

# DC

## BASIC OPERATION

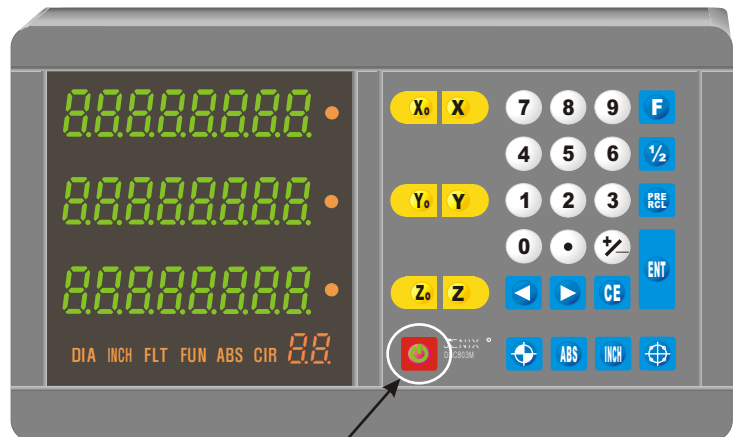
### Power ON / OFF

For general use, leave the main switch always ON, use ON/OFF switch of the front side.  
System will be on after 3 seconds of turning on.

- Main switch of the rear side

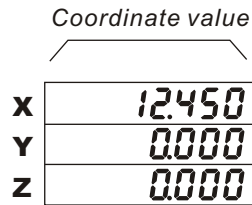
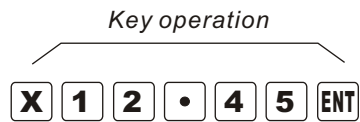
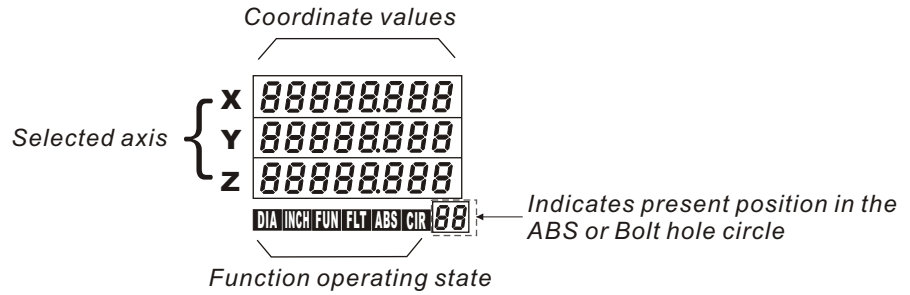


- ON/OFF switch of the front side



ON/OFF switch. If the switch of rear side is on, inside circuit is still working even when this switch is off.

Explanation of operation



Here explains present operating situation

"Input 12.450"

## 1. Preset

<b>X</b> → <span style="border: 1px dashed black; padding: 2px;">Input value</span> → <b>ENT</b>	To input any value and to use the value repeatedly.																												
<p><b>Ex.</b>  Input value is 12.45 and use it repeatedly.</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>Start point</p> </div> <div style="margin-left: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td><b>X</b></td><td>1</td><td>2</td><td>.</td><td>4</td><td>5</td><td><b>ENT</b></td></tr> <tr><td><b>X</b></td><td colspan="6">12.450</td></tr> <tr><td><b>Y</b></td><td colspan="6">0.000</td></tr> <tr><td><b>Z</b></td><td colspan="6">0.000</td></tr> </table> </div> </div> <p style="text-align: right; margin-top: 10px;">Input "12.45"</p>		<b>X</b>	1	2	.	4	5	<b>ENT</b>	<b>X</b>	12.450						<b>Y</b>	0.000						<b>Z</b>	0.000					
<b>X</b>	1	2	.	4	5	<b>ENT</b>																							
<b>X</b>	12.450																												
<b>Y</b>	0.000																												
<b>Z</b>	0.000																												

