

DIGITAL READOUT MANUAL

MODEL : **TECH-3*i***



Dear User:

Welcome to the use of TECH-3i DRO System, which is developed by Measurite Pte Ltd, the TECH-3i DRO System is widely used in milling machine, grinding machine, wire-cut, EDM and lathe, the functions can help us to improve efficiency, ease of operation, precise measurement and repeatability. It is now an absolute need to install them on your machine.

The Use of the DRO System, is easily understood by any user. You can use it without needing to finish reading the manual. You can use it very easily and is suitable for both new operator and skilled operator alike.

Safety precautions:

Open the box and remove it from the packing. Plug it with the power cable and test if the DRO powers up and the digit display correctly. It accepts power of 80Vac ~ 240Vac.

- ① When you open the box, check the physical appearance is in good condition, if you find something at fault, please contact the seller, be sure not to take dismantle it.
- ② The DRO used the alternating current of 110V~220V or 50Hz~60Hz, the electrical connector plugs pin is three core pin which has earth pin.
- ③ The user be sure not to repair it, the DRO has high-powered piezoelectricity, this could do some damage to people.
- ④ The chassis is made by ABS plastic, it can't be used in the high temperature.
- ⑤ When you do not use it, please turn off the electrical source. It can prolong the life-time of the product.
- ⑥ If the thunder storm comes, close the electrical source.

Routine Maintenance:

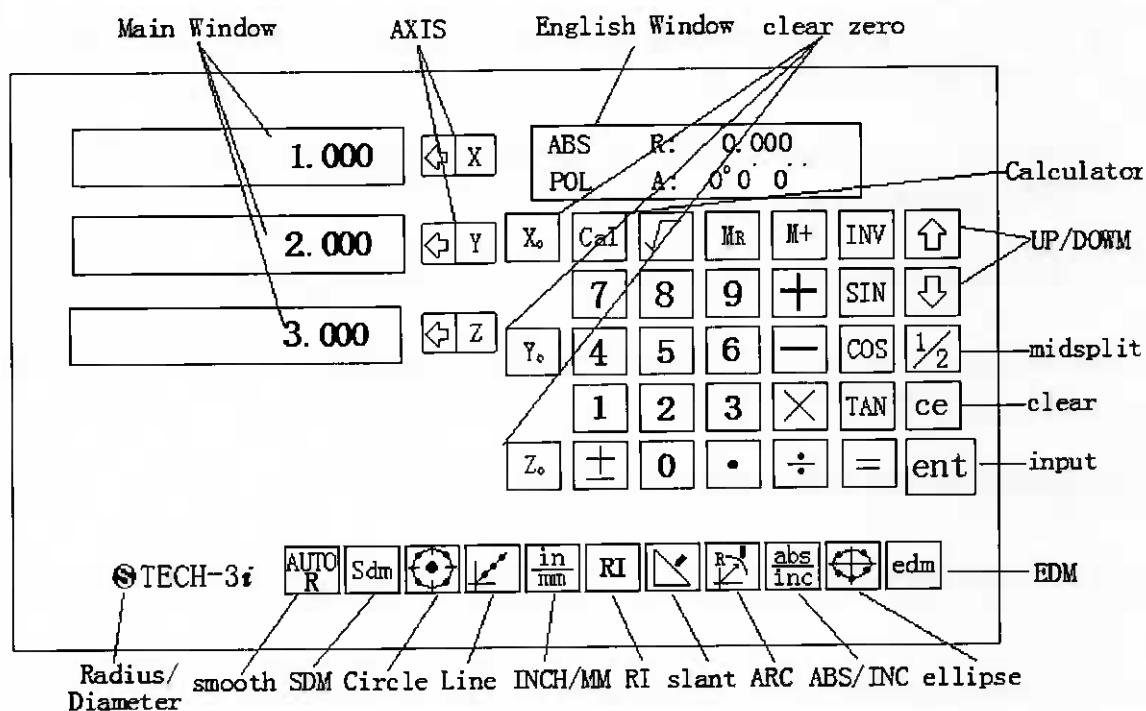
- ① When you are cleaning the DRO , please turn off the power.
- ② Use a dry cloth or brush clean the keyboard / rear panel of the DRO.
- ③ Do not clean the panel or keyboard by thinner or ethanol.
- ④ The rear of the casing can be cleaned by detergent.

Promises:

If there are some issue with the DRO operation or the malfunctions, you can contact Measurite Pte Ltd at www.measurite.com.sg / email : info@measurite.com.sg

The Note of the Pressed key

TECH-3i



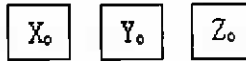
List

Function project.....	4
Cleared	5
input Coordinate.....	5
INCH/MM	5
ABS/INC	7
1/2	8
RI.....	8
Calculator.....	9
SDM(300 Group).....	9
Circle Hole.....	17
Ellipse Hole.....	21
Line Hole.....	25
Arc Hole.....	28
Smooth Arc	34
Slant	39
EDM	43
Basic parameters.....	45
Advanced Users.....	45
Trouble analyse and manage.....	47

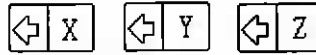
TECH-3i DRO, used high-tech component and PCB assembly technique, more function, operate easily, credibility durable. Please read the manual before operation of the machines.

一、Function item

1、Cleared



2、Input coordinate



3、INCH/MM



4、ABS/INC



5、1/2



6、RI



7、High user settings



8、Calculator



9、SDM



10、Circle-Hole



11、Ellipse-Hole



12、Line-Hole



13、ARC-Hole



14、Smooth



15、Slant



16、EDM



17、Power cut memory

二、nine core bnc connector jack and sense organ connect table

Feet size	1	2	3	4	5	6	7	8	9
Func tion	null	0v	null	null	null	signal	5V	signal	RI signal

X₀ Clear

Function: TECH-3i DRO, operator and clear the coordinate at any place

eg: press **X₀** → clear x
 press **Y₀** → clear y
 press **Z₀** → clear z

0.000	↵ X	ABS R: 0.000
0.000	↵ Y	POL A: 0°00'00"
0.000	↵ Z	X₀
		Y₀
		Z₀

↵ X input Coordinate

Function: TECH-3i chinese prompt the operator and set the workpiece place to any data.

e.g: set the X to 45.8mm

Press in turn **↵ X** **4** **5** **.** **8** **ent**

45.800	↵ X	ABS R: 45.800
0.000	↵ Y	POL A: 0°00'00"
0.000	↵ Z	X₀
		Y₀
		Z₀

(pour: when you input, the X data will glint)

$\frac{IN}{MM}$ INCH/MM

Function: TECH-3i english prompt it can make the data switch between the mm and inch

Now the mm is 25.400, the inch is 1.0000

Operation steps

e.g 1: now the data is in inch ,we change it to mm.

