JENIX®
DIGITAL READOUT SYSTEM

CE ISO9001

Absolute Digital Readout

///ABSOLUTE

DONG SAHN JENIX CO., LTD.

DC CONTENTS

Description of DSC800 counter

Basic operation

Function

Lathe function

EDM function

Installation of linear scale and trouble shooting

DC DESCRIPTION OF DSC-800

1. Front Panel

Keys	Descripton
1. Display area	Diplay the values of X, Y and Z axis
2. Axis indication lamp	Lamp will be on when the axis selected
3. Zero set keys	Initializing key
4. Axis indication key	To select the axis
5. Numbers key	0 ~ 9 numbers
6. Function Key	To begin any function, firstly start with "F"
7. ON/OFF switch	Turn on / off the display unit
8. Subsidiary display area	Display when " ABS" or Bolt hole circle... selected
9. Function lamp	Lamp will be on when a function selected
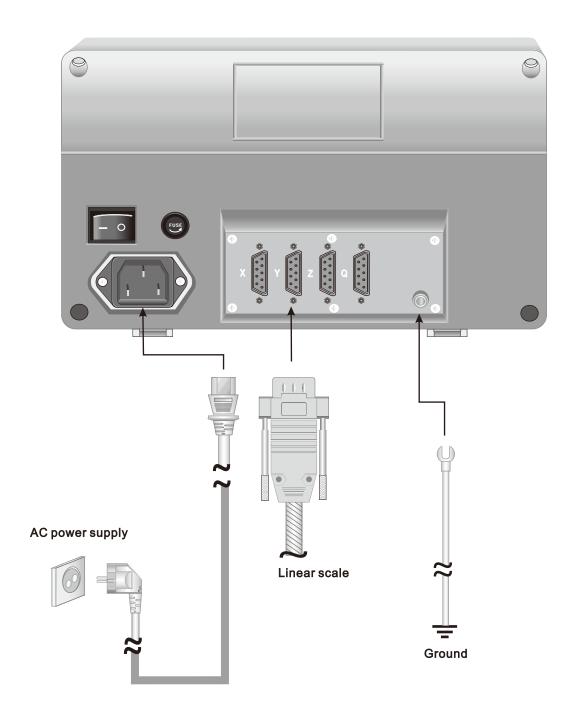
Note) This manual explains every function on the basis of 3-axis display unit (DSC-803).

2. Back Panel

Keys	Descripton
1. Main power switch	ON/OFF the main power
2. Fuse	220V/1A
3. Connectors for scale	Connections for X, Y and Z axes
4. GND	Ground connector
5. AC supply power	Connection with a power cord

3. Wire connection

AC power supply

Linear scale

Ground

4. Description of buttons

Key	Name	Description
Xo Yo Zo	Axis zero key	Reset present displayed axis
X Y Z	Axis (indication) key	Select axis
0 ～ 9	Number key	Numbers of 0 ~ 9
•	Dot key	Input the value of decimal point
+/−	+/- key	Changing positive(+) or negative(-) value
ENT	Enter key	"Enter" means completion of the process
◄ ►	Backward / Forward	When using "Menu" or "Function", move by sequence. Use this to look for the number of ABS or Bolt hole circle.
CE	Cancel key	Cancel input processing. Cancel excuting operation. Clear the error.
F	Function key	To use any function, firstly push "F" key
½	1/2 key	Divide present value into a half
PRE RCL	Preset Recall	Recall memerized coordinates
団	Multiple Datum Point function	To set multi datum point (abs function in incremental display)
⊕	Bolt hole circle	To use Bolt hole circle function
INCH	Mm / inch	Changing mm / inch
⏻	On / Off key	Turn on / off the FND display

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.
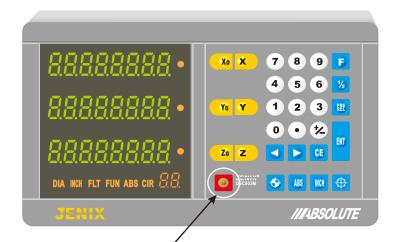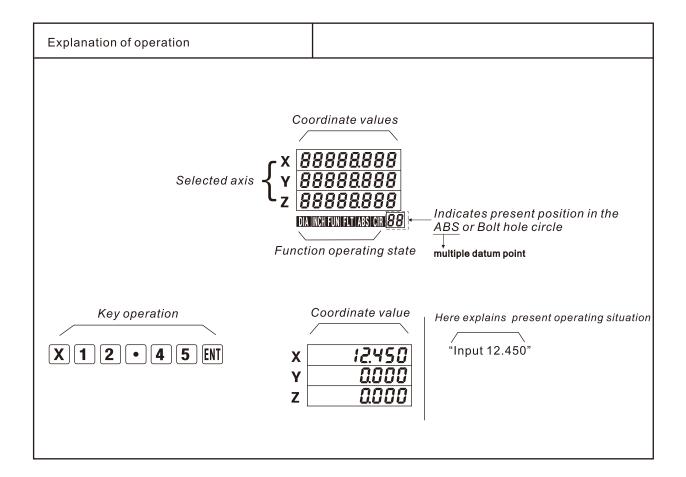
- **Main switch of the rear side**

- **ON/OFF switch of the front side**

DIA INCH FLT FUN ABS CIR
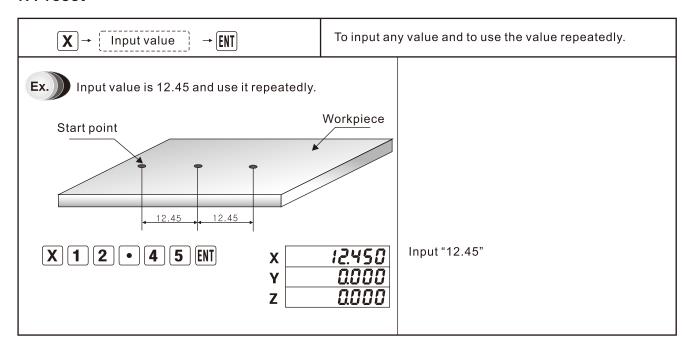
JENIX   ///ABSOLUTE
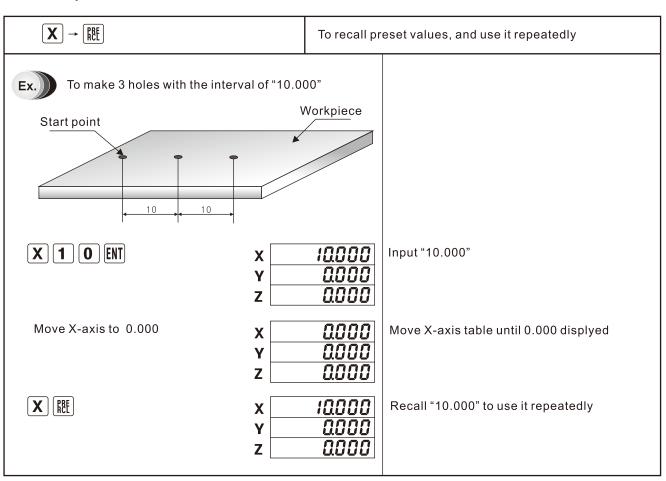
ON/OFF switch. If the switch of rear side is on,
inside circuit is still working even when this switch is off.

Explanation of operation	

Coordinate values

Selected axis

X 88888.888
Y 88888.888
Z 88888.888

DIA INCH FUN FLT ABS CIR 88

Function operating state

Indicates present position in the ABS or Bolt hole circle

multiple datum point

Key operation

[X] [1] [2] [•] [4] [5] [ENT]

Coordinate value

X 12.450
Y 0.000
Z 0.000

Here explains present operating situation

"Input 12.450"

1. Preset

$\boxed{X}$ → $\boxed{\text{Input value}}$ → $\boxed{\text{ENT}}$	To input any value and to use the value repeatedly.

