device or imported to a processing computer. It is very convenient for users to not need to re-do "Program" and then "Next" processing, and can call G code processing and use the "SUB" function in time.

(S) **"RS232-COM Check"** : It is applicable to two-way transmission detection of ASC code interworking between local computer and lower computer serial port.

RS232-Com In/Out C	heck (COM1) 9600,M,8	,2,RS,CS,DS,CD (0.58)							
Ready Output ASC: NO01 ASC CODE INPUT AND OUPUT CHECK										
Send ASC: NØØ1 ASC	Send ASC: NØØ1 ASC CODE INPUT AND OUPUT CHECK									
1. COM(Output)	2. COM(Input)	3. Initialize	4. Exit							
5. COM Output ASC NØ01 ASC CODE INPUT AND OUPUT CHECK										

(T) "File Batch In/Output" : It is suitable for native export and external import of

a large number of files.

File Batch Input/Output									
All(InPut)									
(1) Select a file of a certain type.(No select,exit not execute)									
	EIND	XF							
A1076.HGT	A1077.HGT	A1078.HGT	A10	79.HGT					
A1080.HGT	A1081.HGT	A1082.HGT	A10	83.HGT					
A1084.HGT	A1085.HGT	A1086.HGT	A10	87.HGT					
A1088.HGT	A1089.HGT	A1090.HGT	A10	91.HGT					
A1092.HGT	A1093.HGT	A1094.HGT	A10	95.2NC					
A1096.HGT	A1097.2NC	A1098.2NC	A10	99.HGT					
A1100.HGT	A1101.HGT	A1102.HGT	A11	Ø3.HGT					
A1104.HGT	A1105.HGT	A1106.HGT	A11	07.HGT					
A1108.2NC	A1109.HGT	A1110.HGT	A11	11.2NC					
A1112.HGT	A1113.HGT	A1114.HGT	A11	15.HGT					
Disk	<<	>>		Exit					
	-								
1. All(InP)	1. All(InP) 2. Part(InP) 3. All(OutP) 4. Part(OutP) 5. Exit								
Destination if the same file exists: All=all cover / Part=all skip									

Supports importing and exporting files in 18 formats, including 2nc, 3nc, 4Nc, 5nc,

(U) **"All Data Sfx To Zip"** : The software and data contained in the HF software directory are completely implanted into the zip package.

All data sfx to zip							
1. Start SFX	2. Output ZIP	3. Exit					
This time sfx path C:\HFCLOUD\03-31-2022.ZIP							

The working directory of HF software and all working files contained can be completely implanted into the compressed package. At the same time, it includes all the operation contents of local HF software, such as motor type, electrical parameters and so on. It can be used as software and data backup, PC data migration and transmission of HF cloud.

(2-3) "Renishaw RTL-AME" : Switch to "Process" interface.

Pitch File Char	nge							
Be Change File:	з Туре:							
.RTL (CARTO)								
1. Select X	2. Select Y	3. Change&Save	4. Reset	5. Exit				
X&Y merge to A	X&Y merge to AME,X or Y alone create to AME							

This function is applicable to the automatic conversion of the measured data (RTL) of the "CARTO" laser interferometer to the pitch file (AME) of HF. It can be directly applied or edited in "Processing" - "Reading disk" - "Pitch". It should be noted that the length of each segment and the number of measurements in the "CARTO" measurement should correspond to the "pitch compensation" format. In addition, Nsegment delay in "idling" can be used to trigger the measurement of laser interferometer.

(2-4) "Renishaw REN-AME" : Switch to "Process" interface.

Pitch File Char	nge							
Be Change File:	s Туре:							
.REN (CARTO)								
1. Select X	2. Select Y	3. Change&Save	4. Reset	5. Exit				
X&Y merge to A	X&Y merge to AME,X or Y alone create to AME							

This function is applicable to the automatic conversion of the measured data (REN) of the "CARTO" laser interferometer to the pitch file (AME) of HF. It can be directly applied or edited in "Processing" - "Reading disk" - "Pitch". It should be noted that the length of each segment and the number of measurements in the "CARTO" measurement should correspond to the "pitch compensation" format. In addition, N-segment delay in "idling" can be used to trigger the measurement of laser interferometer.

(2-4) "Renishaw REN-AME" :



There are 6 usage functions, with background control. When it is on, it will be effective at all times, and when it is off, it needs to be turned off until the function is enabled. Otherwise, it will remain effective.

The 'Workpiece Count Statistics' feature includes' Background Switch', 'Workpiece Count',' Output Log ',' Local Name ',' Clear Log', 'Time Queris', and 'Calender delay'.

First entry permission password: 111

Clear Log Permissions Password: 000111

Explanation:

The "Workpiece Count Statistics" can count the starting and completion times of all recorded workpieces in the log, as well as the file names.

Export Count Log "can export logs and use other databases to input software for statistics and import into the database.

The "Design Local Name" can be used to set the local name, personalized query and

identification of the different machine ownership of each log. When exporting the log, it will also be a LOG log with the same local name.

'Clear all logs' can clear all logs to avoid log accumulation; It is recommended that users clear the log once after a period of time.

The 'Timeline Query Log' can query the count of completed workpieces within the time period based on the input of the 'Start Date' and 'End Date' that need to be queried.

The "Month Day Check Log" uses the calendar browsing method to quickly select a month, and the workpiece count for that month will be displayed synchronously.