1.0000	← X	ABS R: 1.0000
0.0000	← Y	POL A: 0° 00' 00"
0.0000	← Z	X ₀
		Y ₀
		Z ₀

press

IN
MM

25.400	← X	ABS R: 25.400
0.000	← Y	POL A: 0° 00' 00"
0.000	← Z	X ₀
		Y ₀
		Z ₀

e.g 2: now the data is in mm ,we change it to inch.

25.400	← X	ABS R: 25.400
0.000	← Y	POL A: 0° 00' 00"
0.000	← Z	X ₀
		Y ₀
		Z ₀

press

IN
MM

1.0000	← X	ABS R: 1.0000
0.0000	← Y	POL A: 0° 00' 00"
0.0000	← Z	X ₀
		Y ₀
		Z ₀

(Attention: at ABS/INC, SDM it can be switched also)



ABS/INC

function: TECH-3i english prompt the dataview table provide two coordinate,they are ABS and INC.

- 1、The operator can memory the RI to ABS,and switch to INC for operationg..
- 2、Clear the INC coordinate at any place, the 1/2 can not affect the ABS coordinate.
- 3、at ABS coordinate the absolut value can autosave,and the operator can see it at any time.

Operation steps

e.g1: Switch the ABS to INC

0.000	↩ X	ABS R: 0.000
0.000	↩ Y	POL A: 0°00'00"
0.000	↩ Z	X ₀
		Y ₀
		Z ₀

press

0.000	↩ X	INC R: 0.000
0.000	↩ Y	POL A: 0°00'00"
0.000	↩ Z	X ₀
		Y ₀
		Z ₀

Operation steps

e.g2:Switch the INC to ABS

press

0.000	↩ X	ABS R: 0.000
0.000	↩ Y	POL A: 0°00'00"
0.000	↩ Z	X ₀
		Y ₀
		Z ₀



Operation steps

make the X to another side → press $\boxed{\frac{1}{2}}$ → press $\boxed{\leftarrow} \boxed{X}$ operate
 RI → press $\boxed{\text{ABS}} \boxed{\text{INC}}$ → move the machine tool to RI

$\boxed{\frac{1}{2}}$ midsplit autoly

Function: TECH-3i chinese prompt at currently data press $\boxed{\frac{1}{2}}$ and move the machine tool to Zero.

e.g: e set the X zero to the middle of the machine tool.

1. move the machine tool to one side ,press $\boxed{X_0}$
2. move the machine tool to another side,press $\boxed{\frac{1}{2}}$, and press $\boxed{\leftarrow} \boxed{X}$
3. move the machine tool to "0.000"

$\boxed{\text{RI}}$ (Find RI)

Function: TECH-3i chinese prompt set the size of Zero and RI

e.g: example for X

1. Clear the X at ABS. press $\boxed{X_0}$
2. press $\boxed{\text{RI}}$ → $\boxed{\leftarrow} \boxed{X}$
3. move the machine tool when it come by the RI

When power off,if you move the operation table,you can find the RI by the RI function when you open it next time

Press $\boxed{\text{RI}}$ → $\boxed{\leftarrow} \boxed{X}$. move the machine table when it come by RI,the function window view $\boxed{\text{OK} \cdots \cdots}$ and beep for "du-du".move the machine tool to "0.000" .

CAL Calculator

At everyday process, the most tool is calculator besides workpiece.

The Calculator of the TECH-3i provide the function for add, minus, multiply, divide and some function ,contains Sin 、Cos、 TAN.etc.

The Calculator function can move the result to the axis which you need to operate it, the operator just need move the machine tool to zero. the place is you needed.

For example: $123+76=199$ $6 \times 35=210$

Press 1 2 3 + 7 6 =

6 × 3 5 =

attention: 1. if you input error press //CE to cancel

2. when you finished press ↵X , the result move to X

3. at calculator press ↵X move the data of X to calculator

SDM 300 Group

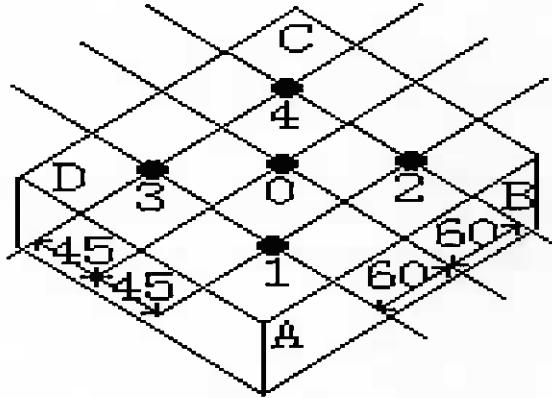
TECH-3i chinese prompt the dataview table provide three coordinates: ABS、INC、SDM (SDM0-SDM299). 300 Group user coordinate can use to assistant zero in operating. ABS is absolutent coordinate. it's established at the begin, it used to be the datum mark of processing workpiece. the SDM is defined relative to absolutent coordinate..

operation steps

like pic, the origin of the ABS is in the center of the workpiece, there are

two methods to set.

- ① To place clear zero
- ② Coordinate input



e.g 1: To place clear zero

set the workpiece zero to ABS zero. move the machine tool to SDM begin place and clear zero, when operating without reference to ABS or SDM, move the workpiece to "0.000".

Steps:

- (1) Follow the methods of the midsplit autoly, set the ABS begin to the rectangle centre, AB neat to the X.

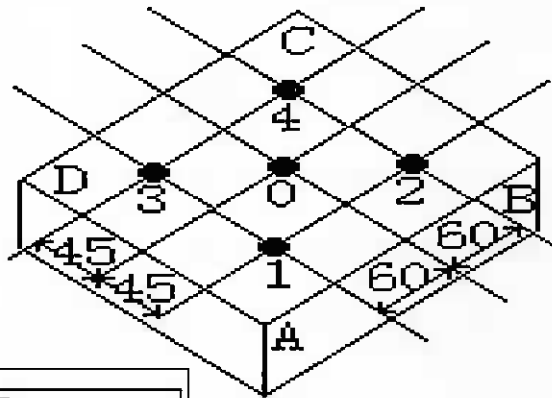
AD neat to Y, aim at 0, ABS, X, Y clear near.

Sdm0 X, Y Clear Zero

Sdm1 X, Y Clear Zero

Sdm2 X, Y Clear Zero

Sdm3 X, Y Clear Zero



0.000	↩	X	ABS	R: 0.000
0.000	↩	Y	POL	A: 0° 00' 00"
0.000	↩	Z	X ₀	
			Y ₀	
			Z ₀	

operation steps

- (1) Set the first point SDM ,enter the SDM coordinate, Clear X, Clear Y, move the machine tool to the first point. like pic.