Ex. Input value is 12.45 and use it repeatedly.

Start point · · · Workpiece

12.45 · · 12.45

$\boxed{X}\ \boxed{1}\ \boxed{2}\ \boxed{\cdot}\ \boxed{4}\ \boxed{5}\ \boxed{\text{ENT}}$	X	*12.450*	Input "12.45"
	Y	*0.000*	
	Z	*0.000*	

2. Recall preset values

$\boxed{X}$ → $\boxed{\substack{\text{PRE}\\ \text{RCL}}}$	To recall preset values, and use it repeatedly

Ex. To make 3 holes with the interval of "10.000"

Start point · · · Workpiece

10 · · 10

$\boxed{X}\ \boxed{1}\ \boxed{0}\ \boxed{\text{ENT}}$	X	*10.000*	Input "10.000"
	Y	*0.000*	
	Z	*0.000*	
Move X-axis to 0.000	X	*0.000*	Move X-axis table until 0.000 displyed
	Y	*0.000*	
	Z	*0.000*	
$\boxed{X}\ \boxed{\substack{\text{PRE}\\ \text{RCL}}}$	X	*10.000*	Recall "10.000" to use it repeatedly
	Y	*0.000*	
	Z	*0.000*	

3. Reset (Display Zero)

[Xo] [Yo] [Zo]	To make each axis zero

Ex.		
[Xo]	X	0.000
[Yo]	Y	0.000
[Zo]	Z	0.000

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

[X] → [½]	To divide a value into a half

Ex. To divide "12.400" into a half		
Input or recall "12.400"	X	12.400
	Y	0.000
	Z	0.000
[X] [½]	X	6.200
	Y	0.000
	Z	0.000

5. inch/mm conversion

[INCH]	To change from mm to inch

Ex.			
25.400 mm ↔ 1.000 inch	X	25.400	Input "inch" key then INCH lamp is on
	Y	0.000	
	Z	0.000	
[INCH]	X	1.0000	Push "inch"key to release, INCH lamp is off
	Y	0.0000	
	Z	0.0000	
		INCH	

6. INCR/ABS Conversion (multiple datum point)

[卅] → [▶] } → [ENT] [◀] *Input* ABS No.	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.

1) Input ABS no.

[卅]

X   *0.000*
Y   *0.000*
Z   *0.000*
[ABS]   *0*   ← "Blinking"

[Input a number]

X   *0.000*
Y   *0.000*
Z   *0.000*
[ABS]   *0*   ← Input one of 0~99

[ENT]

X   *0.000*
Y   *0.000*
Z   *0.000*
[ABS]   *0*

2) input ABS number using [◀] , [▶] key.

[卅]

X   *0.000*
Y   *0.000*
Z   *0.000*
[ABS]   *0*   ← "Blinking"

[▶]
 }
 [◀]

X   *0.000*
Y   *0.000*
Z   *0.000*
[ABS]   *0*

[ENT]

X   *0.000*
Y   *0.000*
Z   *0.000*
[ABS]   *0*

3) To find preset ABS coordinates in ABS mode

ABS mode (ABS lamp on)

X	1.000
Y	7.000
Z	0.000
	ABS 1

In ABS mode, pre saved ABS number can be found easily using ◄ ► keys.

►

X	10.000
Y	- 9.680
Z	24.585
	ABS 2

◄

X	1.000
Y	7.000
Z	0.000
	ABS 1

4) To return to normal from ABS mode.

Normal state

X	2.400
Y	8.830
Z	39.985

[⊞]

X	10.000
Y	- 9.680
Z	24.585
	ABS 2 ← Blinking

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

[⊞]

X	10.000
Y	- 9.680
Z	24.585
	ABS 2

[⊞]

X	10.000
Y	- 9.680
Z	24.585
	ABS 2 ← Blinking

[⊞]

X	2.400
Y	8.830
Z	39.985

Normal state

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

Normal mode

X	395.210
Y	-8.065
Z	0.000

[⊞]

X	395.210
Y	-8.065
Z	0.000
ABS	0

⟵ *Blinking*

[▶]
[◀]
OR
[5]

X	40.765
Y	16.010
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.

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

ABS 2
(X:0.000)
(Y:0.000)

ABS 3
(X:0.000)
(Y:0.000)

P
(X:23.000)
(Y:18.000)

ABS 1
(X:0.000)
(Y:0.000)

ABS 4
(X:0.000)
(Y:0.000)

ABS 0
(X:0.000)
(Y:0.000)

15

18

10

10   25

23

<PIC. 1>

Normal state

X	-20.945
Y	13.800
Z	1.000

[Xo] [Yo] [Zo]

X	0.000
Y	0.000
Z	0.000

Make each axis zero even in the normal mode.

[⊞]

X	-20.945
Y	13.800
Z	1.000
ABS	0

Changing from Normal to ABS mode

← "Blinking

[▶]
[◀]
OR
[0]

X	-20.945
Y	13.800
Z	1.000
ABS	0

Move to "0" using [◀][▶] keys, or type "0"

[ENT]

X	0.000
Y	0.000
Z	0.000
ABS	0

[Xo] [Yo]

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*	1) Define ABS no.1
	Y	*10.000*	
	Z	*0.000*	
	ABS	*1*	Move to "1" using [▶]
[Xo] [Yo]	X	*0.000*	
	Y	*0.000*	
	Z	*0.000*	
	ABS	*1*	
	X	*0.000*	Move worktable until "15.000" displayed
	Y	*15.000*	in the Y-axis window (ABS no.2 in the <PIC.1>)
	Z	*0.000*	
	ABS	*1*	
[▶]	X	*0.000*	1) Define ABS no.2
	Y	*15.000*	
	Z	*0.000*	
	ABS	*2*	Move to "2" using [▶]
[Yo]	X	*0.000*	
	Y	*0.000*	
	Z	*0.000*	
	ABS	*2*	
	X	*25.000*	Move worktable until "25.000" displayed
	Y	*0.000*	in the X-axis window (ABS no.3 in the <PIC.1>)
	Z	*0.000*	
	ABS	*2*	
[▶]	X	*25.000*	1) Define ABS no.3
	Y	*0.000*	
	Z	*0.000*	
	ABS	*3*	Move to "3" using [▶]
[Xo]	X	*0.000*	
	Y	*0.000*	
	Z	*0.000*	
	ABS	*3*	
	X	*0.000*	Move worktable until -15.000" displayed
	Y	*- 15.000*	in the Y-axis window (ABS no.4 in the <PIC.1>)
	Z	*0.000*	
	ABS	*3*	
[▶]	X	*0.000*	1) Define ABS no.4
	Y	*- 15.000*	
	Z	*0.000*	
	ABS	*4*	Move to "4" using
[Yo]	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	23.000
Y	18.000
Z	0.000

[ABS]

X	0.000
Y	0.000
Z	0.000
[ABS]	4

← "Blinking"

[▶]
[◀]
OR
[1]

X	13.000
Y	8.000
Z	0.000
[ABS]	1

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

[ENT]