Workpiece Count:					Lo	cal Nar	ne:A000	1
			< 2	2023-10	>	6	EXIT	
1.Backstage Switch	1	2	3	4	5	6	7	
2.Workpiece Count	0	0	0	0	0	0	0	
	8	9	10	11	12	13	14	
3. Output Logo	139	1	0	0	0	0	0	
4.Local Name	15	16	17	18	19	20	21	
5.Clear Logo	0	0	0	0	0	0	0	
	22	23	24	25	26	27	28	
6.Time Queris	0	0	0	0	0	0	0	
7.Calender Delay	29	30	31					
	0	0	0					
Ø.EXIT								
2023-10 ALL= 140								
Notice:Pls Clear The Log After A Long Time								
		HF SO	FT					

Workpiece Count:		Local Name:A0001
1.Upload Log 2.Exit		
Note:Upload Log (COM1) ESC=Break	
	HF SOFT	

[Other] 2								
-								
(1) G'Code->Fanuc G'Code	(2) G'Code->GF G'Code	(3) Renishaw RTL->AME						
(4) Renishaw REN->AME	(5) Workpiece Count	(6) Process 3B/ ON						
(7) Extemal 3B->HF 3B	(8) 2NC->A-axis Rotation]						
		-						
(V) HF Updat (W) Process	(X) Program (Y) PageUp	(Z) PageDown (0) EXIT						
HF SOFT								

(2-6) "Process 3B/ON" or "Process 3B/OFF" :

"Process 3B/ON" :



"Process 3B/OFF" :



The two differences lie in whether the retrieval function of 3B is displayed in the processing interface when reading "Processing 3B/On" or "Processing 3B/Off".

(2-7) "Extemal 3B->HF 3B" :

[Other] 2								
(1) G'Code->Fanuc G'Code	(2) G'Code->GF G'Code	(3) Renishaw RTL->AME						
(4) Renishaw REN->AME	(5) Workpiece Count	(6) Process 3B/ ON						
(7) Extemal 3B->HF 3B	(8) 2NC->A-axis Rotation							
(V) HF Updat (W) Process	(X) Program (Y) PageUp	(Z) PageDown (Ø) EXIT						
HE SOFT								

Extemal 3B->HF 3B:					
1.Exte 3B>HF 3B 2.Output Exte 3B 3.Del 3B File 4.Display 3B File 5.To Cut 6.Exit					
Note:Change For Extemal 3B					
HF SOFT					

Extemal 3B->HF	ЗB:								
*****	******								
KS_Full H:NNØ	755.3	ЗЪ							
Round=0.00,0ff	set=l	0.10;Size=	=14	1.20 216.2	20;1	EffLen=:	25.0		
******	****	*******		*******	***	******	***		
Start Point =		0.000,		0.000	;				
N0001 B	0 B	0	B	1400	GY	L4			
N0002 B	0 B	0	В	3250	GΧ	L1			
N0003 B	0 B	0	B	1621	GY	L4			
N0004 B 2	50 B	1479	B	4479	GΥ	NR2			
N0005 B 15	00 B	0	B	1250	GΧ	NR1			
N0006 B	0 B	0	В	1621	GΥ	L2			
N0007 B	0 B	0	B	2500	GΧ	L1			
N0008 B	0 B	0	B	5157	GΥ	L4			
N0009 B 38	13 B	2287	B	3813	GX	LЗ			
N0010 B 4	65 B	773	B	772	GY	NR2			
N0011 B	0 B	0	B	2784	GΥ	L4			
N0012 B	50 B	0	В	100	GY	NR3			
N0013 B	0 B	0	B	1166	GY	L2			
Quit(ESC)	Quit(ESC) Continue(Enter):								
				HF	SOF	r			

Can convert 3B files from other software to 3B files that can be parsed by HF software.

If there is an "execution error" when selecting the 3B format file in "Process" - "Disk Reading" - "3B", you can try using this function for conversion.

(2-8) "2NC>A-axis Rotation" :

[Other] 2								
(1) G'Code->Fanuc G'Code	(2) G'Code->GF G'Code	(3) Renishaw RTL->AME						
(4) Renishaw REN->AME	(5) Workpiece Count	(6) Process 3B/ ON						
(7) Extemal 3B->HF 3B	(8) 2NC->A-axis Rotation							
(V) HF Updat (W) Process	(X) Program (Y) PageUp	(Z) PageDown (Ø) EXIT						
HF SOFT								

2NC	A-axis Ro	tation:	X.2	NC					Set:X.AAA
•		N0000	G92	X0Y0Z0 {f=	0.0	x= 0.0	y= 0.0}		
•							20		
•	30	N0001	GØ1 3	X 10.000) Y	0.000	10		
•	15	N0002	GØ1	X 10.000	9 Y	10.000	0		
•									
•		N0003	MØ2						
•		-							
•									
•									
•		-							
•		-							
•									
0									
•									
<	>	Load	2NC	Load Set	Sau	ve Set	2NC->XYA	Clear Set	Exit

HF V9	EP	PUL	SE - 3 + ON/OFF
			X0006002
			Y0000000
			A0000018
			MOVE CHEC PARA EXIT
			READ 5 DRYRUN UNDO 1
			OBJECT, RESCT MEASUR
		OF.	+QUT B +ONE CONTIND
		SUB	-CUT E -ONE STOP
SUB>>		GR	TIME=01 0000.00.25
N0000 G92 X0Y0Z0 {F= 0.0 X= → N0001 G01 X 10.0000 Y 0	0.0 Y= 0.0} 0.0000 A30		RTS: 1
NAME: XYA XYA SEGM: 1	15:50:52	MODE: +CUT	EFF.STEP/S 1025.0 ESC

The A-axis rotation degree can be edited (added) on the basis of 2NC.

After being saved as XYA format file, the processing interface can retrieve XYA format

file to process XYA axis linkage.

- (W) "Process" : Switch to "Process" interface.
- (X) "Program" : Switch to "Program" interface.