- 60.000	← X	SDM multi-group No. 0 Total: 300
45.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

press X₀ Y₀

0.000	← X	SDM multi-group No. 0 Total: 300
0.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

- (2) Set the first point SDM1 ,enter the SDM1 coordinate, Clear X, Clear Y, move the machine tool to the second point. like pic.

60.000	← X	SDM multi-group No. 1 Total: 300
45.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

press X₀ Y₀

0.000	← X	SDM multi-group No. 1 Total: 300
0.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

Operation Steps

- (3) Set the first point SDM2 ,enter the SDM2 coordinate, Clear X, Clear Y, move the machine tool to the third point. like pic.

— 60.000	↩ X	SDM multi-group No. 2 Total: 300
— 45.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀

press X₀ Y₀

0.000	↩ X	SDM multi-group No. 2 Total: 300
0.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀

- (4) Set the first point SDM3 ,enter the SDM3 coordinate, Clear X, Clear Y, move the machine tool to the fourth point. like pic.

60.000	↩ X	SDM multi-group No. 3 Total: 300
— 45.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀



press X₀ Y₀

0.000	↩ X	SDM multi-group No. 3 Total: 300
0.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀

Operation Steps

(5) Process workpiece according to the coordinate

(6) Process workpiece which is the same to the previous workpiece, just set the ABS zero at "0.000", the SDM Zero have set

autoly, press   and move the machine tool to zero.



2. Preset the SDM coordinate.

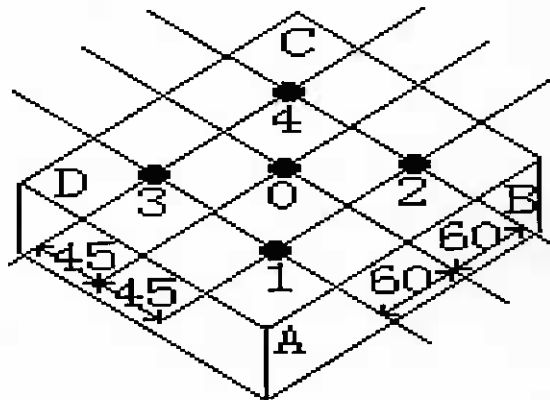
Use the method of preset zero, you needn't to move the machine tool, it can set the user's zero exactness and shortcut.







e.g: use the "0" mode input, like pic when the absoluteness coordinate is in zero, the 1 (60, -45), 2 (-60, -45), 3 (60, 45), 4 (-60, 45)

Operation steps

(1) In the ABS set the RI

Press  



0.000		X	ABS	R: 0.000
0.000		Y	POL	A: 0° 00' 00"
0.000		Z		
				
				

(2) Set the 1st zero, turn to the 1st zero SDM1.

press  →  → 

Operation Steps

0.000	↩ X	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">SDM multi-group No. 1 Total: 300</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">X₀</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Y₀</div> <div style="border: 1px solid black; padding: 2px;">Z₀</div>
0.000	↩ Y	
0.000	↩ Z	

(3) Input the 1st assistant zero coordinate straight

Press ↩ X → 6 0 → ent

press ↩ Y → 4 5 ± → ent

60.000	↩ X	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">SDM multi-group No. 1 Total: 300</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">X₀</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Y₀</div> <div style="border: 1px solid black; padding: 2px;">Z₀</div>
- 45.000	↩ Y	
0.000	↩ Z	

Set the 2nd zero,
turn to the 2nd zero SDM2.

0.000	↩ X	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">SDM multi-group No. 2 Total: 300</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">X₀</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Y₀</div> <div style="border: 1px solid black; padding: 2px;">Z₀</div>
0.000	↩ Y	
0.000	↩ Z	

press ↓

Input the 2nd assistant zero coordinate straight.

press ↩ X → 6 0 ± → ent

press ↩ Y → 4 5 ± → ent

Operation Steps

- 60.000	← X	SDM multi-group No. 2 Total: 300
- 45.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

Set the 3rd zero,
turn to the 3rd zero SDM3.

press ↓

0.000	← X	SDM multi-group No. 3 Total: 300
0.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

Input the 3rd assistant zero coordinate straight.

press ← X → 6 0 → ent

press ← Y → 4 5 → ent

60.000	← X	SDM multi-group No. 3 Total: 300
45.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

Set the 4th zero

press ↓

0.000	← X	SDM multi-group No. 4 Total: 300
0.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

Operation Steps

Input the 4th assistant zero coordinate straight

press \leftarrow X \rightarrow 6 0 \pm \rightarrow ent

press \leftarrow Y \rightarrow 4 5 \rightarrow ent

- 60.000	\leftarrow X	SDM multi-group No. 4 Total: 300 <div style="border: 1px solid black; padding: 2px; margin: 2px;">X₀</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">Y₀</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">Z₀</div>
45.000	\leftarrow Y	
0.000	\leftarrow Z	

When the four assistant zero have been set, operator can press

\downarrow to the assistant zero, and move the machine tool to zero,

it's the assistant zero, quit the SDM function, you can press

ABS
INC

Switch SDM input mode:

When the SDM mode is "0", the data input is fact data.

When the SDM mode is "1", the data input is reverse data.

Eg.1 press **S** \rightarrow press \downarrow

0.000	\leftarrow X	SDM input Mode mode 0 switching? <div style="border: 1px solid black; padding: 2px; margin: 2px;">X₀</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">Y₀</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">Z₀</div>
0.000	\leftarrow Y	
0.000	\leftarrow Z	



2 Press **ent** to select "0" mode or "1" mode, Press **CE** quit.


Operation Steps







SDM All clear away


The function is introduced: Eliminate consumer coordinate system SDM300 Group The plain is interposed, Eliminate the queen, SDMCoordinate system has to demonstrate value and ABS coordinate system has to demonstrate value equality.

Operation step:

1. Press  KeyEnter the fundamental parameter Press  Choice arrives at "Clear SDM multiunit coordinate"

Press 

0.000		X	<div style="border: 1px solid black; padding: 2px; font-size: 0.8em;">clear SDM axis Press UP or DOWN</div> <div style="margin-top: 10px; text-align: center;"></div> <div style="margin-top: 10px; text-align: center;"></div> <div style="margin-top: 10px; text-align: center;"></div>
0.000		Y	
0.000		Z	

2. When right window display "OVER", Press  for exit.



Circumference be allotted a hole

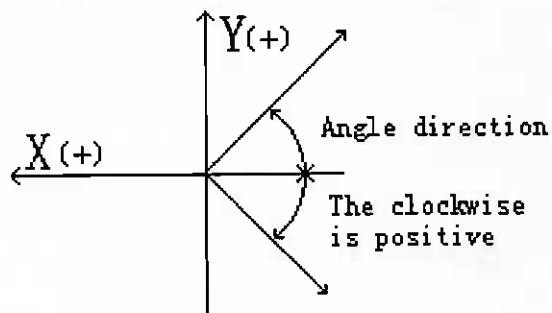
Function: TECH-3i The obvious form of number provides the convenient circumference halving hole function, Person requires operation to import

The circumference radius

The circumference initiation angle



The circumference termination angle

The halving hole number



TECH-3i English is pointed out

On the circumference the obvious form of number is calculated out just voluntarily, every divides the hole location from the middle . Every hole location is set up for zero, Person needs operation press

 or , Which and then the upper

hole choosing to the circumference, the machine tool working table is swayed to zero , is the location being a hole's turn.