## 2. Recall preset values

<b>X</b> → <b>PRE RCL</b>	To recall preset values, and use it repeatedly																																								
<p><b>Ex.</b>  To make 3 holes with the interval of "10.000"</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center;"> <p>Start point</p> </div> <div style="margin-left: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td><b>X</b></td><td>1</td><td>0</td><td><b>ENT</b></td></tr> <tr><td><b>X</b></td><td colspan="3">10.000</td></tr> <tr><td><b>Y</b></td><td colspan="3">0.000</td></tr> <tr><td><b>Z</b></td><td colspan="3">0.000</td></tr> </table> </div> </div> <p style="text-align: right; margin-top: 10px;">Input "10.000"</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="text-align: center;"> <p>Move X-axis to 0.000</p> </div> <div style="margin-left: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td><b>X</b></td><td colspan="3">0.000</td></tr> <tr><td><b>Y</b></td><td colspan="3">0.000</td></tr> <tr><td><b>Z</b></td><td colspan="3">0.000</td></tr> </table> </div> </div> <p style="text-align: right; margin-top: 10px;">Move X-axis table until 0.000 displayed</p> <div style="display: flex; align-items: center; justify-content: center; margin-top: 10px;"> <div style="text-align: center;"> <p><b>X</b> <b>PRE RCL</b></p> </div> <div style="margin-left: 20px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td><b>X</b></td><td colspan="3">10.000</td></tr> <tr><td><b>Y</b></td><td colspan="3">0.000</td></tr> <tr><td><b>Z</b></td><td colspan="3">0.000</td></tr> </table> </div> </div> <p style="text-align: right; margin-top: 10px;">Recall "10.000" to use it repeatedly</p>		<b>X</b>	1	0	<b>ENT</b>	<b>X</b>	10.000			<b>Y</b>	0.000			<b>Z</b>	0.000			<b>X</b>	0.000			<b>Y</b>	0.000			<b>Z</b>	0.000			<b>X</b>	10.000			<b>Y</b>	0.000			<b>Z</b>	0.000		
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<b>X</b>	10.000																																								
<b>Y</b>	0.000																																								
<b>Z</b>	0.000																																								

### 3. Reset ( Display Zero)

<span style="border: 1px solid black; padding: 2px 5px;">X<sub>0</sub></span> <span style="border: 1px solid black; padding: 2px 5px;">Y<sub>0</sub></span> <span style="border: 1px solid black; padding: 2px 5px;">Z<sub>0</sub></span>	To make each axis zero						
<p><b>Ex.</b> </p> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px 5px;">X<sub>0</sub></span>  <span style="border: 1px solid black; padding: 2px 5px;">Y<sub>0</sub></span>  <span style="border: 1px solid black; padding: 2px 5px;">Z<sub>0</sub></span> </div> <div style="margin-left: 20px;"> <table style="border-collapse: collapse;"> <tr><td style="padding-right: 5px;">X</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> <tr><td style="padding-right: 5px;">Y</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> <tr><td style="padding-right: 5px;">Z</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> </table> </div> </div>	X	0.000	Y	0.000	Z	0.000	
X	0.000						
Y	0.000						
Z	0.000						

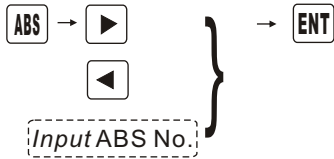
### 4. 1 / 2 Function (dividing into a half)

<span style="border: 1px solid black; padding: 2px 5px;">X</span> → <span style="border: 1px solid black; padding: 2px 5px;">½</span>	To divide a value into a half												
<p><b>Ex.</b>  To divide “12.400” into a half</p> <p style="margin-top: 20px;">Input or recall “12.400”</p> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px 5px;">X</span> <span style="border: 1px solid black; padding: 2px 5px;">½</span> </div> <div style="margin-left: 20px;"> <table style="border-collapse: collapse;"> <tr><td style="padding-right: 5px;">X</td><td style="border: 1px solid black; padding: 2px 10px;">12.400</td></tr> <tr><td style="padding-right: 5px;">Y</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> <tr><td style="padding-right: 5px;">Z</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> </table> </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px 5px;">X</span> <span style="border: 1px solid black; padding: 2px 5px;">½</span> </div> <div style="margin-left: 20px;"> <table style="border-collapse: collapse;"> <tr><td style="padding-right: 5px;">X</td><td style="border: 1px solid black; padding: 2px 10px;">6.200</td></tr> <tr><td style="padding-right: 5px;">Y</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> <tr><td style="padding-right: 5px;">Z</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> </table> </div> </div>	X	12.400	Y	0.000	Z	0.000	X	6.200	Y	0.000	Z	0.000	
X	12.400												
Y	0.000												
Z	0.000												
X	6.200												
Y	0.000												
Z	0.000												