12. Slow Wire G Code Conversion

For example, slow wire G code (2D1.2NC)

HF X9	」 L □ □ PULSE - 3 + ON∕OFF
	X0000000 Y0000000
SUB>>	MOVE1 CHEC2 PARA3 EXIT READ 5 NULL 6 UNDO1 •OBJECT8 RESCT 9 CENTER •OBJECT8 RESCT 9 CENTER +CUT 8 + ONE c CONTIN -CUT c - ONE f STOP 6 GR
(2D1.NC)	
NAME: 2D1	2NC SEGM: 0 10:49:58 MODE: STOP EFF.STEP/S ESC

In "Process", the code (2D1.2NC) generated by another slow wire program is loaded, and the interface is displayed as above. The display lines are not connected. The solution is as follows :

[Other] 1			
(1) Set HF Language	(2) Edit File	(3) Delay File	
(4) File Or Folder	(5) IGES->HGT	(6) G Code Change	
(7) 3B Code->HGT	(8) 3B Codes->Processor	(9) G Code->HGT	
(A) 3B Codes->Memorizer	(B) Involute Gear Para.	(C) RS232-Com-In/Out	
(D) Cls Program View	(E) Cls Process View	(F) HF Initialization	
(G) Process Output	(H) Backup&Load Paramet.	(I) Backup&Load GHOST	
(J) Bottom Config Cancel	(K) Bottom Config Set	(L) Mouse Copy File	
(M) Card XYUVZ Ordinate	(N) Usb Drive Letter	(0) Card BIOS Set Explain	
(P) Date Times Setting	(Q) HF Down Shutdown PC	(S) G Support In/Output	
(S) RS232-Com Check	(T) File Batch In/Output	(U) All Data Sfx To Zip	
(V) HF Updat (W) Process	(X) Program (Y) PageUp	(Z) PageDown (Ø) EXIT	
HF SOFT			

Option "Other" - "G Code->HGT"



Select the existing G code processing order and give the name of the HGT file to be saved. The center of the circle in the G code is represented as (2). After execution, a graphic file named (S1. HGT) will be generated.

In "Program" ,load (S1.HGT) and then handle it.



It should be noted that if the G code generated by the slow-moving wire is a single cut, "Next" can be performed directly. If the slow-moving wire generates multiple cuts, the extra lines need to be corrected. After the correction is completed, "Next", generate G code according to normal requirements.


Calling S1.2NC, we will find that the S1.2NC generated after the slow wire 2D1.2NC conversion meets the normal requirements, then the processing can be started.

13.Config

Exit	Program	Process	4-A	xes	Conf i	ig	Other	Informa.
1 2 3 4 5 6 7	Detected US Com Port Mo Default Pat Cautiousely Program Rig MDC Mode EXIT	B Drive Let de h For R/W F Changed Pa ht'Borde ES	ter ile ram.> C	(1 (2 (3 (4 (5) (6	$\begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $	H: MODB Radi Righ MDC	US us,Motor,Sco t'Borde ESC Mode(OFF)	ope,Jump (OFF)
Work Ca	ard:PCI CARD			Wa	rk Patl	h I:\	WDDBBNHF9	
		HF SYSTEM	FOR I	SA&PCI SOFT	CARD			

(2) "Modbus/Asc"

If COM (serial port) is set to MODBUS or ASC in System Settings, data is sent through this protocol.

For example, when it is MODBUS, setting (7) in "High Frequency Group Number and Parameters" will appear "Serial MODBUS" to follow.

HF SOFT		
	Class And Parameters	
	(1) Class or Parameters	Out Para.(4-Type)
	(2) Cuting of Parameters	
	(3) Out Paramet.(Not change)	
	(4) Out Paramet.(Can change)	
	(5) Edit file of Parameters	
	(6) Link DataBse	
	(7) COM-Port Send(ASC) Set	COM MODBUS(Z' Send Pulse)
	(8) EP Pointing to	(3)
	(9) Lock Parameters Select	
	(0) EXIT 🔓	
	(COM ASC Active,Don't Leave The Pr	rocess)
4.	15:08:21	

(6) **Program Right' Borde ESC**:

Turn on this function and exit the branch column in "Full Drawing Programming" with the mouse pointer to the right. After getting used to this operation, you can greatly reduce the operation steps and quickly apply the drawing ability

(7) **MDC Mode**:

Open this function, select the processing file in "Processing" - "Read Disk", and then send MDC data through the serial port (COM1)



Please refer to "MDC Serial Port Parameter Transmission Protocol" for specific receiving methods and parameter contents

14. HF Characteristics



In the design of HF software, it has already considered the interference and trouble of the human brain, such as the processing environment noise, the degree of humanmachine integration, and the amount of information received by the brain. The software interface is simple and clean, and the amount of information received by the human brain is kept in a state of minimal interference. In the case of one person, one machine, and one person with multiple machines, the processing is clear and the thinking is clear, which greatly ensures the correctness of the work.

According to years of research, it has been found that in the case of cluttered interface and too much information received in man-machine operation, coupled with the interference of environmental noise, it will greatly increase the operator's irritability and the occurrence of misoperation. Therefore, HF software not only has powerful functions of the software itself, but also takes "maximum reduction of humanmachine irritability" as the focus in the design.

15. Necessity of G Code Conversion

The G code generated by each mechanical system has an international standard format, but also has extended codes dedicated to functions. Therefore, the use of G code conversion and identification between WEDM and other systems is not the best choice. At the same time, because the G-code is only an optimized and concise content of the original data, as a clear image is zoomed out and then zoomed in, it will become a blurred image. Therefore, it is recommended to use the original DXF file for post-processing in the HF system. If there are truncations that cannot be processed by CAD and other software, it can also be processed in the HF system and post-generated G code.

16. G Code Text Remarks

HF software G code can add Chinese or English text as remarks.

There are three specific methods of use:

(1) Add "two spaces" and a ' symbol after the valid G code data, and the remark content after the ' symbol, supports Chinese and English remarks. And can only be added after valid G code data.

For example, the content of a G code is:

N0016 G03 X -19.8910 Y -1.5903 I -21.8200 J 0.0000

After adding a note:

N0016 G03 X -19.8910 Y -1.5903 I -21.8200 J 0.0000 'G03Movement track

(2) Remarks for M1* method

Add directly in the row before a valid G code data content

N0016 G03 X -19.8910 Y -1.5903 I -21.8200 J 0.0000

become

M12 'Start the second graphic cut
N0016 G03 X -19.8910 Y -1.5903 I -21.8200 J 0.0000
(3) Add complete remarks in a row after the end of the whole G code
N0991 M02
become
N0991 M02
'This workpiece is A203 workpiece
'Cutting 1 and repairing 2
......

The remarks of the G code can be generated by software such as UG and the format of the remarks can be customized, or the number of N sorting can be automatically adjusted after adding the remarks through software such as UG, so as to distinguish the segment number at work.