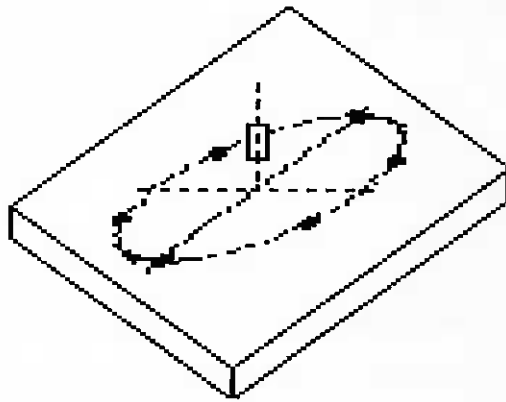
Operation Steps

eg. Radius: 30mm


Initiation angle: 30°

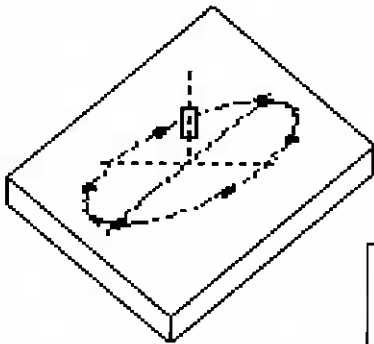
End an angle: 318°




Divide the hole number
from the middle: 6



Operation Steps:

1. the central point location $X=0, Y=0$, press  enter the circle split.



<input type="text"/>	 X	circle dispart Input Radius.....
50.000	 Y	
<input type="text"/>	 Z	
		<input type="text"/> X ₀
		<input type="text"/> Y ₀
		<input type="text"/> Z ₀

2. input the radius (R: 30)

press

Operation Steps

	← X	circle dispart Input Radius....
50.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

In the first place radius interposing

	← X	circle dispart Input Radius....
30.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

3. Import the initiation angle

press **3** **0** **ent**

	← X	circle dispart Input Incept Angle..
45.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

In the first place initiation angle interposing

	← X	circle dispart Input The End Angle
30.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

4. Import the termination angle

Press **3** **1** **8** **ent**

Operation Steps

	← X	circle dispart Input The End Angle
8.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

In the first place initiation angle interposing

	← X	circle dispart Input The Most NO..
318.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀


5. Import the maximal hole number (Hole number)

press **6** **ent**


	← X	circle dispart Input The Most NO..
5.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

In the first place Maximal hole number interposing

	← X	Circle bore Hole NO: 1
6.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Enter treating directly. If treating is finished, press  exit

attention:

1. Process the queen in entrance, Handle person press 

Operation Steps

which number holes queen to choosing , the machine tool working table being swayed arriving at is 0.000 Be the location owing a circumference a hole

- 2、 Import process middle, Y Axis scintillation that can not stay, Press , That the number displays a form is able to enter next step voluntarily
- 3、 If operation person requires that the halfway is temporary remove from "the circumference mark of hole " function, When returning to regular ABS state, X , Y , coordinate show, Press Withdraw from temporarily, Press return to circumference mark of hole state.



Ellipse be allotted a hole

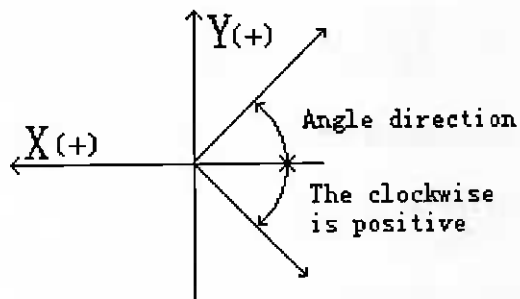
Function: TECH-3i The god of the earth who points out that the obvious form of number provides the convenient ellipse halving hole function , handles person requires English to import an ellipse

X , Y axis radius

Elliptic initiation angle

Elliptic termination angle

Elliptic maximal hole number



TECH-3i English mounts every halving hole location , every hole location is set up for zero to point out that the obvious form of number calculates out an ellipse just voluntarily, Person needs operation

Press or Which and then the upper hole choosing to the ellipse, the machine tool working table is swayed to zero , is the location being a hole's turn.

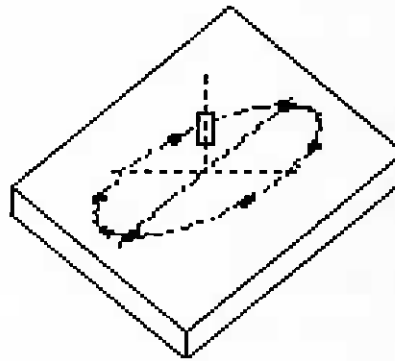
eg: X axis radius:20mm

Y axis radius: 30mm

Initiation angle: 0°

End an angle : 360°

The NO: 6




Operation Steps

Attention:

1. The central point location is $X=0$, $Y=0$
2. The halving hole hole number is that the angle divides till destination angle from starting point along the clockwise sense.
3. Think that the initiation angle is 00 , ending an angle is 3600 points , ought to be when importing the hole number $(N+1)$

Operation steps:

1. Fix position for zero first with workpiece centre location, then

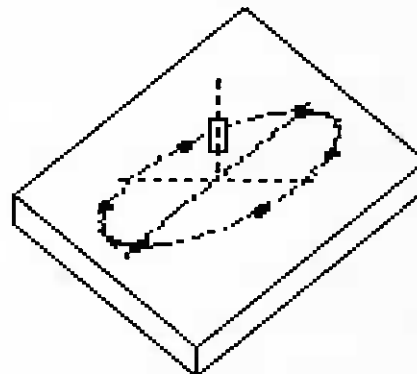
press  enter the ellipse mark of hole function




eg: X, Y axis radius: — 20, 30mm

Initiation angle: — 30°

End an angle: — 360°

The No: — 6



<input type="text"/>		X	Ellipse dispart Input X Radius..
10.000		Y	
<input type="text"/>		Z	
			<input type="text" value="X<sub>0</sub>"/>
			<input type="text" value="Y<sub>0</sub>"/>
			<input type="text" value="Z<sub>0</sub>"/>