### 5. Changing from “mm” to “inch” or “inch” to “mm”

<span style="border: 1px solid black; padding: 2px 5px;">INCH</span>	To change from mm to inch												
<p><b>Ex.</b> </p> <p style="margin-top: 20px;">25.400 mm ↔ 1.000 inch</p> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px 5px;">INCH</span> </div> <div style="margin-left: 20px;"> <table style="border-collapse: collapse;"> <tr><td style="padding-right: 5px;">X</td><td style="border: 1px solid black; padding: 2px 10px;">25.400</td></tr> <tr><td style="padding-right: 5px;">Y</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> <tr><td style="padding-right: 5px;">Z</td><td style="border: 1px solid black; padding: 2px 10px;">0.000</td></tr> </table> </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;"> <span style="border: 1px solid black; padding: 2px 5px;">INCH</span> </div> <div style="margin-left: 20px;"> <table style="border-collapse: collapse;"> <tr><td style="padding-right: 5px;">X</td><td style="border: 1px solid black; padding: 2px 10px;">1.0000</td></tr> <tr><td style="padding-right: 5px;">Y</td><td style="border: 1px solid black; padding: 2px 10px;">0.0000</td></tr> <tr><td style="padding-right: 5px;">Z</td><td style="border: 1px solid black; padding: 2px 10px;">0.0000</td></tr> </table> </div> </div> <p style="text-align: center; margin-top: 5px;"><span style="border: 1px solid black; padding: 2px 5px;">INCH</span></p>	X	25.400	Y	0.000	Z	0.000	X	1.0000	Y	0.0000	Z	0.0000	<p style="margin-top: 20px;">Input “inch” key then INCH lamp is on</p> <p style="margin-top: 20px;">Push “inch”key to release, INCH lamp is off</p>
X	25.400												
Y	0.000												
Z	0.000												
X	1.0000												
Y	0.0000												
Z	0.0000												

## 6. Changing from ABS to INC or INC to ABS

	<p>To set absolute position.          ABS number can be 0~99 (100).          In ABS mode, Bolt hole circle is unavailable.          ABS number appears in the subsidiary display.          Search ABS no. using, ◀ ▶ keys.</p>								
<p><b>1) Input ABS no.</b></p>									
<p>ABS</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: right;">X</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Y</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Z</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td></td><td style="text-align: right; padding-right: 10px;">ABS 0</td></tr> </table> <p style="text-align: right; margin-right: 20px;">← “Blinking”</p>	X	0.000	Y	0.000	Z	0.000		ABS 0
X	0.000								
Y	0.000								
Z	0.000								
	ABS 0								
<p style="border: 1px dashed black; display: inline-block; padding: 2px;">Input a number</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: right;">X</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Y</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Z</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td></td><td style="text-align: right; padding-right: 10px;">ABS 0</td></tr> </table> <p style="text-align: right; margin-right: 20px;">← Input one of 0~99</p>	X	0.000	Y	0.000	Z	0.000		ABS 0
X	0.000								
Y	0.000								
Z	0.000								
	ABS 0								
<p>ENT</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: right;">X</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Y</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Z</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td></td><td style="text-align: right; padding-right: 10px;">ABS 0</td></tr> </table>	X	0.000	Y	0.000	Z	0.000		ABS 0
X	0.000								
Y	0.000								
Z	0.000								
	ABS 0								
<p><b>2) input ABS number using ◀ , ▶ key.</b></p>									
<p>ABS</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: right;">X</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Y</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Z</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td></td><td style="text-align: right; padding-right: 10px;">ABS 0</td></tr> </table> <p style="text-align: right; margin-right: 20px;">← “Blinking”</p>	X	0.000	Y	0.000	Z	0.000		ABS 0
X	0.000								
Y	0.000								
Z	0.000								
	ABS 0								
<p>▶ } ◀ }</p>	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 10%; text-align: right;">X</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Y</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td style="text-align: right;">Z</td><td style="border: 1px solid black; padding: 2px;">0.000</td></tr> <tr><td></td><td style="text-align: right; padding-right: 10px;">ABS 0</td></tr> </table>	X	0.000	Y	0.000	Z	0.000		ABS 0
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X	0.000								
Y	0.000								
Z	0.000								
	ABS 0								

3) To find preset ABS coordinates in ABS mode

ABS mode (lamp on)

X 1000  
Y 7000  
Z 0000  
ABS 1



X 10000  
Y -9680  
Z 24585  
ABS 2



X 1000  
Y 7000  
Z 0000  
ABS 1

In ABS mode, pre saved ABS number can be found easily using ◀ ▶ keys.