The G code after adding remarks can be displayed in full when "Process" is paused -"CHEC" - "Dip.list", but it should be noted that the remarks added after valid G code data in real-time processing may not be due to the length. display, but it can be effectively displayed by the remark method of M1*..

17. Hardware and Access Methods

1. The difference between ISA and PCI



ISA control card (It is divided into two kinds of ISA cards: stepping motor and servo

motor.)



PCI control card (stepper motor card. 25 pins, 15 holes, insert into motherboard white slot)

2.Electronic handwheel and electronic handwheel capture card

HF electronic handwheel capture card wiring instructions

This acquisition card is equipped with "Siemens CNC system YF003 electronic handwheel", power supply: DC5V \pm 5%; pulse output: 100PPR; electronic handwheel plug is 232-15 holes. defined as:

Pins	Signal	Project	Links (pin)
------	--------	---------	---------------

1	+5V	Encoder	1
2	0V GND		2
14	А		14
15	В		15
	OFF		
7	Х	axis selection	7
8	Y		8
9	U (Z)		9
3	V (4)		3
10	*1	Magnification	10
11	*10		11
12	*100		12
13	СОМ	Common	13

Users can also select according to the output voltage value (DC5V) and output pulse wave (100PPR).



Note: the capture card (input) 232-15 socket (pin) is inserted into the computer serial port

Electronic handwheel (output) 232-15 plug (hole)

HF electronic handwheel capture card function needs to be used in HFV9.0 series

version.

(1) Electronic handwheel



Product Standards:

4 gears (X , Y , Z , 4) , 3 gear multiples (X1 , X10 , X100)

Transmission standard:CNC machine tools, CNC machining centers

(2) Electronic handwheel acquisition card



Access method:

The electronic handwheel terminal (15-pin) is connected to the electronic handwheel

capture card port (15-pin).

The electronic handwheel capture card is connected to the pulse round line.

The end of the electronic handwheel capture card (9 pins) is connected to the computer serial port.

Set the serial port COM1 or COM2 in the "electronic handwheel" of the HF software.

18. Knowledge of Interrupting Process Control Stability

(1) The importance of interruptions to machining:

Interrupt (IRQ) control plays a very important role in sending and tracking industrial process data. For example, in the WINDOWS system, the interrupt number (IRQ) of the hardware is not only assigned to the only hardware device, but also to the motherboard device and other plug-in hardware. Therefore, in actual processing, WINDOWS and LINUX will automatically be in the middle of the device with the same interrupt number (IRQ). Loop detection and judgment response, which will also cause the control card data transmission during processing to stop instantaneously and cause data transmission and reception to be lost. In the whole processing time period, WINDOWS and LINUX will perform the above detection for countless times, the loss of processing data will accumulate and eventually lead to the loss of workpiece accuracy, and the processing time will also be prolonged due to the accumulation of instantaneous pause time. At the same time, if other devices on the motherboard and other plug-in hardware with the same interrupt number as the control card cannot respond in time in the loop detection of WINDOWS and LINUX due to system and hardware problems, it will lead to more serious processing short-circuit, data loss and delay problems. Therefore, the interruption of industrial control is particularly important for processing.

(2) Why is the bottom interrupt control excellent :

Based on the uniqueness of the industrial control interrupt of the bottom layer interrupt, the bottom layer system has no cycle detection and time waste for the interrupt (IRQ), so the bottom layer control has no interruption effect of the above contents of WINDOWS and LINUX. The industrial control of low-level interrupts does not require WINDOWS and LINUX to require CPU multi-threading to wait for a response, and there is no CPU computing power waste of various kernel programs of WINDOWS and LINUX, and there is no hardware internal lock that Windows and LINUX increasingly lock without driver visa.

WINDOWS, LINUX cannot guarantee the uniqueness of work because of multithreaded waiting for response.

How the hardware works:

Forward flow: software \rightarrow operating system \rightarrow main board \rightarrow control card \rightarrow machine tool

Reverse flow: machine tool \rightarrow control card \rightarrow motherboard \rightarrow operating system \rightarrow software

Therefore, we will find that the operating system has absolute control rights in the entire control process, and all control rights (RING0, RING1, RING2, RING3) need to be granted by the operating system. The underlying control all have the highest level of RING0, and there are no problems such as WINDOWS, LINUX interrupts, threads, wasted computing power, kernel control, bloated resources, hardware visas, etc.

(3) Aerospace Operating System:

Aerospace adopts the low-level control method, and each receiving and running directly runs the software directly through the highest authority (RING0) without any

waste, without the interference of other runtime libraries and programs in memory, thus ensuring real-time, accurate, and extremely low error rate S-level Require. S-level requirements ensure the uniqueness of work, no other interference in the linear process of sending, processing, and receiving, ensuring the integrity and rigor of the entire process.

(4) HF software adopts bottom control:

In terms of ensuring stability and machining accuracy, HF software uses S-level control mode to ensure direct communication between hardware and software, and abandons all the bad performances brought by WINDOWS and LINUX. The S-level control mode has no memory runtime library and program interference, which ensures the professionalism and uniqueness of the work, and also ensures the rigor and stability of the linear process processing. HF software uses the underlying S-level control, self-fault-tolerant software operation and CPU floating-point calculation, supports single-core and multi-core 32/64-bit high-frequency CPU, supports all hard disks (including electronic hard disks, HD, SATA, solid-state), and supports all capacities of memory (including 4-36G memory), support wireless mouse and keyboard (requires host bottom support). Use ISA-USB or PCI-USB card to seamlessly connect all USB devices at the bottom, plug and play using the read and storage capabilities of USB devices.

19. HF WEDM Installation Instructions

V9 / x9 dongle is only suitable for V9 / x9 series software upgrade. Do not upgrade across versions for low version dongles

If this machine has run other versions, please restart the computer before installing (upgrading) the software or restart the computer in time after installation

When installing HF control card or other hardware devices on the motherboard, please power

off and plug

Bottom:	Boot directly into the HF software
Desktop:	Desktop shortcut key to enter
dual system:	There is a system selection menu at boot

Please determine your software method according to the above content:

Bottom installation:

Decompress the downloaded underlying software package to obtain GHO files for subsequent use.