Steps

2. Import the X axis radius (R: 20)

press **2** **0** **ent**

	↩ X	Ellipse dispart Input X Radius..
10.000	↩ Y	
	↩ Z	
		X ₀
		Y ₀
		Z ₀

In the first place radius interposing

	↩ X	Ellipse dispart Input Y Radius..
20.000	↩ Y	
	↩ Z	
		X ₀
		Y ₀
		Z ₀

by **3** **0** **ent**

	↩ X	Ellipse dispart Input Incept Angle..
30.000	↩ Y	
	↩ Z	
		X ₀
		Y ₀
		Z ₀

3. starting point of importation

by **0** **ent**

	↩ X	Ellipse dispart Input Incept Angle..
30.000	↩ Y	
	↩ Z	
		X ₀
		Y ₀
		Z ₀

The starting point of the original settings

<input type="text"/>	<input type="button" value="← X"/>	Ellipse dispart Input Incept Angle..
0.000	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X₀"/>
		<input type="text" value="Y₀"/>
		<input type="text" value="Z₀"/>

4, input termination perspective

by

Steps

<input type="text"/>	<input type="button" value="← X"/>	Ellipse dispart Input The End Angle
50.000	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X₀"/>
		<input type="text" value="Y₀"/>
		<input type="text" value="Z₀"/>

The termination point of the original settings

<input type="text"/>	<input type="button" value="← X"/>	Ellipse dispart Input The End Angle
360.000	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X₀"/>
		<input type="text" value="Y₀"/>
		<input type="text" value="Z₀"/>

5, the largest hole of input (number of holes)


<input type="text"/>	<input type="button" value="← X"/>	Ellipse dispart Input The Most NO..
5.000	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X₀"/>
		<input type="text" value="Y₀"/>
		<input type="text" value="Z₀"/>


The original settings, the biggest hole

Steps

- 17.320	← X	Ellipse bore Hole NO: 1
- 15.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Direct access to the processing, if the completion of the processing,

according to exit .

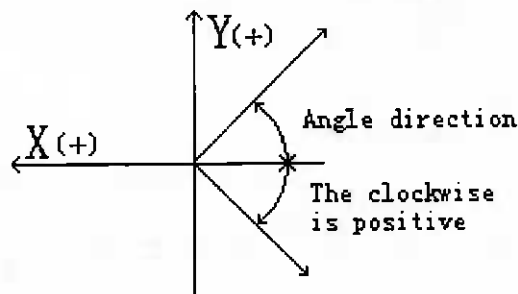
Note: 1, in the process, according to the operator of  choose the first few holes, it will shake the machine table coordinates 0.000 is the location of the elliptical holes.

2, the importation process, the Y-axis will be kept flashing at **ent** after a few tables will be automatically entered in the next step.

3, the operator need to temporarily withdraw from the middle of the "oval-hole" function, ABS returned to the normal state of X, Y, Z ride Superscript, according to temporarily withdraw from the **TAN**, and then return to the oval **TAN**-hole state.




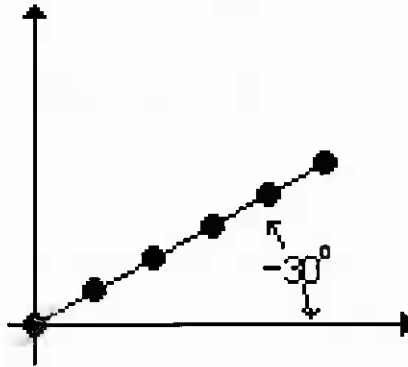
Area-Hole



Features: Chinese TECH-3i sub-slash provide tips for YX processing center in the same plane has been online, and uniform distribution of holes, the operator simply enter the following parameters slash length (first Kongyuan into our final hole center distance) slash angle

(referring to slash X-axis and the angle between the direction of) a few holes in the input parameters after a few tables will be automatically calculated slash the location of the hole, the operator

according to  choose holes, and then shaken to the workpiece X-axis is 0.000, 0.000 Y axis position is the location of the hole



Example: For the diagram shows the workpiece, parameter setting is as follows


Area Length: 150 mm

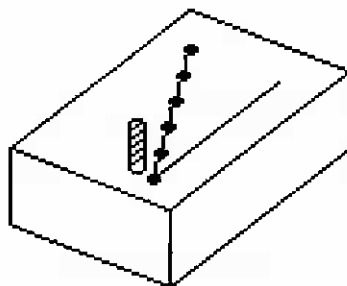
Area angle: -300




Hole: 6

Steps:

1, turning tools at the first hole slash the first point, and then

click to enter a slash--functional



<input type="text"/>	 X	Line Dispart
60.000	 Y	Input Line length.
<input type="text"/>	 Z	<input type="text" value="X₀"/>
		<input type="text" value="Y₀"/>
		<input type="text" value="Z₀"/>

2, the length of input Area
Main window Y-axis settings of the original slash length

Followed by **1** **5** **0** **ent**

	← X	Line Dispart Input Line length.
20.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Slash the length of the original settings

	← X	Line Dispart Input Line length.
150.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

3, enter a slash perspective

Deputy window display "Please enter a slash perspective" Y window

showed that the last set of slash followed by **3** **0** **±** **ent**

Steps

	← X	Line Dispart Input Line Angle
20.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

The original settings slash perspective



	← X	Line Dispart Input The Most NO.
5.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀


4, the importation of several slash-hole

Deputy window display "Please enter the biggest hole," Y window

display set up at the last few holes, followed by **6** **ent** began processing

0.000	← X	Line bore HOLE NO: 1
0.000	← Y	
0.000	← Z	
		X ₀
		Y ₀
		Z ₀

5, by  or  button, select the machining holes, and then shaken to the X-axis machine tool table, Y-axis display the "0.000" on the location of the points in the hole

Note: The completion of processing  to return to normal by the state showed that in the slash-hole course, the operator can

temporarily leave the **TAN** by the function returned to normal X, Y, Z coordinates, and then return to the slash-**TAN**-functional.











Arc processing

Features: TECH-3i Chinese few tips in simple arc processing system, a copper mold of single pieces, such as processing, Universal Milling Machine can easily and quickly processed by the control of the same arc cutting each controlling a smooth arc, cutting of the less smooth processing of the arc, cutting the greater the volume, processing more rough arc, The shorter processing time.

A: processing XZ and YZ plane

Arc processing XZ and YZ have eight kinds of processing methods, as shown in Fig.

SIMPLE R MACHINING MODE				TYPE-8
1	2	3	4	
				
5	6	7	8	
				

Can be used in the processing of flat-bottomed cutter or circular cutter processing in the use of flat-bottom arc, as a knife from the diameter of 0.000

B: XY plane processing

In the XY plane processing, it is like eight processing, and processing of the vertical tool, and a way for each quarter

Circular arc for the processing and processing; Therefore, in processing XY plane, it is necessary to choose knife compensation, processing XY plane, it is flat-ended knife or knives, according to the actual value set tools diameter.