X	13.000
Y	8.000
Z	0.000
[ABS]	1

X	0.000
Y	0.000
Z	0.000
[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

⊕ → [Input Radius(r) or Diameter(d)] → **ENT**

→ [Input the number of holes (d-no)] → **ENT**

→ [Input Start angle (Sph)] → **ENT**

→ [Input Final angle (Eph)] → **ENT**
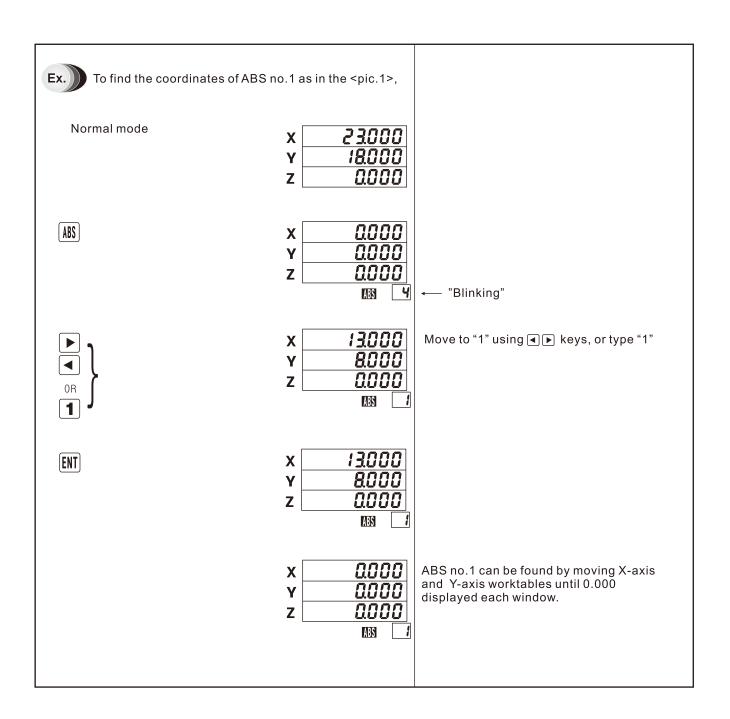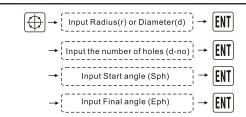
There are 4 factors for Bolt hole circle.
1) Radius (R), or Diameter(d)
2) The number of holes: d-no
3) Start angle: Sph
4) Final angle: Eph

Details for 4 factors (imputable range)
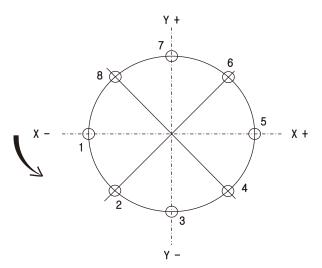
Factors	Available range
Radius(r) or diameter(d)	+8000.999mm or +400.9998inch
The number of holes	2 ~ 99 holes
Start angle (Sph)	0.000 ~ 359.999
Final angle (Eph)	0.001 ~ 999.999

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˝

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
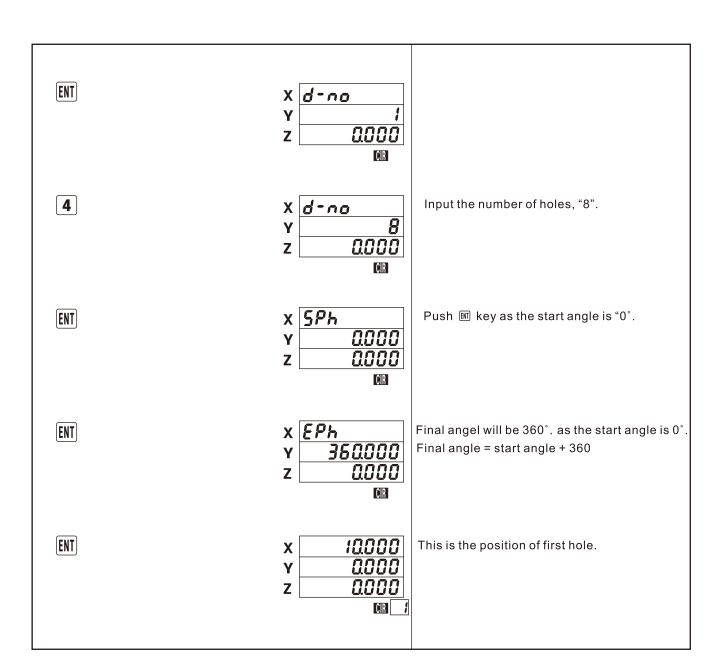
Please do not move worktable during
inputting factors.

Normal mode

X	12.460
Y	-9.845
Z	30.100

X₀ Y₀ Z₀

X	0.000
Y	0.000
Z	0.000

⊕

X	cir rAd
Y	0.000	← Blinking
Z	0.000
	CIR

1 0

X	cir rAd
Y	10.000
Z	0.000
	CIR

[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 1	This is the position of first hole.
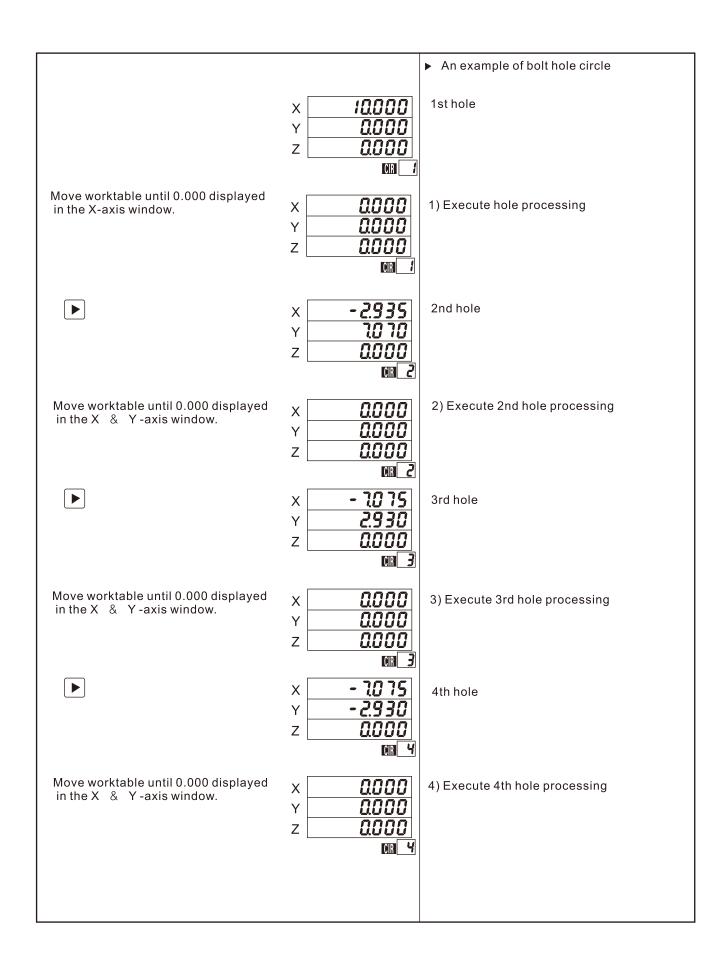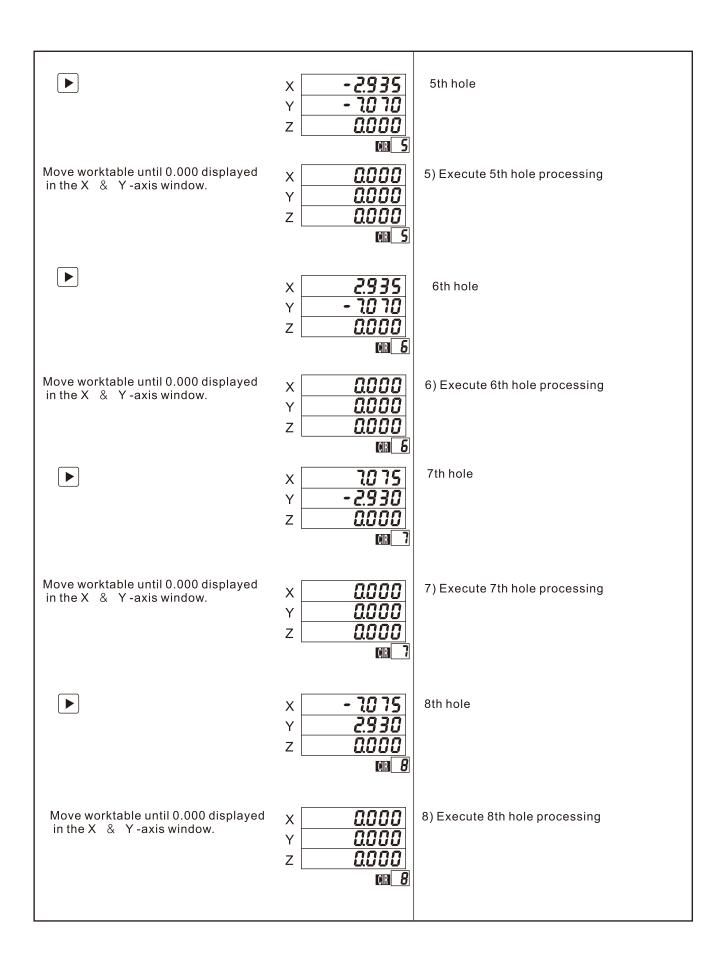
- NOTE -