If the partition content has been completed, just jump to 2 to complete the installation

at one time.

WINPE startup of USB flash disk (non HF-USB card port)

1. Using partition software (such as Diskgenius/AOMEI Partition Assistant, etc.), select the

hard disk for "quick partition"

For example, do quick partition by AOMEI:

Quick Partition				×
Select Disk: Disk1 (1.82TB) Partition Count 3 Partitions 4 Partitions 5 Partitions 7 2 Partitions Tips: You can press "1, 2, 3, 4, 5, 6, 7, 8 or 9" key to quickly select partition count. Disk Type MBR GPT Rebuild MBR Align Partitions: 2048 Sectors Derained count	1: ⓐ 20 2: ⓐ 20 3: ⓐ 20 4: ⓐ 20 5: ⓐ 1783 Default	GB FAT32 ▼ GB FAT32 ▼ GB FAT32 ▼ GB FAT32 ▼ GB NTFS ▼ tSize	Label: System Label: Software Label: Docs Label: Fun Label: Others Clear All Labels	Primary Primary Primary Primary Primary Primary
Disk 1 Basic MBR E: S F: S G: . 1.82TB 20 Warnings: After performing, all the existing partit Directly enter into "Quick Partition" window ne Preset	H: 20	I: Others 1.74TB NTFS disk will be deleted. u run the software	. Press "Enter" to start [Start Partitioning]	partitioning.

Keep the partition table type "MBR", select "FAT32" for the first partition, and the capacity is "20G". The default is the main partition.

Other partition forms can be set arbitrarily or not, it is recommended to select "FAT32"

for the second partition.

2.Use WINPE built-in GHO restore tool

	94 L				E.		
などのない。そのためのであり、	Syma	antec Ghost 1	1.0.2	Copyrigh	.1 (0)	3) 1998-2007 Symantee Corporation. All rights reserved.	
	Symanteo	Local Peer to peer GhostCast Options Help Quit	Action	<u>D</u> isk <u>Partition</u> <u>C</u> heck	Partition	To <u>P</u> artition To <u>Image</u> From Image	
						Symantec.	
						чыс цария рай у чыс цария рай у чыс дария рай у чыс дария рай дария. 	

The selection order is: Local - Partition - From Image

10	Symantee Ghost 11.0.2 Copyright (C) 1998-2007 Symantee Corporation. All rights reserved.	Ň
1977 1977	Image file name to restore from	
	Look in:	
	Name Size Date	
	н н роснос. GHO 61,986,652	
圈	File name: Open	
	Files of type: *.6H0 Cancel	100.00
	Current path is	

Select the local GHO file (HF bottom GHO)

Part	Туре	ID	Description	Label	Size	Data Size
1	Primary	00	Fat32	HF	20491	81
				Total	20491	81
		<u>0</u> K		Cance	2	
	1	1 Primary	1 Primary Oc	1 Primary Oc Fat32	1 Primary Oc Fat32 HF Total	1 Primary Oc Fat32 HF 20491 Total 20491

After selecting the hard disk, restore the GHO image to the C area.

After a few seconds, restart the computer and start the HF wire cutting system. If you need to enter the system code for the first time, please dial 023-68218121 for voice access.

(The bottom HF WEDM has built-in USB hot-plug function. After the motherboard is inserted into the ISA/PCI-USB card, it can be plugged and played in HF after restarting.)

Desktop installation:

- 1. Confirm that the WINME/98SE system has been installed.
- Note for version upgrade: If the computer has run the HF software, please restart the computer and perform the following steps to avoid the conflict between the old and new drivers and cause the HF hardware to be damaged.
- 3. Copy the downloaded and decompressed "FHGD-E.EXE" (for English version or

FHGD-C.EXE for Chinese version) and "Quick Install" (or SETUP) to any location on the HF work computer.

- 4. Click "Quick Install" (or SETUP) and press any key to confirm, HF will start the automatic installation, a prompt will appear when the installation is complete, and a shortcut will be created on the desktop.
- 5. Restart the computer.
- 6. Click on the desktop "HF driver installation" (only required for the first installation) to check whether the device is complete, if "INSTALL OK" is displayed, it means the hardware is complete, and if it is other, it means the hardware is missing.
- Click the "HF90" shortcut to enter the HF software (only need to run "HF90" for daily work). Refer to" HF software system parameter setting".

Dual system (or bottom layer) HF software upgrade:

First make sure that the decompression computer is installed with decompression software (WINRAR/WINZIP/360ZIP,etc.)

Unzip the official software package

Right-click on FHGD-E.EXE (for English version or FHGD-C.EXE for Chinese version) and select "Extract to FHGD-E\ (E)"(or "Extract to FHGD-C\ (E)")



Enter the FHGD-E directory (or the FHGD-C directory), copy all of them, paste them into the HF software directory of the HF work computer (default is C:\HF90), and choose to overwrite all when pasting.

Restart the HF work computer, the new software will appear soon.

Dual system installation method :

(1) USB WINPE boot, select "DiskGenius".