Arc processing parameters need to enter the following

Processing of choice

Select processing mode

Inner / outer arc processing options (XY-specific)

To be processed Radius

Tool diameter

Length of each processing

Example 1: To processing as shown arc AB 90°, from point A to start processing, the end point B, parameter settings are as follows:

Processing side: XY

R processing mode: 3

Processing of Arc

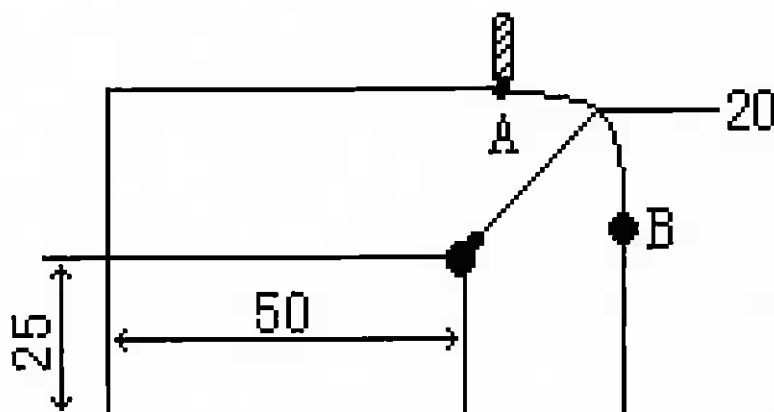
Radius: 20 mm

Tool diameter: 6 mm

Feed: 0.5 mm


Steps:

- 1, rocking machine worktable, turning tools at point A, X axis cleared
- 2, entered the arc processing



Steps



	← X	Circle arc setup Choose Plane XZ
	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Arc entered by  processing


	← X	Circle arc setup Choose Plane XZ
	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

The original settings plane processing


3, the processing of choice

4, followed by  X  select XY plane into the selection process model

	← X	Circle arc setup Choose Plane XY
	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Note: XY plane by  X options

YZ plane by  Y choice

XZ plane by  Z choice (on the two-axis X-axis choice XZ plane)

Steps

5, processing
choice type

<input type="text"/>	↩ X	Circle arc setup process mode 1-8
<input type="text" value="2"/>	↩ Y	
<input type="text"/>	↩ Z	
		X ₀
		Y ₀
		Z ₀

The original processing mode

6, select inner / outer
arc processing

<input type="text"/>	↩ X	Circle arc setup process mode 1-8
<input type="text" value="3"/>	↩ Y	
<input type="text"/>	↩ Z	
		X ₀
		Y ₀
		Z ₀

<input type="text"/>	↩ X	Circle arc setup inner doing
<input type="text" value="3"/>	↩ Y	
<input type="text"/>	↩ Z	
		X ₀
		Y ₀
		Z ₀

Note: The choice by Set in the original arc processing

<input type="text"/>	↩ X	Circle arc setup out doing
<input type="text" value="3"/>	↩ Y	
<input type="text"/>	↩ Z	
		X ₀
		Y ₀
		Z ₀

7, the importation of Radius

Deputy window display the "Enter Radius" Y-axis settings of the

original window radius; followed by the importation of

completed radius

<input type="text"/>	<input type="button" value="↩ X"/>	Circle arc setup Input Beside Radius
50.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

A radius of the original settings

<input type="text"/>	<input type="button" value="↩ X"/>	Circle arc setup Input Beside Radius
20.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

8, input tool diameter

Deputy window display "Please enter diameter cutter" Y-axis settings of the original window tool diameter; followed by the importation of

completed diameter cutter

<input type="text"/>	<input type="button" value="↩ X"/>	Circle arc setup Input Sword Diameter
20.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

Tool diameter of the original settings

<input type="text"/>	<input type="button" value="↩ X"/>	Circle arc setup Input Sword Diameter
6.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

9, each input processing length

Deputy window display "Please enter Stepping length of the" Y original settings window each processing length; followed by

for each input processing length, arc into the processing

<input type="text"/>	<input type="button" value="←"/> X	Circle arc setup Input Arc...
<input type="text" value="6.000"/>	<input type="button" value="←"/> Y	
<input type="text"/>	<input type="button" value="←"/> Z	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

The original settings length

<input type="text"/>	<input type="button" value="←"/> X	Circle arc setup Input Arc...
<input type="text" value="0.500"/>	<input type="button" value="←"/> Y	
<input type="text"/>	<input type="button" value="←"/> Z	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

10, processing arc

Deputy display window "processing No. 1" to the X Window processing, Y window display of "0.000", the first point to complete processing,

and then start processing the second by points, repeat the last operation, has been processing the Deputy window display as "processing No. 72"

<input type="text" value="0.000"/>	<input type="button" value="←"/> X	Circle process Sequence NO: 1
<input type="text" value="0.000"/>	<input type="button" value="←"/> Y	
<input type="text" value="0.000"/>	<input type="button" value="←"/> Z	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

<input type="text" value="- 23.000"/>	<input type="button" value="←"/> X	Circle process Sequence NO: 73
<input type="text" value="- 23.000"/>	<input type="button" value="←"/> Y	
<input type="text" value="0.000"/>	<input type="button" value="←"/> Z	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

11, exit by the end processing

Note: In the arc in the process, the operator can temporarily leave the **TAN**, R function returned to normal X, Y, X-axis, then return to the arc processing function **TAN**

**AUTO
R**

Smooth arc processing

Smooth arc processing to enter the following parameters

Processing of choice

Select processing mode

Inner / outer smooth arc processing options (X, Y-specific)

X, Y-axis coordinates of the location of origin

Smooth radius to be processed

Tool diameter

Length of each step of processing

Starting point of view

End perspective

Example 1: machining surface: XY

Processing of Arc

X, Y-axis origin coordinates: (20, 30)

Radius: 15 mm

Tool diameter: 20 mm

Stepping in: 6 mm

Starting point of view: 00

The termination point of view: 3600

Smooth arc processing steps:

1, rocking machine table, tool aimed at the smooth processing takes place starting point arc, each axis cleared.

0.000	← X	ABS R: 0.000
0.000	← Y	FOL A: 0°00'00"
0.000	← Z	X ₀
		Y ₀
		Z ₀

Steps

2, by **AUTO R** to enter smooth arc processing functions.

	↩ X	SmoothR setup choosed plane: XY
	↩ Y	
	↩ Z	
		X ₀
		Y ₀
		Z ₀

The original settings plane

3, planar processing options, press **↩ X** or **↩ Y** keys to choose.

4, by **↓**, and then choose from within the arc arc processing or processing.