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

  Final angle (˚) = Start angle + 360

▶ An example of bolt hole circle

X	10.000	1st hole
Y	0.000	
Z	0.000	
	CIR 1	

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

X	0.000	1) Execute hole processing
Y	0.000	
Z	0.000	
	CIR 1	

▶

X	-2.935	2nd hole
Y	7.070	
Z	0.000	
	CIR 2	

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

X	0.000	2) Execute 2nd hole processing
Y	0.000	
Z	0.000	
	CIR 2	

▶

X	-7.075	3rd hole
Y	2.930	
Z	0.000	
	CIR 3	

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

X	0.000	3) Execute 3rd hole processing
Y	0.000	
Z	0.000	
	CIR 3	

▶

X	-7.075	4th hole
Y	-2.930	
Z	0.000	
	CIR 4	

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

X	0.000	4) Execute 4th hole processing
Y	0.000	
Z	0.000	
	CIR 4	

▶	X	-2.935	5th hole
	Y	-7.070	
	Z	0.000	
		CIR 5	

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

	X	0.000	5) Execute 5th hole processing
	Y	0.000	
	Z	0.000	
		CIR 5	

▶	X	2.935	6th hole
	Y	-7.070	
	Z	0.000	
		CIR 6	

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

	X	0.000	6) Execute 6th hole processing
	Y	0.000	
	Z	0.000	
		CIR 6	

▶	X	7.075	7th hole
	Y	-2.930	
	Z	0.000	
		CIR 7	

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

	X	0.000	7) Execute 7th hole processing
	Y	0.000	
	Z	0.000	
		CIR 7	

▶	X	-7.075	8th hole
	Y	2.930	
	Z	0.000	
		CIR 8	

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

	X	0.000	8) Execute 8th hole processing
	Y	0.000	
	Z	0.000	
		CIR 8	

8. Axis setting for Bolt hole circle

1). Setting as X & Y-axis

F → ► → ENT → ENT	Only available in 2, 3 and 4-axis display unit.
F X `1.LAtE` Y `0.000` Z `0.000` `FUN`	
► X `2.c IrcLE` Y `0.000` Z `0.000` `FUN`	
ENT X `1.AH 1S XY` Y `0.000` Z `0.000` `FUN`	
ENT X `0.000` Y `0.000` Z `0.000`	

1). Setting as X & Z-axis

F → ► → ENT → ► → ENT	Only available in DSC-803(3-axis), 804(4-axis) display unit.
F X `1.LAtE` Y `0.000` Z `0.000` `FUN`	
► X `2.c IrcLE` Y `0.000` Z `0.000` `FUN`	
ENT X `1.AH 1S XY` Y `0.000` Z `0.000` `FUN`	
► X `2.AH 1S XZ` Y `0.000` Z `0.000` `FUN`	
ENT X `0.000` Y `0.000` Z `0.000`	

3). Setting as Y & Z-axis

$\boxed{\text{F}} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\text{ENT}} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\text{ENT}}$	Only available in DSC-803(3-axis), 804(4-axis) display unit.

$\boxed{\text{F}}$

X	1.LAtE
Y	0.000
Z	0.000
	FUN

$\boxed{\blacktriangleright}$

X	2.c IrcLE
Y	0.000
Z	0.000
	FUN

$\boxed{\text{ENT}}$

X	1.AH IS HY
Y	0.000
Z	0.000
	FUN

$\boxed{\blacktriangleright}$

X	2.AH IS HZ
Y	0.000
Z	0.000
	FUN

$\boxed{\blacktriangleright}$

X	3.AH IS YZ
Y	0.000
Z	0.000
	FUN

$\boxed{\text{ENT}}$

X	0.000
Y	0.000
Z	0.000

4). Setting as Radius & Diameter

$\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT}$	Only available in DSC-802, 803, 804 display unit.

$\boxed{F}$

X | 1.LAtE
Y | 0.000
Z | 0.000
FUN

$\boxed{\blacktriangleright}$

X | 2.c IrcLE
Y | 0.000
Z | 0.000
FUN

$\boxed{ENT}$

X | 1.AH IS XY
Y | 0.000
Z | 0.000
FUN

$\boxed{\blacktriangleright}$

X | 2.AH IS XΞ
Y | 0.000
Z | 0.000
FUN

$\boxed{\blacktriangleright}$

X | 3.AH IS YΞ
Y | 0.000
Z | 0.000
FUN

$\boxed{\blacktriangleright}$

X | 4.d IA-rAd
Y | 0.000
Z | 0.000
FUN

Changing radius ↔ diameter
(Bolt hole circle)

$\boxed{ENT}$

X | 0.000
Y | 0.000
Z | 0.000

9. OPEN / ERROR

OPEN shows when there is wire cut or no connection between a display and a scale.

ERROR shows when there is reading problem from a linear scale.

There is no scale connected in X-axis of a display unit.

X	- - oPEn - -
Y	0.000
Z	0.000

This means cable of a scale is cut or disconnected.

X	Error
Y	42.715
Z	1.360

Measured value error due to dirt or foreign body in a scale.

Measured value error due to damage or scratch of a glass scale

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 operaion 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.

DC **FUNCTION**

F	All of operation for function starts from F key

F
- 1. LATHE : Summing function for lathe (4-1)
- 2. CIRCLE : Bolt hole circle (2-11~17)
- 3. SCALE : Changing resolution (3-1)
- 4. DIR : Changing processing direction (3-1)
- 5. RATE : Rate, Correction or Compensation. (3-2)
- 6. DIA : Double counting for lathe (4-2)
- 7.RESET: Initializing function (3-4)
- 8. TEST: FND (Flexible Numeric Display) testing (3-6)
- 9. Q ADD: adding up Q & Z axes (3-7)
- 10. Display: decrease of decimal place (3-10)
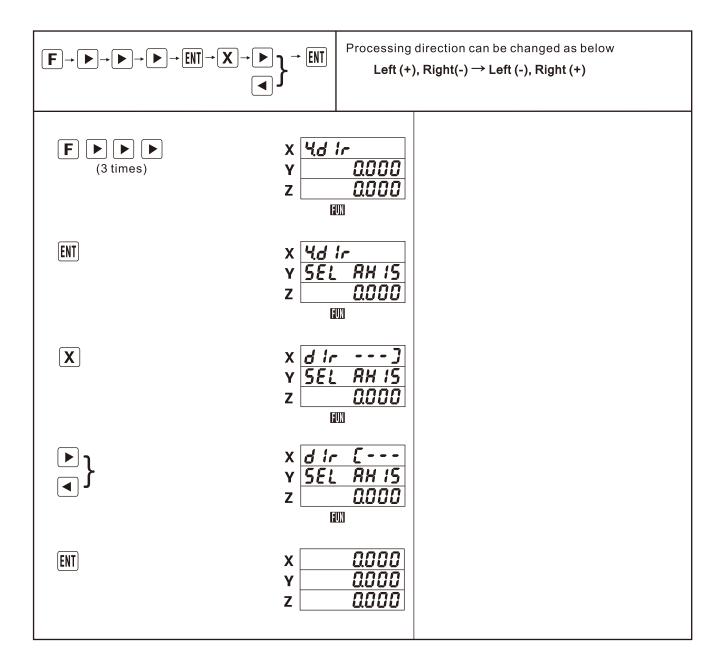
1. Changing resolution (SCALE)