G DiskGenius V4.9.6.564 免疫反体室対 文件(E) 硬盘(D) 分区(P) 工具(I) 查君 (保存更改 搜索分区 恢复文件 快速分区	PE版 (Y) 帮助(H) 夏 夕 前建分区 格式化 删除分	区 备份分区	数据罢	失	怎	办	Di	əkGenit	」。团F	人为宠 : 4000	₩ % 1 18:400-00 089958(5	 89958 略话同号)
× 硬盘 0 22 (活 20.006	WIN10(Dr NTFS 223.0GB)							GHOST NTE 222.7	(E:) S 'GB		
∐接口:ATA 型号:WDCWD5000AADS-00S9B0	序列号:WD-WCAV9A281370	谷重:465.8GB	(476940MB)	在面裂	:1327137	極头数	:46 🛱	知道扇区数:	16 忌!	扇区数:	976773168	
×	分区参数 浏览文件											
E E HUU: TUCTUS000AADS-00S9B0 (卷标	序号(状态)	文件系统	标识	起始柱面	磁头	扇区	终止柱面	磁头	扇区	容量	
□ ■ 扩展分区	🥪 HF (C:)	0	FAT32	00	2	36	1	57021	9	16	20. OGB	
	- 📰 扩展分区	1	EXTEND	OF	57021	10	1	1327137	17	16	445.8GB	
🕀 🥪 GHOST (E :)	🧼 TIN10 (D:)	4	NTFS	07	57024	0	1	692441	1	16	223. OGB	
	GHOST (E:)	5	NTFS	07	692443	38	1	1327137	17	16	222.7GB	
	接口类型: 型号: MDR签名:	WI	DCWD5000AAD	AT S-0059B B76ED05	A 序列号 0 分区表 7	: 类型:					WD-WCAV9A2	81370 MBR
	柱面数: 132713 磁头数: 44 毎道周区数: 11 息容量: 465.66 息周区数: 97677316 时加周区数: 33					37 45 15 急字节数: 50010768201 68 履区大小: 512 Byte 336 物理扇区大小: 512 Byte					82016 Bytes Bytes	
	S.M.A.R.T. 信息: 温度: 道电时间: 传输镜式: 标语: 文持的功能: 文持的功能: 详错	ATJ S. f	20 SATA/3 A8-ACS M. A. R. T. , A	26 486 小日 00 AM, 481	C 缓冲区 す 通电次 it LBA, NC	大小: 数: 19					327	57 KB 2673
 ▲ ▶ 就绪 秒 开始 ② ⑤ DiskGenius V4.9.6.564 												数字

(2) Select the hard disk that needs to be executed, and select "快速分区(quick

partition)"。Such as AOMEI.

C DiskGenius V4.9.6.564 免疫 文件(E) 硬盘(E) 分区(E) 工			 BSRM
*	WIN10(D:) WIN10(D:	GHOST(E:) BO(465C6) ● ●	13168 1008 908 1008 2008 2008 2008 2008 2108
▲ 款緒 愛一評類 () © DiskGenius V4	注意:此功能执行后,当前磁盘上的现有 保存为默认设置	分区将被删除。新分区将会被快速格式化。 	32767 135 2673

Partition table type:MBR

Partition counts: 3

Advanced settings :

- 1: FAT32 20G
- 2 : NTFS ****
- 3 : NTFS ****

After the configuration is complete, "OK", the automatic partitioning will start.

After completing the partition, copy SYS.GHO and WIN10X32.GHO to the E area, which

will improve the speed of system recovery for subsequent operations. You can also

operate by selecting the corresponding file on the USB driver, but the speed is

relatively slow.

(3) Select "U 启动 PE 装机工具(USB start PE installation tool)" on the desktop, and select the same function tool in other WINPE. Select "还原分区(Restore Partition)"

· 还原分 Restor	区 (R) Te Part	日 日 B C 省 ition	аскир Ра 行份分区 (Gho	st)	○ 备份分区	(Imagex)
映像又作 E:\HFC	FIGAL:	3HO *.	GHO pat	h		浏览 (B)
分区	编号		格式		可用空间	分区容量
Solution C:	1:1	活动	MBR	HF	19.9 GB	20 GB
D:	1:2	WIN10	MBR	WIN10	210.8 GB	223 GB
⊰⊋ E:	1:3		MBR	GHOST	204.1 GB	222.7 GB
						Canalo
					ОК	Cancie
高级(<u>A</u>)				确定(Y)	关闭(C)

Select partition C, browse SYS.GHO, and confirm to execute.

└ #1	Windows	10 专业版 [9	9.05 GB]		•	浏览(B)
	编号		格式		可用空间	
- C:	1:1	活动	MBR	HF	19.9 GB	20 GB
D:	1:2	WIN10	MBR	WIN10	210.8 GB	223 GB
E:	1:3		MBR	GHOST	204.1 GB	222.7 GB
, E:	1:3		MBR	GHOST	204.1 GB	222.7 GB

Select partition D, browse WIN10X32.GHO, and confirm to execute. This operation is

the same as the previous step.

UQiDong (DneKey Ghost							
2	Confirm whether to perform the restore operation 程序将执行还原操作,您确定吗?							
~	还原分区: D: 分区编号: 1:2							
✓添加引导: C: C推荐] ▼ 「注入NVMe驱动(WIN7) Add Boot: C [recommended])								
	🔲 注入USB3.0强器	氻(WIN7)	🔲 注入指定驯	病				
			YES	NO				
高級	\$ (<u>A</u>)		确定([)	关闭(C)				

Select partition D, browse WIN10X32.GHO, and the above interface will appear after

confirming the execution. View parameters "√添加引导: C【推荐】(Add Boot: C [recommended])" , OK。

Automatically restart the computer after the two GHO restores are completed or manually restart the computer.

(4) Restarting the computer will automatically enter the WIN10 system.

Install EasyBCD, run EasyBCD, select "Add New Entry", type "Windows 95/98/me", the default name "Microsoft Windows 9x" can be changed to "HF WEDM", then execute "Add Entry".

Select "Edit Boot Menu", modify "Count down" to the required menu selection time, and save the settings. As shown below

🍜 EasyBCD 2.3 - Community	Edition - NeoSmart Technologies 📃 💷 💌						
<u>F</u> ile <u>T</u> ools <u>H</u> elp							
EasyBCD Toolbox	Modify Menu Entries						
View Settings	🛧 Up 🚽 Down 🧃 Rename 😆 Delete						
Edit Boot Menu	Entry Default Microsoft Windows Ves HF WEDM No						
Add New Entry							
Advanced Settings							
BCD Backup/Repair	Menu Options						
BCD Deployment	Locale: Chinese (China)						
Useful Utilities	 Skip the boot menu Count down from 5 						
	Count down from Solution Wait for user selection Save Settings						

(5) Restart the computer, the dual system menu will appear.