	↩ X	SmoothR setup out doing
	↩ Y	
	↩ Z	
		X ₀
		Y ₀
		Z ₀

5, by **+** for the selection of Arc processing, according to within **-** arc processing. If you choose to face ZX, YZ plane, the direct input of the coordinates of the origin location of the origin of the XY coordinates position refers to the processing smooth arc relative to the center position by-0.1 **ent**

6, X axis coordinates input by **ent**; input Y-axis coordinate value by **ent**

Steps

<input type="text"/>	<input type="button" value="↩ X"/>	SmoothR setup Input X-axis
20.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

<input type="text"/>	<input type="button" value="↩ X"/>	SmoothR setup Input Y-axis
30.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

ent

7, the importation of smooth radius, according to

<input type="text"/>	<input type="button" value="↩ X"/>	SmoothR setup Input Arc Radius
5.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

A radius of the original settings

<input type="text"/>	<input type="button" value="↩ X"/>	SmoothR setup Input Arc Radius
15.000	<input type="button" value="↩ Y"/>	
<input type="text"/>	<input type="button" value="↩ Z"/>	
		X ₀
		Y ₀
		Z ₀

ent

8, input tool diameter by

	← X	SmoothR setup Input Sword diam
10.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Tool diameter of the original settings

	← X	SmoothR setup Input Sword diam
20.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

9, Step length of input by ent

	← X	SmoothR setup Input arc.....
4.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

Step length of the original set of

	← X	SmoothR setup Input arc.....
6.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

10, starting point of importation, by ent

Steps

	← X	SmoothR setup Input Incept Ang
15.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

The starting point of the original settings

	← X	SmoothR setup Input Incept Ang
0.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

11, the end point of input by **ent**

	← X	SmoothR setup Input The End Angle
320.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

The end point of the original settings


	← X	SmoothR setup Input The End Angle
360.000	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

12, such as liquid crystal display

Steps

-	45.000	↩ X	Circle process Sequence NO: 1
-	30.000	↩ Y	
	0.000	↩ Z	
			X ₀
			Y ₀
			Z ₀

13, will show zero-axis machine tools. R which is the starting point

for processing. By  display a processing point. Machine Tool Show then moved to zero axis. Repeat operations to complete all processing is completed processing.



Slant processing

Features: TECH-3i Chinese few tips to provide a significant slope processing automatically calculate processing function, the operator can type the following parameters

Plane processing options (XY, YZ, for the slant processing XZ plane)

Slant angle (in the XY plane and the X-axis slant that positive angle in the YZ plane with the Y-axis slant that positive angle)

		↩ X	Bevel Setup Input Bevel Arc.
	30.000	↩ Y	
		↩ Z	
			X ₀
			Y ₀
			Z ₀

Each processing slant length

After several significant input parameters Table hypotenuse will be automatically calculate the location of each point, the operator by



option processing serial number, and then turning tool processing to the two axes of the plane showed that the value of 0.000 for all locations

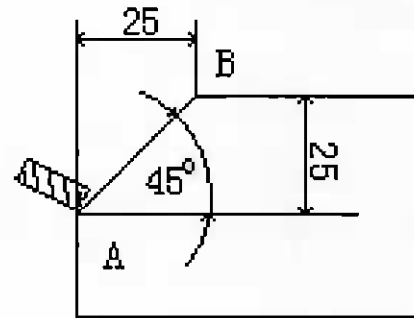
Example: processing as shown slant AB, parameter settings are as

follows

Plane Processing: XZ

Slant angle: 450

Each processing slant length: 1.2 mm



Steps

1, machine tool spindle tilt table 450, rocking machine processing workstations at the slant-A start, the X-axis cleared, Z-axis

cleared. In the normal display by

<input type="text" value="0.000"/>	<input type="button" value="←"/> X	ABS R: 0.000
<input type="text" value="0.000"/>	<input type="button" value="←"/> Y	POL A: 0°00'00"
<input type="text" value="0.000"/>	<input type="button" value="←"/> Z	<input type="text" value="X0"/>
		<input type="text" value="Y0"/>
		<input type="text" value="Z0"/>

2, by processing functions will be inclined to enter parameter

input, processing by the state directly to

ABS absolute

<input type="text"/>	<input type="button" value="←"/> X	Bevel Setup
<input type="text"/>	<input type="button" value="←"/> Y	Choose Plane XY
<input type="text"/>	<input type="button" value="←"/> Z	<input type="text" value="X0"/>
		<input type="text" value="Y0"/>
		<input type="text" value="Z0"/>

The original settings plane processing

Steps

3, the processing of choice

by and then choose XZ plane to enter the next step "input bevel angle"

Note: XY plane by choice

YZ plane by choice

XZ plane by choice

<input type="text"/>	<input type="button" value="← X"/>	Bevel Setup Choose Plane ZX
<input type="text"/>	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

4, slope angle input

Deputy window display "Please enter slant angle ..." Y-axis settings

of the original slant angle. Press

<input type="text"/>	<input type="button" value="← X"/>	Bevel Setup Input Bevel Arc.....
<input type="text" value="20.000"/>	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

The slant angle of the original settings

<input type="text"/>	<input type="button" value="← X"/>	Bevel Setup Input Bevel Arc.....
<input type="text" value="45"/>	<input type="button" value="← Y"/>	
<input type="text"/>	<input type="button" value="← Z"/>	
		<input type="text" value="X<sub>0</sub>"/>
		<input type="text" value="Y<sub>0</sub>"/>
		<input type="text" value="Z<sub>0</sub>"/>

5, each input processing slant length

Deputy window display the "Z-axis stepper type of" Y-axis stepper

Steps

set by the original volume.


Press **1** **.** **2** **ent**



	← X	Bevel Setup Input Bevel
0.300	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀


Stepping of the original settings

	← X	Bevel Setup Input Bevel
1.200	← Y	
	← Z	
		X ₀
		Y ₀
		Z ₀

6, processing slant

Deputy display window "processing No. 1" to the X-axis lathe tool processing, and Z-axis showed that the first point 0.000 processing completed by  under then processing point

7, at  or  in the switch between the points

8, processing has been completed, showed that by  the state to return to normal

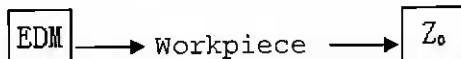
EDM

EDM machining functions EDM

Use only the processing of input can be processed

Example: processing - a depth of 10 mm in parts:

1, the copper surface after the collision in the Z-axis cleared



0.000	↩ X	Operating EDM....
0.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀

2, **EDM** by entering EDM functions

1.000	↩ X	Operating EDM....
0.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀

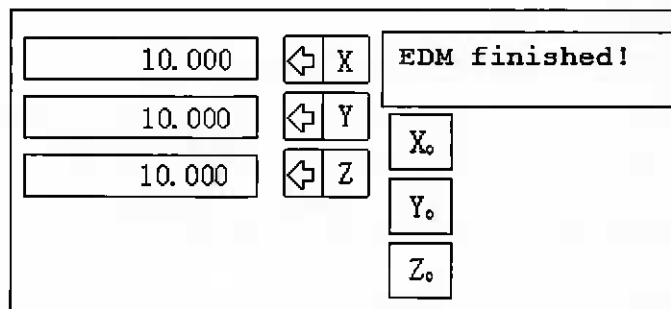
3, the depth of insertion 10

Press **1** **0** → **ent**

10.000	↩ X	Operating EDM....
0.000	↩ Y	
0.000	↩ Z	
		X ₀
		Y ₀
		Z ₀

Upon completion of the above steps can be EDM. Processing place, protecting the auxiliary show at this time to withdraw from the EDM,

according to **EDM** can be



Note:

In the second step, if the X-axis no data (shown as 0.000), show support for the "EDM machining finished", can not be placed at the depth of need in the Z-axis EDM not cleared before entering, the Home a depth of the Z and then to operate.

EDM functions output wiring

TECH-3I to provide a significant number of EDM specific features when the copper electrode has reached the depth of user settings,

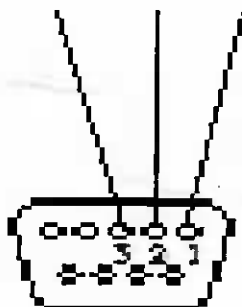
TECH-3i digital display table in the relay switch signal will be issued, EDM machine will stop.

Connection of single-output icon

TECH-3i digital display table back a DB9 socket, the socket is the TECH-3i digital output table EDM relay at the wiring.

Wiring pin and methods are as follows:

(Yellow) (red) (black)




To process with the "closed" in place of "open" access: 2 and 3 feet (normally closed) to the process as "open" in place of "closure" to: 1 to 2 feet (normally open) often open to the general control.



Note: the carton configuration of an output control.


The basic parameter settings


A plus or minus direction switch

Features: You can fine-tuning the direction of the axis of plus or minus




Example: by  button to enter the parameter settings

By  to the "X-axis count switching positive", and then switch the direction of 

By  can choose Z-axis or Y-axis direction switch completed

By  exit

Second, SDM coordinates input mode switch

After entering the basic parameters, according to the   choice "SDM coordinates input mode switching," and then switch 


When SDM model "0", input data for the actual value





When SDM model for the "1", contrary to input data for a few

Advanced users

I. Advanced users settings

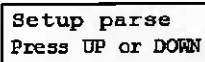
1. Enter the parameters set by ,  according to the choice of "internal Preferences"


2. And then  the right of the LCD window will show "Password: "

3. input Password    






II. Resolution settings




After entering advanced users based on user configuration requirements from the production home settings, users must not lose chaos on chaos, otherwise prevented normal use. Functional disorder caused by the software must be sent back to the manufacturers to set up, otherwise no warranty.

1, in the senior user settings, the LCD window on 

 tips enter resolution settings, and our digital form can be carried out separately for each axis resolution settings.

Steps


2, when entering resolution settings, the X, Y-axis show such as "0.00500." At this time by   the X-axis display window flashes on  or  bond cycle choose a different resolution, and then the resolution of the current  elected. Showing no window immediately, it means that the action has been completed.

Note: If you would like to set up three-axis resolution, select a shaft after not directly by  , but that on-demand changes in the resolution of several key axis of the home such as  

3, linear compensation

Features: Chinese TECH-3i tips provide linear compensation, in accordance with the actual value of the processing and observation of the error between the value of compensation amendments.

4, restore factory settings.

Show resumed factory settings, according to  key Chinese Show: "Please wait initialization started....." and wait for a few seconds after the resumption of liquid crystal display "button on ENT restore settings," saying that this has been completed factory settings.

Fault Analysis and Processing

Fault	Analyze the causes	Approach
Do not show	1, missed good power 2, a tributary of 110 V power supply voltage is not within the scope of ~ 220V	1, power line inspection plug and socket Interpolation is strong, whether good contact. 2, inspection of a significant form of insurance is good. 3, tests whether the input voltage 110 V ~ 220V range.
Shell Charged	1, grounding bad 2, 220 V power leakage	1, machine tool bed with a few significant leader Connectivity, and power requirements of the earth The same. 2, machine Chuangjiao such as plastic mats, the ground power supply must be linked to good ground, or else they affect low-voltage power supply of sensors operating inconvenient. 3, 220 V power leakage, speed electrician requested formal inspection, there are still problems such as Please contact with the manufacturers of the service. 4, please do not access FireWire 380 V Power Zone, to avoid burn a few significant power or form factors of insecurity, affecting the operator's personal safety.
Axis showed a value of twice the normal	1, optical grating resolution settings incorrect 2, a set-axis diameter display mode	1, set the correct resolution 2, the radius pattern display settings

Fault	Analyze the causes	Approach
X, Y window display confusion, numerical No laws, inaccurate	Table may be in power a few bad contact, Affected by the power disruption	<p>1, a few tables in the power-down and then re-opened, a few significant forms can be automatically scans of their own-one.</p> <p>2, if the first step is not operating the trip, please refer to the specification of-way.</p> <p>3, if the next step is still unable to rule out the possibility of the service, please contact manufacturers.</p>
Table axis of a significant number do not count	<p>1, grating-foot table with several significant contact is good.</p> <p>2, no grating signal output device.</p> <p>3, check optical grating-foot body, feet first is the normal installation, whether users limit themselves demolished, rendering the first reading by ultra-foot trip Penghuai body.</p> <p>4, a few tables in the axis counting problems.</p>	<p>Another axis grating and see whether they can change their normal count, if transplanted to normal after a device is the root counting device malfunction. Customers are requested to speed the above issues and service companies associated with the Department.</p>

<p>Table count several significant errors that distance and the actual distance inconsistent</p>	<p>1, machine tool accuracy Guide bad.</p> <p>2, machine tool running too fast.</p> <p>3, sub-grating device installation requirements of the parallel device did not adjust well, whether on Connecting Plate ministries firmly installed.</p> <p>4, the grating set foot resolution inconsistent with the actual resolution.</p> <p>5, linear error compensation value is not set up correctly.</p> <p>6, grating bad feet, and missed a few.</p>	<p>1, maintenance or transfer Machine Tool Guide is space.</p> <p>2, reducing the speed.</p> <p>3, reload grating feet firmly ministries to install on Connecting Plate.</p> <p>4, set the correct resolution.</p> <p>5, set the correct value of the linear error compensation.</p> <p>6, repair or replacement of optical grating.</p>
--	---	--