Resolution is already set from factory.
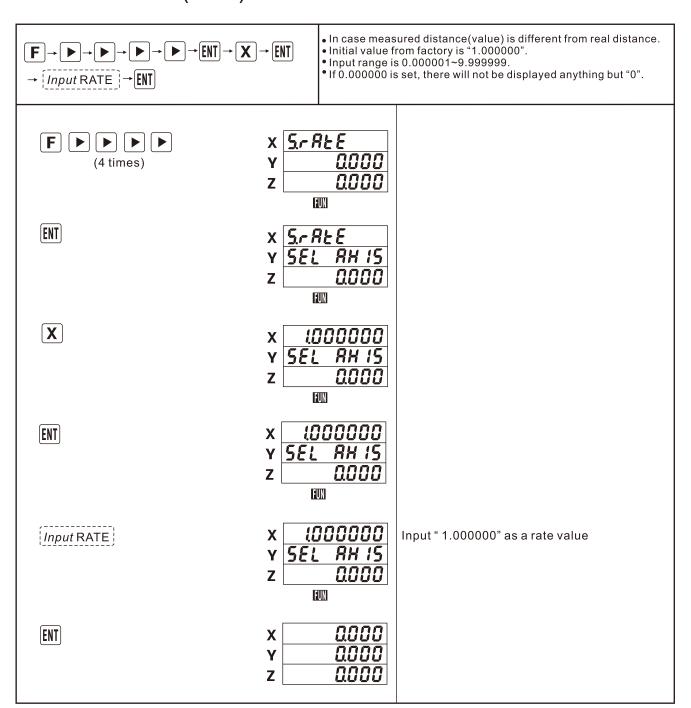
No need to change resolution in this ABS digital readout.

5/1000 or 1/1000 has been set from factory.

2. Changing direction (4.dlr)

F → ▶ → ▶ → ▶ → ENT → X → ▶ } → ENT ◀	Processing direction can be changed as below Left (+), Right(-) → Left (-), Right (+)

F ▶ ▶ ▶ (3 times)	X	4.d lr
	Y	0.000
	Z	0.000
		FUN
ENT	X	4.d lr
	Y	SEL AH 15
	Z	0.000
		FUN
X	X	d lr ---]
	Y	SEL AH 15
	Z	0.000
		FUN
▶ } ◀	X	d lr [---
	Y	SEL AH 15
	Z	0.000
		FUN
ENT	X	0.000
	Y	0.000
	Z	0.000
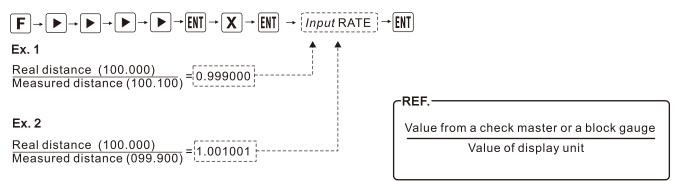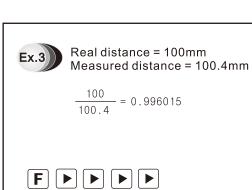
3. Rate or Correction (5.rAtE)

$\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{X} \rightarrow \boxed{ENT}$ $\rightarrow \boxed{Input~RATE} \rightarrow \boxed{ENT}$	• In case measured distance(value) is different from real distance. • Initial value from factory is "1.000000". • Input range is 0.000001~9.999999. • If 0.000000 is set, there will not be displayed anything but "0".

$\boxed{F}~\boxed{\blacktriangleright}~\boxed{\blacktriangleright}~\boxed{\blacktriangleright}~\boxed{\blacktriangleright}$
(4 times)

X	5.rAtE
Y	0.000
Z	0.000
	FUN

$\boxed{ENT}$

X	5.rAtE
Y	SEL AXIS
Z	0.000
	FUN

$\boxed{X}$

X	1.000000
Y	SEL AXIS
Z	0.000
	FUN

$\boxed{ENT}$

X	1.000000
Y	SEL AXIS
Z	0.000
	FUN

$\boxed{Input~RATE}$

X	1.000000
Y	SEL AXIS
Z	0.000
	FUN

Input " 1.000000" as a rate value

$\boxed{ENT}$

X	0.000
Y	0.000
Z	0.000

Correct or Compensation

$\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{X} \rightarrow \boxed{ENT} \rightarrow \boxed{Input~RATE} \rightarrow \boxed{ENT}$

Ex. 1

$$\frac{\text{Real distance}~(100.000)}{\text{Measured distance}~(100.100)} = 0.999000$$

Ex. 2

$$\frac{\text{Real distance}~(100.000)}{\text{Measured distance}~(099.900)} = 1.001001$$

REF.

$$\frac{\text{Value from a check master or a block gauge}}{\text{Value of display unit}}$$

Ex.3 Real distance = 100mm
Measured distance = 100.4mm

$$\frac{100}{100.4} = 0.996015$$

F ▶ ▶ ▶ ▶ (4 times)	X	S.rAtE
	Y	0.000
	Z	0.000
		FUN

ENT	X	S.rAtE
	Y	SEL AHIS
	Z	0.000
		FUN

X	X	1.000000
	Y	SEL AHIS
	Z	0.000
		FUN

ENT	X	1.000000
	Y	SEL AHIS
	Z	0.000
		FUN

0 . 9 9 6	X	0.996000
	Y	SEL AHIS
	Z	0.000
		FUN

ENT	X	0.000
	Y	0.000
	Z	0.000

4.Reset function (7.rESEt)

1) ABS Reset (Delete ABS data)   (Here, ABS means " Multiple datum point")
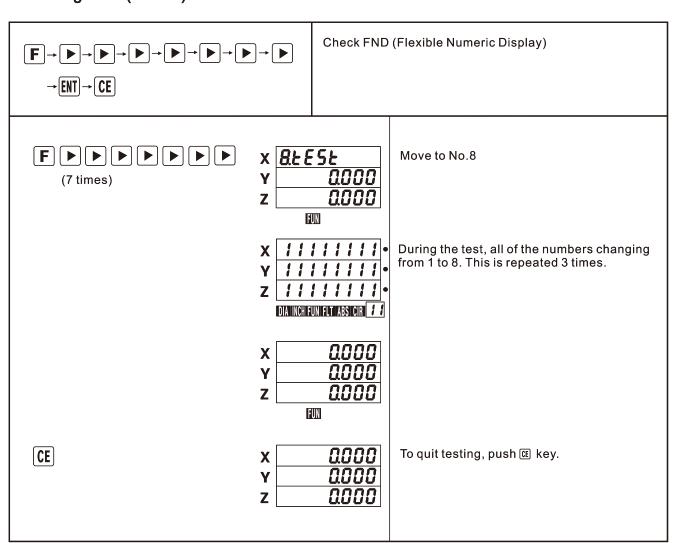
$\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT}$ $\rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT}$	Be careful to use ABS reset, as this will delete all saved ABS data.