4) To return to normal from ABS mode.

Normal state

X 2400  
Y 8830  
Z 39985



X 10000  
Y -9680  
Z 24585  
ABS 2

Push ABS key twice in the ABS mode, ABS lamp and number are off.



X 10000  
Y -9680  
Z 24585  
ABS 2

← Blinking



X 10000  
Y -9680  
Z 24585  
ABS 2

← Blinking



X 2400  
Y 8830  
Z 39985

Normal state



To assign "10.000" to the ABS no. 5 of X-axis

Normal mode




X	395.2 10
Y	-8065
Z	0.000

ABS

X	395.2 10
Y	-8065
Z	0.000



ABS 0

← Blinking

 }  
 }  
 OR  


X	40.765
Y	16.0 10
Z	-3.250

ABS 5

To find ABS no.5, move   or directly input 5.

ENT

X	123.785
Y	9.600
Z	-2.400

ABS 5

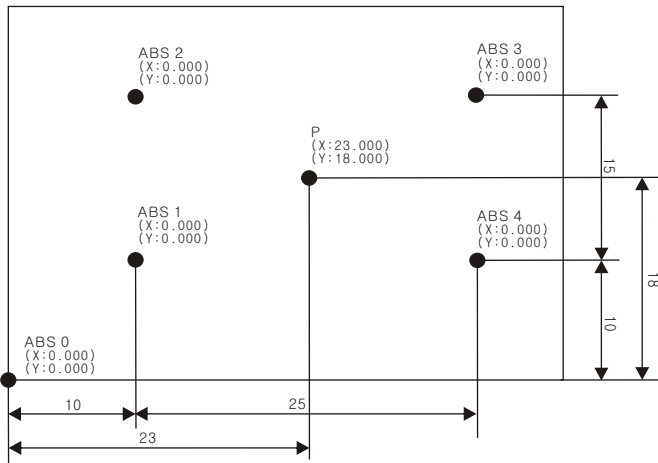
X 1 0 ENT

X	10.000
Y	9.600
Z	-2.400

ABS 5

Type "10.000"

**Ex.** To assign each point(coordinates) to each ABS number.



<PIC. 1>

Initial preset value from ABS no.0~99 is "0.000"

Normal state

X	-20.945
Y	13.800
Z	1.000

X<sub>0</sub> Y<sub>0</sub> Z<sub>0</sub>

X	0.000
Y	0.000
Z	0.000

Make each axis zero even in the normal mode.

ABS

X	-20.945
Y	13.800
Z	1.000

Changing from Normal to ABS mode

▶ }  
◀ }  
 OR  
0

X	-20.945
Y	13.800
Z	1.000

ABS 0

← "Blinking"

ENT

X	0.000
Y	0.000
Z	0.000

ABS 0

X<sub>0</sub> Y<sub>0</sub>

X	0.000
Y	0.000
Z	0.000

ABS 0

X	10.000
Y	10.000
Z	0.000

ABS 0

Move worktable until 10.000 displayed in the X and Y axis window. (see ABS.1 of <PIC.1>)





X	10.000
Y	10.000
Z	0.000
ABS 1	

1) Define ABS no.1

Move to "1" using

X<sub>0</sub> Y<sub>0</sub>

X	0.000
Y	0.000
Z	0.000
ABS 1	

X	0.000
Y	15.000
Z	0.000
ABS 1	

Move worktable until "15.000" displayed in the Y-axis window (ABS no.2 in the <PIC.1>)



X	0.000
Y	15.000
Z	0.000
ABS 2	

1) Define ABS no.2

Move to "2" using

Y<sub>0</sub>

X	0.000
Y	0.000
Z	0.000
ABS 2	

X	25.000
Y	0.000
Z	0.000
ABS 2	

Move worktable until "25.000" displayed in the X-axis window (ABS no.3 in the <PIC.1>)