At this point you can choose any system you want to start. Refer to" **HF software** system parameter setting".

Refer to "HF software system parameter setting" :

The contents to be set after entering the software are as follows

(1) Software main interface - " param。" - "Cautiousely Change Parm." - "Jump-

Line of control"

Exit	Program	Process	ess 4-A		Conf ig		Other	Informa.
1Detected USB Drive Letter2Box: Serial port3Default Path For R/W File4Cautiousely Changed Param.>5Program Right'Borde ESC6MDC Mode7EXIT					$\begin{array}{c} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 $	No D COM1 Radi Righ MDC	etection us,Motor,Sco t'Borde ESC Mode(OFF)	ope,Jump (OFF)
Work Card:PCI CARD				Wa	ork Pat	h E:N	TESTNEN	
HF SYSTEM FOR ISA&PCI CARD HF SOFT								

In case of PCI, no modification is required.

If it is an ISA card, please check the ISA card shadow jumper (9-13) and set the jumper

to the same position.

(2) PAPA:



Select - "Process" - "PAPA"

HI	' V9				PULSE - 4 + ON/OFF	
	1	Examine the time of short circuit	:	8(S)		
	2	The pure Cape postpones the time	:	No	Y	
	3	Step number of UNDO	:	200(Step)	Λ	
	4	Speed of UNDO	:	5(Step/S)		
	5	The Speed of NULL and MOVE and RESCT	:	200(Step/S)	Υ	
	6	Most guickly speed of MOVE and RESCT		300(Step/S)	1	
	7	CUT to End:Close machine and beep		Yes,Beep 5(S)		
	8	UNDO to End:Close machine and beep		Yes,Beep 5(S)	MOVE, CHEC, PARA EXIT,	
	9	CUT the hour the most quickly speed	:	2000(Step/S),(1)	READ NULL UNDO	
	A	Work piece thicknes (cal. effici. use)		40(mm)		
	В	Para. of Pulley	>>	(When 4-axes.)	*UBJECI RESCI BEDGE A	
	С	Para. of 4-axes	»	(Can't as on.)	+CUT B +ONE CONTIN	
	D	Other parameters	>>		-CUT -ONE STOP	
	0	EXIT			TIME=0# 0000.00.00	
NF	ME: E	XAMP2 2NC SEGM: 0		10:30:20 MODE: Pa	ura EFF.STEP/S ESC	

Set relevant contents, such as short-circuit measurement time, idle speed, machining

thickness and other parameters suitable for the machine tool.

HF V9				PULSE - 4 + ON/OFF
	CH	int:Can't as one's pl	eases modify)	
	1	XY-axes types :	5*10cp(1)	Х
	2	UV-axes types :	З*6ср	11
	3	XY-gear' compensa.:	0, 0(µm)	V
	4	X-plank'direction:	Not Verse	Y
	5	Y-plank'direction:	Not Verse	
	6	U-plank'direction:	Not Verse	MOVE, CHEC, PARA EXIT,
	7	V-plank'direction:	Not Verse	READ NULL UNDO
	0	EXIT		OBJECT RESCT CENTER
				CUT AONE CONTIN
NAME: E	XAMP2	2NC SEGM: Ø	10:30:49 MODE: Pa	ara EFF.STEP/S ESC

"Xyuv four axis parameter" selects the motor type, including whether the motor is

reversed.

After completing the above settings, exit the software and re-enter the software, and the settings will take effect.

HF software self-upgrade :

Please see the corresponding content in the front.

Bottom system :

Software Maintenance and Reset	Lightweight (SSD - extremely lightweight)
Software upgrade mode	3 (WINPE-GHO,self-upgrading,bottom GHO)
Software entry mode	Boot directly into
Software exit mode	Exit Auto Shutdown
Bottom GHO recovery	3 Second
Bottom self-upgrade	1-2 minute
Software stability	Stablize
Bottom interrupt	Excellent
Memory size	Unlimited
CPU	Unlimited
HDD	Unlimited
Mouse and keyboard	wireless, wired
USB hot plug	ISA-USB card (PCI-USB) support

18、HF Schematic Diagram of Control Card and Expansion Card

HF control card :



1、ISA type built-in card control circuit pin description

HF25 (hole)

- 1 XA (Direction signal): It can also be divided into subdivided direction dp, (high level reverse, low level forward); Servo+dp (forward rotation)
- 2 XB (Pulse signal): It can also be divided into subdivided pulse cp, (high-level not sent, low-level sent); Servo's dp (reverse)
- 3 XC (Unlocking/unlocking signal): It can also be divided into segmented offline, low-level offline, high-level locking, and servo as well
- 4 XD
- 5 XE
- 6 YA (Direction signal): It can also be divided into subdivided direction dp, (high level reverse, low level forward); Servo+dp (forward rotation)
- 7 YB (Pulse signal): It can also be divided into subdivided pulse cp, (high-level not sent, low-level sent); Servo's dp (reverse)
- 8 YC (Unlocking/unlocking signal): It can also be divided into segmented offline, low-level offline, high-level locking, and servo as well
- 9 YD
- 10 YE
- 11 12V-
- 12 PJD2
- 13 12V+
- 14 UA
- 15 UB
- 16 UC
- 17 VA
- 18 VB

19 VC

20 TK1 (TK0, TK1, TK2 for shutdown control. TK0,TK1 normally open contact. TK0,TK2 normally closed contact)

21 TKO

- 22 PJD1 (PJD0, PJD1, PJD2 for high frequency control. PJD0, PJD1 normally open contact. PJD0, PJD2 normally closed contact)
- 23 PJD0
- 24 PM- (PM+ , PM- for sampling voltage)
- 25 PM+

HF 9 (pin)

- 1 12V-
- 2 ZA
- 3 ZB
- 4 ZC
- 5 12V+
- 6
- 7 TK0
- 8 TK1
- 9 TK2

2、PCI type built-in card control circuit pin description

HF25 (hole)