$\boxed{F}$ $\boxed{\blacktriangleright}$ $\boxed{\blacktriangleright}$ $\boxed{\blacktriangleright}$ $\boxed{\blacktriangleright}$ $\boxed{\blacktriangleright}$ $\boxed{\blacktriangleright}$ (6 times)	X `7.rESEt` Y `0.000` Z `0.000` FUN	Move to No.7
$\boxed{ENT}$	X `1.rSt  AbS` Y `0.000` Z `0.000` FUN	
$\boxed{ENT}$	X `1.rSt  AbS` Y `-- In It --` Z `0.000` FUN	
	X `0.000` Y `0.000` Z `0.000`	

2) Program Reset (Delete all saved data)

F → ▶ → ▶ → ▶ → ▶ → ▶ → ▶ → ENT
→ ▶ → ENT
	1) All saved data deleted and return factory setting;
	
	  * Resolution : 5/100.
	  * Bolt hole circle : set as X & Y-axis, radius
	  * Direction : the state from factory
	  * Rate : 1.000000
	  * Removal of double counting function

F ▶ ▶ ▶ ▶ ▶ ▶ (6 times)	X `7.rESEt` Y `0.000` Z `0.000` FUN	Move to No.7
ENT	X `1.rSt AbS` Y `0.000` Z `0.000` FUN	
▶	X `2.rSt ALL` Y `0.000` Z `0.000` FUN	
ENT	X `2.rSt ALL` Y `-- In It --` Z `0.000` FUN	
	X `0.000` Y `0.000` Z `0.000`	

5. Testing FND (8.tESt)

F → ▶ → ▶ → ▶ → ▶ → ▶ → ▶ → ▶ → ENT → CE	Check FND (Flexible Numeric Display)

F ▶ ▶ ▶ ▶ ▶ ▶ ▶
(7 times)

X `8.tESt`
Y `0.000`
Z `0.000`
FUN

Move to No.8

X `1 1 1 1 1 1 1 1` •
Y `1 1 1 1 1 1 1 1` •
Z `1 1 1 1 1 1 1 1` •
DIA INCH FUN FLT ABS CIR `1 1`

During the test, all of the numbers changing from 1 to 8. This is repeated 3 times.

X `0.000`
Y `0.000`
Z `0.000`
FUN

CE

X `0.000`
Y `0.000`
Z `0.000`

To quit testing, push CE key.

6. Adding up Z & Q axes(10. qAdd)

$\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright}$
$\rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT}$

- The added up value shows in Z-axis window

- To escape from this function , select "nor" (normal) at the 3rd step

---

$\boxed{F} \; \boxed{\blacktriangleright} \; \boxed{\blacktriangleright} \cdots \cdots \boxed{\blacktriangleright}$
(8 times)

X	9.9Add
Y	0.000
Z	0.000
Q	0.000
	FUN

$\boxed{ENT}$

X	9.9Add
Y	nor
Z	0.000
Q	0.000
	FUN

$\left.\begin{array}{c}\boxed{\blacktriangleright}\\[4pt]\boxed{\blacktriangleleft}\end{array}\right\}$

X	9.9Add
Y	9Add
Z	0.000
Q	0.000
	FUN

$\boxed{ENT}$

X	0.000
Y	0.000
Z	0.000
Q	0.000
	Ad

Added up value shows in Z-axis window.

"Ad" will be displaying when in add-up mode.

⚠ Notice

When Q-axis moves **down**, and Z-axis moves **up**,

their directions must be **same** as +/+ or -/-.

- **Changing directions** (refer to the page3-7)

Z-axis: $\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{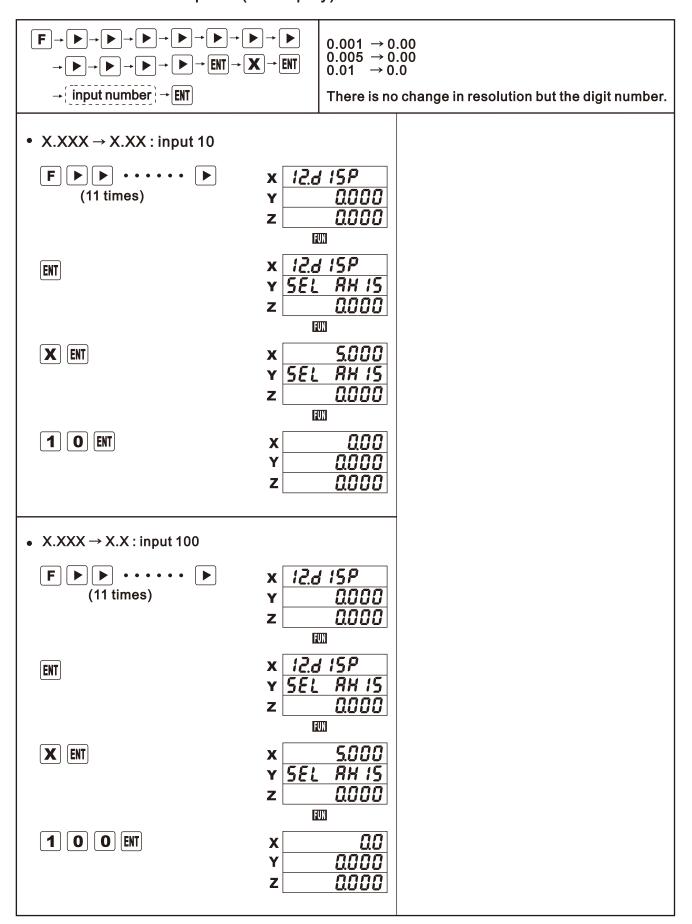ENT} \rightarrow \boxed{Z} \rightarrow \boxed{\blacktriangleright} (\text{or} \boxed{\blacktriangleleft}) \rightarrow \boxed{ENT}$

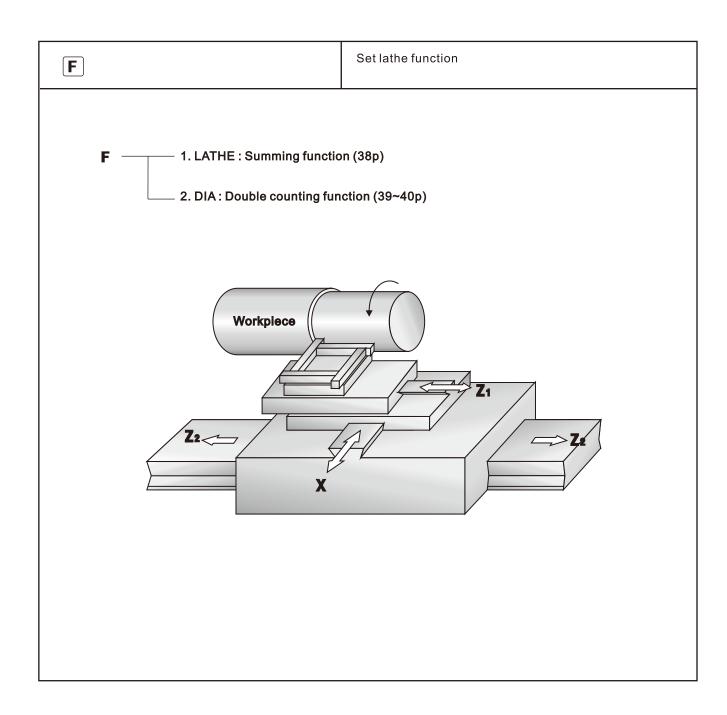**Q-axis:** $\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{Q} \rightarrow \boxed{\blacktriangleright} (\text{or} \boxed{\blacktriangleleft}) \rightarrow \boxed{ENT}$

Ex. Example of adding Z & Q axes
Z-axis : 25.000 / Q-axis: 10.000

X	0.000
Y	0.000
Z	25.500
Q	10.000

[F] [▶] [▶] · · · · · · [▶]
(8 times)

X	9.9Add
Y	0.000
Z	25.500
Q	10.000
	FUN

[ENT]

X	9.9Add
Y	nor
Z	25.508
Q	10.000
	FUN

[▶] }
[◀] }

X	9.9Add
Y	9Add
Z	25.500
Q	10.000
	FUN

[ENT]

X	0.000
Y	0.000
Z	35.500	Added value 35.500 shows in Z-axis.
Q	10.000
	Ad	◀—— means added value

7. Vibration proof function

$\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright}$ $\rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT}$	

$\boxed{F}$ $\boxed{\blacktriangleright}$ $\boxed{\blacktriangleright}$ $\cdots\cdots$ $\boxed{\blacktriangleright}$ (9 times)	X $\boxed{10.o5c}$ Y $\boxed{0.000}$ Z $\boxed{0.000}$ FUN
$\boxed{ENT}$	X $\boxed{10.o5c}$ Y $\boxed{o5c\ oFF}$ Z $\boxed{0.000}$ FUN
$\left.\begin{array}{c}\boxed{\blacktriangleright}\\ \boxed{\blacktriangleleft}\end{array}\right\}$	X $\boxed{10.o5c}$ Y $\boxed{o5c\ on}$ Z $\boxed{0.000}$ FUN
$\boxed{ENT}$	X $\boxed{0.000}$ Y $\boxed{0.000}$ Z $\boxed{0.000}$

8. Decrease of decimal place (12 Display)

F → ▶ → ▶ → ▶ → ▶ → ▶ → ▶ → ▶
→ ▶ → ▶ → ▶ → ▶ → ENT → X → ENT
→ [input number] → ENT

$0.001 \rightarrow 0.00$
$0.005 \rightarrow 0.00$
$0.01 \rightarrow 0.0$

There is no change in resolution but the digit number.