X	25.000
Y	0.000
Z	0.000
ABS 3	

1) Define ABS no.3

Move to "3" using

X<sub>0</sub>

X	0.000
Y	0.000
Z	0.000
ABS 3	

X	0.000
Y	-15.000
Z	0.000
ABS 3	

Move worktable until "-15.000" displayed in the Y-axis window (ABS no.4 in the <PIC.1>)



X	0.000
Y	-15.000
Z	0.000
ABS 4	

1) Define ABS no.4

Move to "4" using

Y<sub>0</sub>

X	0.000
Y	0.000
Z	0.000
ABS 4	

**Ex.** To find the coordinates of ABS no.1 as in the <pic.1>,

Normal mode

X	23000
Y	18000
Z	0000

ABS

X	0000
Y	0000
Z	0000

ABS 4

← "Blinking"

▶  
◀  
OR  
1

X	13000
Y	8000
Z	0000

ABS 1

Move to "1" using ◀▶ keys, or type "1"

ENT

X	13000
Y	8000
Z	0000

ABS 1

X	0000
Y	0000
Z	0000

ABS 1

ABS no.1 can be found by moving X-axis and Y-axis worktables until 0.000 displayed each window.

## 7. Bolt hole circle

There are 4 factors for Bolt hole circle.

- 1) Radius (R), or Diameter(d)
- 2) The number of holes: d-no
- 3) Start angle: Sph
- 4) Final angle: Eph

Details for 4 factors (imputable range)

Factors	Available range
Radius(r) or diameter(d)	+8000.999mm or +400.9998inch
The number of holes	2 ~ 99 holes
Start angle (Sph)	0.000 ~ 359.999
Final angle (Eph)	0.001 ~ 999.999

**Ex.** An example of a bolt hole circle

Axis setting = X & Y axis  
 Radius(r) = 10.0  
 The number of holes = 8  
 Start angle = 0°.0"  
 Final angle = 360°.0"

Normal mode

X<sub>0</sub> Y<sub>0</sub> Z<sub>0</sub>

**1** **0**

X	12.460
Y	-9.845
Z	30.100
X	0.000
Y	0.000
Z	0.000
X	c lr rAd
Y	0.000
Z	0.000
<b>CIR</b>	
X	c lr rAd
Y	10.000
Z	0.000
<b>CIR</b>	

**Note**

Before setting for bolt hole circle, a datum point should be defined.

Input 4 factors → move worktable → X & Y-axis window display "0.000" → find next hole by pushing key.

By using keys, the position (or ABS no.) of previous or next hole can be found easily.

Bolt hole circle is unavailable in the 1-axis display unit

Please do not move worktable during inputting factors.

← Blinking

ENT

X	d-no
Y	1
Z	0.000

CIR

4

X	d-no
Y	8
Z	0.000

CIR

Input the number of holes, "8".

ENT

X	SPh
Y	0.000
Z	0.000

CIR

Push ENT key as the start angle is "0°".

ENT

X	EPH
Y	360.000
Z	0.000

CIR

Final angel will be 360°, as the start angle is 0°.  
Final angle = start angle + 360

ENT

X	10.000
Y	0.000
Z	0.000

CIR

This is the position of first hole.

- NOTE -

- \* Processing direction is counterclockwise.
- \* Final angle should be added 360 to the start angle.

$$\text{Final angle (°)} = \text{Start angle} + 360$$

► An example of bolt hole circle

X 10.000  
Y 0.000  
Z 0.000  
CIR 1

1st hole

Move worktable until 0.000 displayed in the X-axis window.

X 0.000  
Y 0.000  
Z 0.000  
CIR 1

1) Execute hole processing



X -2.935  
Y 7.070  
Z 0.000  
CIR 2

2nd hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X 0.000  
Y 0.000  
Z 0.000  
CIR 2

2) Execute 2nd hole processing



X -7.075  
Y 2.930  
Z 0.000  
CIR 3

3rd hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X 0.000  
Y 0.000  
Z 0.000  
CIR 3

3) Execute 3rd hole processing



X -7.075  
Y -2.930  
Z 0.000  
CIR 4

4th hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X 0.000  
Y 0.000  
Z 0.000  
CIR 4

4) Execute 4th hole processing



X	-2935
Y	-7070
Z	0.000

CIR 5

5th hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X	0.000
Y	0.000
Z	0.000

CIR 5

5) Execute 5th hole processing



X	2935
Y	-7070
Z	0.000

CIR 6

6th hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X	0.000
Y	0.000
Z	0.000

CIR 6

6) Execute 6th hole processing



X	7075
Y	-2930
Z	0.000

CIR 7

7th hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X	0.000
Y	0.000
Z	0.000

CIR 7

7) Execute 7th hole processing



X	-7075
Y	2930
Z	0.000

CIR 8

8th hole

Move worktable until 0.000 displayed in the X & Y-axis window.