- 1 XA (Direction signal): It can also be divided into subdivided direction dp, (high level reverse, low level forward); Servo+dp (forward rotation)
- 2 XB (Pulse signal): It can also be divided into subdivided pulse cp, (high-level not sent, low-level sent); Servo's dp (reverse)
- 3 XC (Unlocking/unlocking signal): It can also be divided into segmented offline, low-level offline, high-level locking, and servo as well
- 4 XD
- 5 XE
- 6 YA
- 7 YB
- 8 YC
- 9 YD
- 10 YE
- 11 12V-
- 12 PJD2
- 13 12V+
- 14 UA
- 15 UB
- 16 UC
- 17 VA
- 18 VB
- 19 VC

20 TK0

21 TK1 (TK0, TK1, TK2 for shutdown control. TK0, TK1 normally open contact. TK0, TK2 normally closed contact)

22 PJD1 (PJD0, PJD1, PJD2 for high frequency control. PJD0, PJD1 normally open contact. PJD0, PJD2 normally closed contact)

23 PJD0

24 PM- (PM+ , PM- for sampling voltage)

25 PM+

HF 15 (pin)

- 1 TKO
- 2 TK1*
- 3 TK2*

4 TK0* (TK0*, TK1*, TK2* for alarm control. TK0*,TK1* normally open contact. TK0*,TK2* normally closed contact)

- 5 ZB
- 6 ZA
- 7 ZC
- 8 12V-
- 9 TK2
- 10 TK1
- 11 12V+
- 12
- 13

14 PM-* (PM+* , PM-* for external sampling circuit)

Special note: <u>12V- cannot be shorted with PM-, the 12V power supply is</u> provided by an external device.

HF control card related instructions:

①Xa-Xe, Ya-Ye, Ua-Uc, Va-Vc are the output signals for controlling the stepping motor of each axis respectively, and Za-Zc is the function expansion output signal. When each channel is high, the output current can reach 15mA.

②12V+, 12V- are the 12V power input pins provided by external devices.

③TK0, TK1, TK2 are the three contacts of the shutdown control relay J2: TK0 and TK1 are normally open contacts, and TK0 and TK2 are normally closed contacts. Generally, it is not allowed to directly control the machine tool, and it needs to be isolated by an intermediate relay to prevent high voltage and large current from entering the built-in card. The other three contacts TK0*, TK1*, TK2* are used for shutdown alarm. TK0* and TK1* are normally open contacts, and TK0* and TK2* are normally closed contacts.

④PJD0, PJD1, PJD2 are the three contacts of the high-frequency control relay J1: PJD0 and PJD1 are normally open contacts, and PJD0 and PJD2 are normally closed contacts.
⑤PM- and PM+ are sampling voltages. During normal cutting, the voltage between both ends is between 4V and 6V. When aligning, when the molybdenum wire is not in contact with the workpiece, the voltage at both ends is about 0.6V (the output load resistance of the high-frequency pulse power supply is about 510 ohms). (Special reminder: 12V- can not be shorted with PM-, 12V power supply is provided by external equipment)
The computer sends control commands to the interface control circuit of the built-in card through the ISA or PCI bus, and controls the working status of each output interface

through the interface control circuit. The power supply of the equipment is isolated, effectively protecting the computer.

When designing the centering circuit, considering that the high-frequency pulse power supply has a resistance value after being integrated during the centering process, the output load resistance of the high-frequency pulse power supply is required to be more than 510 ohms. During the cutting process, the high-frequency control relay pulls in and releases when it stops, and uses a set of contacts to control the switching of the high-frequency power supply and the centering circuit. Because the 12V power supply of the centering circuit is provided by an external device, and PM- is connected to the triode through the contact point of J1 and a 100-ohm resistor. If it is short-circuited with 12V-, the device in the card will be damaged. (So to reiterate: 12V- cannot be shorted with PM-.)

HF expansion card :



HF tips :

(1) Different graphics and different cutting times can only be configured for 10 times of OCC configuration. If the number of times is greater than 10, you can use OCC to change the graphics in real time when cutting the graphics that need to adjust the cutting times after calling the G code after generating the same cutting times.

(2) The motor cannot respond to axis shifting or idling, or the axis is chattering, please select the corresponding motor type in "Process - "PARA" - "Para. Of XYUV 4-axis".

(*3*) The G00 setting can be selected through "Process" - "PARA" - "Other Parameters" - "G00 Protect/Auto + W", or can be set through "Process" - "SUB" - "G00 Protect| Au." (shortcut keys P, 5)

(4) Empty walk, electronic handwheel, processing In the actual test, please conduct the test according to the method of correct "+CUT", then "NULL, and then "ControlBox".

(5) Z axis does not move, please set the parameters of the processing interface other parameters - the fifth output port or Z axis parameters, and the common Z axis to "Z axis control guide wheel swing" and the corresponding axis type; Please set the Z-axis rotation to "Z-axis table or self-rotation" and the corresponding axis type.

(**6**) How to open the button side slide return? Please set the "Full Drawing Programming Right Touch Exit" to "ON" in the "System Settings". In the button selection menu of the full drawing programming branch column, right click the rightmost border to return to the main interface. This method can speed up the graphics rendering processing ability after being used habitually.

(7) Multiple identical figures need the same lead-in line. You can draw the lead-in

line of a certain figure first, and then use the "Batch lead-in line" box to select all the lead-in lines at one time.

(8) The gap compensation f value of multiple different figures is different (direction and size), and the "block change compensation f value" function can be used to achieve different f values of different figures.

(**9**) When the current value is unstable during processing, please check the hardware equipment of the high-frequency device.

(10) When drawing gears in CAXA, please set the accuracy to 0.001 and use "automatic merge sort" to optimize the line segments in the generated DXF file.
The above description is a simple introduction based on the current version, and the specific operation settings and procedures need to be mastered continuously during use. HF software has been continuously updated, developed and enhanced software professional functions and automatic processing. Please update this documentation to the latest version to obtain and view the latest introduction in time. At the same time, you can also upgrade to the latest software and view the function introduction by visiting the HF official website www.hgdsoft.com.



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Please verify the legality of genuine software and hardware during use to safeguard your legitimate

rights and interests.

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