● X.XXX → X.XX : input 10

F ▶ ▶ ・・・・・・ ▶
(11 times)

X	12.d ISP
Y	0.000
Z	0.000
	FUN

ENT

X	12.d ISP
Y	SEL AH IS
Z	0.000
	FUN

X ENT

X	5.000
Y	SEL AH IS
Z	0.000
	FUN

1 0 ENT

X	0.00
Y	0.000
Z	0.000

● X.XXX → X.X : input 100

F ▶ ▶ ・・・・・・ ▶
(11 times)

X	12.d ISP
Y	0.000
Z	0.000
	FUN

ENT

X	12.d ISP
Y	SEL AH IS
Z	0.000
	FUN

X ENT

X	5.000
Y	SEL AH IS
Z	0.000
	FUN

1 0 0 ENT

X	0.0
Y	0.000
Z	0.000

LATHE FUNCTION

DC

F	Set lathe function

F — 1. LATHE : Summing function (38p)

— 2. DIA : Double counting function (39~40p)

Workpiece

Z_1

Z_2

Z_2

X

1. Lathe Summing Function (1.LAthE)

F → ENT → ▶ } → ENT 　　　　　　 ◀	• This function is available in the model DSC-803, 804. • X-axis can be adjustable. • Result from summing Y & Z-axis appears in the Y-axis window. • Inputting value and Zero setting don't work in the Z-axis • If Y-axis is reset by Y₀, Z-axis is also reset automatically. • Bolt hole circle doesn't work.

F

X `1LAthE`
Y `0.000`
Z `0.000`
FUN

ENT

X `1LAthE`
Y `nor`
Z `0.000`
FUN

▶ } ◀

X `1LAthE`
Y `LAthE`
Z `0.000`
FUN

NOR ↔ LATHE by ▶ ◀

ENT

X `0.000`
Y `0.000`
Z `LAthE`

Ex. Summing present values

X `-23.600`
Y `41.260`
Z `65.085`

F

X `1LAthE`
Y `nor`
Z `65.085`
FUN

ENT

X `1LAthE`
Y `nor`
Z `65.085`
FUN

▶ } ◀

X `1LAthE`
Y `LAthE`
Z `65.085`
FUN

ENT

X `-23.600`
Y `106.345`
Z `LAthE`

Result from summing Y, Z-axis shows in the Z-axis window

2. Double Counting Function (6.dIA)

[F]→[▶]→[▶]→[▶]→[▶]→[▶]→[ENT] →[X]→[▶]→[ENT]	Select double counting function, one axis counts double. (In working with a lathe, diameter is necessary)

[F] [▶] [▶] [▶] [▶] [▶] (5 times)	X 6.d IA Y 0.000 Z 0.000 FUN	Move to No.6
[ENT]	X 6.d IA Y SEL AH IS Z 0.000 FUN	
[X]	X rAd Y SEL AH IS Z 0.000 FUN	
[▶] } [◀]	X d IA Y SEL AH IS Z 0.000 FUN	X-axis will be double counting. DIA ↔ RAD by [◀] [▶]
[ENT]	X 0.000 Y 0.000 Z 0.000 DIA	

Ex. To set double counting function (by diameter) for X-axis.

	X `25.000`
	Y `-8.395`
	Z `40.620`

F ▶ ▶ ▶ ▶ ▶ (5 times)	X `6.d iA` Y `-8.395` Z `40.620` **FUN**	Move to No.6

ENT	X `6.d iA` Y `SEL AH iS` Z `40.620` **FUN**

X	X `rAd` Y `SEL AH iS` Z `40.620` **FUN**

▶ ◀	X `d iA` Y `SEL AH iS` Z `40.620` **FUN**

ENT	X `25.000` Y `-8.395` Z `40.620` **DIA**	X-axis will be double counted.

3. Tool Offset

Calipers (Micrometer)

Workpiece

Tool No.1

Tool No.2

Tool No.4

Tool No.3

Tool offset

This is for displaying from end of a tool to the middle point of a workpiece.
To use this function, memorize the length of each tool to a display unit.

Ex. Tool#1→Imitation processing→measuring diameter →input the value
Tool#2
Tool#3
Tool#4

Calipers (or Micrometer)

Workpiece

30 25 20

Tool 1

Tool 4

Tool 2

Tool 3

ABS	X	*68.530*	Select ABS function
	Y	*-5.405*	
	Z	*18.700*	
	ABS	*0*	
1 ENT	X	*68.530*	Assign tool#1 to ABS No.1
	Y	*-5.405*	
	Z	*18.700*	**Offset of Tool#1**
	ABS	*1*	Do imitation processing with Tool#1. Then, take off the tool and measure diameter of the workpiece with a calipers or micrometer. Input the measured value to a display unit.
X 2 0 ENT	X	*20.000*	
Measured diameter value, 20, of the workpiece.	Y	*-5.405*	
	Z	*18.700*	Tool#1 will be set by inputting measured value," 20".
	ABS	*1*	
►	X	*30.080*	Assign tool#2 to ABS No.2
	Y	*10.860*	
	Z	*22.350*	
	ABS	*2*	**Offset of Tool#2**
X 2 5 ENT	X	*25.000*	Do imitation processing with Tool#2. Then, take off the tool and measure diameter of the workpiece with a calipers or micrometer. Input the measured value to a display unit.
	Y	*10.860*	
	Z	*22.350*	
	ABS	*2*	Tool#2 will be set by inputting measured value,"25".

▶	X 43.060 Y 18.860 Z 57.200 ABS 3	Assign tool#3 to ABS No.3
X 3 0 ENT	X 30.000 Y 18.860 Z 57.800 ABS 3	**Offset of Tool#3** Do imitation processing with Tool#3. Then, take off the tool and measure diameter of the workpiece with a calipers or micrometer. Input the measured value to a display unit. Tool#3 will be set by inputting measured value,"30".

DC BASIC OPERATION

▶ How to operate 803 AEDM

EDM Light

Subsidiary display area
(ABS, CIRCLE, STEP NO.)

Keys	Name	Description
EDM	EDM	To begin EDM Mode from Normal Mode
SET	SET	To set the discharge direction up or down in normal and EDM mode.
▶ , ◀	Step Key or Up-Down Key	1. To move to the next discharging step 2. To use when discharge ready 3. To set discharge direction up or down
ENT	ENT	Push ENT after inputting data

1. Key Operation

EDM SET ▶ ENT	⟨Xo⟩ ⟨X⟩ ⟨Yo⟩ ⟨Y⟩ ⟨⊞⟩ ⟨⊕⟩ **These keys can't be used in EDM mode.**

EDM	X `0.000` Y `0.000` Z `0.000` EDM	To start with EDM mode. EDM light will always be on in EDM mode.
SET	X `StEP - 1` Y `10.000` Z `0.000` EDM	With SET key, you can input a value to each step.
▶	X `StEP - 2` Y `0.000` Z `0.000` EDM	You can move to the next step using these arrow keys.
ENT } **▶**	X `10.000` Y `0.000` Z `0.000` EDM `1`	When you finish inputting data, push ENT key to complete preparation.