X	0.000
Y	0.000
Z	0.000

CIR 8

8) Execute 8th hole processing

## 8. Axis setting for Bolt hole circle

### 1). Setting as X & Y-axis

<b>F</b> → <b>▶</b> → <b>ENT</b> → <b>ENT</b>	Only available in 2, 3 and 4-axis display unit.								
<b>F</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>1L ALE</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	X	1L ALE	Y	0.000	Z	0.000		
X	1L ALE								
Y	0.000								
Z	0.000								
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>2.c Ir cLE</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	2.c Ir cLE	Y	0.000	Z	0.000
<b>FUN</b>									
X	2.c Ir cLE								
Y	0.000								
Z	0.000								
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>1AH 15 HY</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	1AH 15 HY	Y	0.000	Z	0.000
<b>FUN</b>									
X	1AH 15 HY								
Y	0.000								
Z	0.000								
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>0.000</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	0.000	Y	0.000	Z	0.000
<b>FUN</b>									
X	0.000								
Y	0.000								
Z	0.000								

### 1). Setting as X & Z-axis

<b>F</b> → <b>▶</b> → <b>ENT</b> → <b>▶</b> → <b>ENT</b>	Only available in DSC-803(3-axis), 804(4-axis) display unit.								
<b>F</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>1L ALE</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	X	1L ALE	Y	0.000	Z	0.000		
X	1L ALE								
Y	0.000								
Z	0.000								
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>2.c Ir cLE</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	2.c Ir cLE	Y	0.000	Z	0.000
<b>FUN</b>									
X	2.c Ir cLE								
Y	0.000								
Z	0.000								
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>1AH 15 HY</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	1AH 15 HY	Y	0.000	Z	0.000
<b>FUN</b>									
X	1AH 15 HY								
Y	0.000								
Z	0.000								
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>2AH 15 HZ</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	2AH 15 HZ	Y	0.000	Z	0.000
<b>FUN</b>									
X	2AH 15 HZ								
Y	0.000								
Z	0.000								
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> <tr><td>X</td><td>0.000</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	<b>FUN</b>		X	0.000	Y	0.000	Z	0.000
<b>FUN</b>									
X	0.000								
Y	0.000								
Z	0.000								

### 3). Setting as Y & Z-axis

<b>F</b> → <b>▶</b> → <b>ENT</b> → <b>▶</b> → <b>▶</b> → <b>ENT</b>	Only available in DSC-803(3-axis), 804(4-axis) display unit.								
<b>F</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>1.1 A t E</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	1.1 A t E	Y	0.000	Z	0.000	<b>FUN</b>	
X	1.1 A t E								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>2.2 1 r c L E</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	2.2 1 r c L E	Y	0.000	Z	0.000	<b>FUN</b>	
X	2.2 1 r c L E								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>1.1 A H 1 5 H Y</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	1.1 A H 1 5 H Y	Y	0.000	Z	0.000	<b>FUN</b>	
X	1.1 A H 1 5 H Y								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>2.2 A H 1 5 H Z</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	2.2 A H 1 5 H Z	Y	0.000	Z	0.000	<b>FUN</b>	
X	2.2 A H 1 5 H Z								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>3.3 A H 1 5 Y Z</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	3.3 A H 1 5 Y Z	Y	0.000	Z	0.000	<b>FUN</b>	
X	3.3 A H 1 5 Y Z								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>0.000</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	X	0.000	Y	0.000	Z	0.000		
X	0.000								
Y	0.000								
Z	0.000								














#### 4). Setting as Radius & Diameter

<b>F</b> → <b>▶</b> → <b>ENT</b> → <b>▶</b> → <b>▶</b> → <b>▶</b> → <b>ENT</b>	Only available in DSC-802, 803, 804 display unit.								
<b>F</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>1.1 R<sub>LE</sub></td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	1.1 R <sub>LE</sub>	Y	0.000	Z	0.000	<b>FUN</b>	
X	1.1 R <sub>LE</sub>								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>2.2 r<sub>LE</sub></td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	2.2 r <sub>LE</sub>	Y	0.000	Z	0.000	<b>FUN</b>	
X	2.2 r <sub>LE</sub>								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>1.1 R 15 H<sub>Y</sub></td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	1.1 R 15 H <sub>Y</sub>	Y	0.000	Z	0.000	<b>FUN</b>	
X	1.1 R 15 H <sub>Y</sub>								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>2.2 R 15 H<sub>Z</sub></td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	2.2 R 15 H <sub>Z</sub>	Y	0.000	Z	0.000	<b>FUN</b>	
X	2.2 R 15 H <sub>Z</sub>								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>3.3 R 15 Y<sub>Z</sub></td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	3.3 R 15 Y <sub>Z</sub>	Y	0.000	Z	0.000	<b>FUN</b>	
X	3.3 R 15 Y <sub>Z</sub>								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>▶</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>4.4 R - r R<sub>d</sub></td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> <tr><td colspan="2" style="text-align: center;"><b>FUN</b></td></tr> </table>	X	4.4 R - r R <sub>d</sub>	Y	0.000	Z	0.000	<b>FUN</b>	
X	4.4 R - r R <sub>d</sub>								
Y	0.000								
Z	0.000								
<b>FUN</b>									
<b>ENT</b>	<table border="1" style="margin: auto;"> <tr><td>X</td><td>0.000</td></tr> <tr><td>Y</td><td>0.000</td></tr> <tr><td>Z</td><td>0.000</td></tr> </table>	X	0.000	Y	0.000	Z	0.000		
X	0.000								
Y	0.000								
Z	0.000								

Changing radius ↔ diameter  
(Bolt hole circle)

## 9. Error Message

	<p>Cable cut. Inaccurate operation due to dust or dirt. Scratch or crack of a glass scale. Push CE key, error message will disappear</p> <p><b>&lt;Note&gt;</b> when new scale installed or repaired, push CE key before using, to clear Error message.</p>
<p style="text-align: center;">              There is no scale connected in X-axis of a display unit.         </p> <p style="text-align: center;"> <b>Ex.</b>  To remove error message, push CE key         </p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p style="text-align: center;">   <b>X</b> 0.000  <b>Y</b> 0.000  <b>Z</b> 0.000   </p> <p style="text-align: center;"> <b>X</b> --oPEn--  <b>Y</b> 0.000  <b>Z</b> 0.000   </p> <p style="text-align: center;"> <b>X</b> Err r 15  <b>Y</b> 0.000  <b>Z</b> 0.000   </p> </div> <div style="width: 50%;"> <p>This means cable of a scale is cut or disconnected.</p> <p>Measured value error due to dirt or foreign body in a scale.</p> <p>Measured value error due to damage or scratch of a glass scale</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 20px;"> <div style="width: 45%;"> <p style="text-align: center;">     </p> </div> <div style="width: 50%;"> <p style="text-align: center;"> <b>X</b> Err r 15  <b>Y</b> 42.715  <b>Z</b> 1360   </p> <p style="text-align: center;"> <b>X</b> 20.700  <b>Y</b> 42.715  <b>Z</b> 1360   </p> </div> </div> <p style="text-align: right; margin-top: 20px;">Remove the error message by CE key</p>

### Cause of Error and solution

Symptom	Cause	Solution
Inaccuracy	Foreign body in a scale. Lubrication oil in a scale. Loose connection of a scale. No ground. Lubrication in joint of extension cable. Wrong operation for Rate or Resolution. Breakdown of glass, reading head or flexible cable.	Remove the foreign body. Remove the lubrication oil. Tighten up the connectors. It needs grounding. Clean up the joint part. Operate "RATE" or "Resolution" Otherwise, contact your local service.
No counting	Electric shock from outside. Wrong operation for input "RATE".	Check the ground. Correct "RATE"
"OPEN" message	There is no connection. Wire is cut.	Make sure the connection and wire cut. Otherwise, contact your local service.