<NOTICE> If you want to repeat the same processing after a discharging cycle, don't forget to push ▶ key. Then " 1 " will be shown in the subsidiary display area.
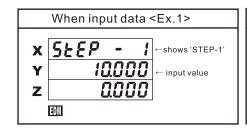
▶ <Ex.1> When you input data in EDM mode,
　X and Y axis display windows show EDM related information.
　● X-axis window: shows 'STEP-1' (to 'STEP-4')
　● Y-axis window: shows numerals you will input
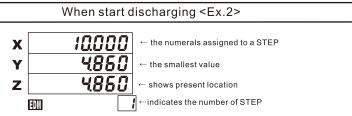
▶ <Ex.2> When you start discharging,
　X and Y axis display windows show processing related information.
　● X-axis window: shows numerals assigned to each STEP.
　● Y-axis window:
　　(1) set as Down: firstly shows numerals which is the smallest in the pre-set values.
　　(2) set as Up: firstly shows numerals which is the biggest in the pre-set values.
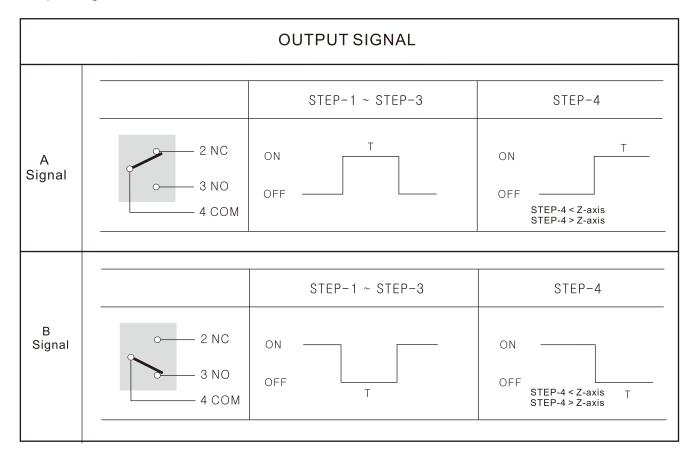
When input data <Ex.1>	When start discharging <Ex.2>
X `StEP - 1` ←shows 'STEP-1' Y `10.000` ← input value Z `0.000` EDM	X `10.000` ← the numerals assigned to a STEP Y `4.860` ← the smallest value Z `4.860` ← shows present location EDM `1` ←indicates the number of STEP

▶ When discharging of every step is finished, numerals will disappear from the subsidiary display area.
▶ If you input values at random regardless of the STEP;

　(1) In case it was set as UP : the smallest value will be automatically assigned to STEP No.1 and the rest in order.
　(2) In case it was set as DOWN : the biggest value will be automatically assigned to STEP No.1 and the rest in order.

2. Output Signal of DSC-803ΑEDM Coutner

OUTPUT SIGNAL		
	STEP-1 ~ STEP-3	STEP-4
A Signal — 2 NC / 3 NO / 4 COM	ON ⎍ T OFF	ON T ⎦ OFF STEP-4 < Z-axis STEP-4 > Z-axis
	STEP-1 ~ STEP-3	STEP-4
B Signal — 2 NC / 3 NO / 4 COM	ON ⎤⎥⎦ OFF T	ON ⎤⎦ OFF STEP-4 < Z-axis T STEP-4 > Z-axis
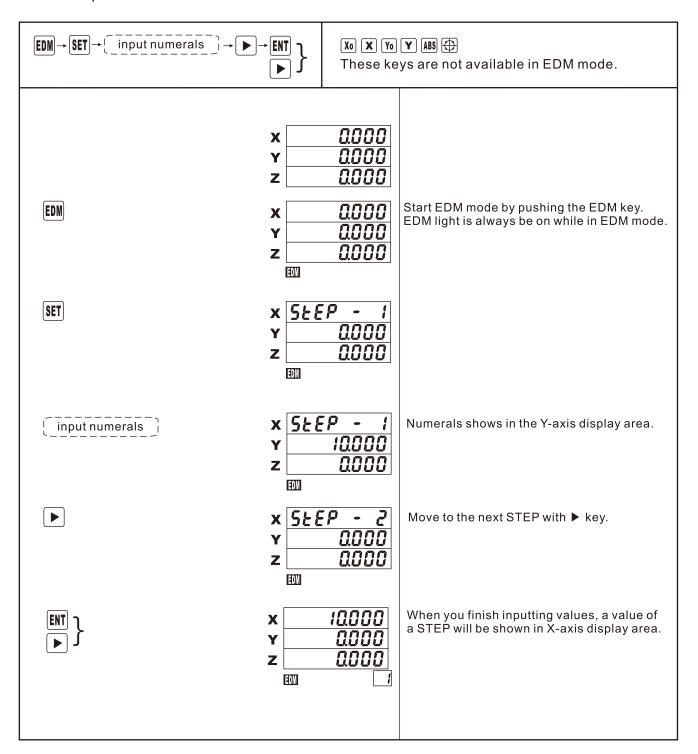
▶ In STEP-1 ~ STEP-3, EDM counter will out a relay signal momentarily but,
in SETP-4, the relay signal will be out continuously when Z-axis moves down over the value of STEP-4.
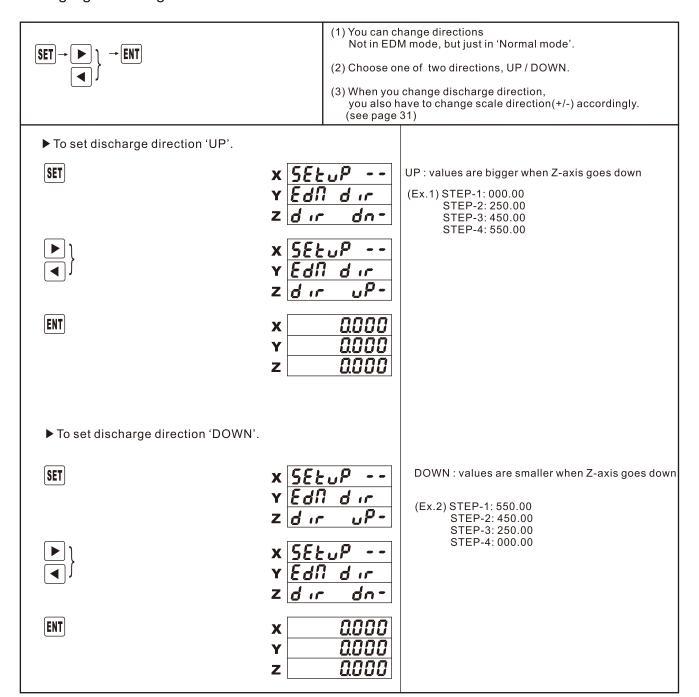
In other words, a relay signal will be out continuously,

(1) If it has been set as 'UP': when the value of Z-axis is bigger than the value of STEP-4.
(2) If it has been set as 'DOWN': when the value of Z-axis is smaller than the value of STEP-4.

3. How to input numerals

EDM → SET → ⌐ input numerals ⌐ → ▶ → ENT ⎫ ▶ ⎭	Xo X Yo Y ABS ⊕ These keys are not available in EDM mode.

<table>
<tr><td></td><td>X   0.000
Y   0.000
Z   0.000</td><td></td></tr>
<tr><td>EDM</td><td>X   0.000
Y   0.000
Z   0.000
EDM</td><td>Start EDM mode by pushing the EDM key.
EDM light is always be on while in EDM mode.</td></tr>
<tr><td>SET</td><td>X   StEP - 1
Y   0.000
Z   0.000
EDM</td><td></td></tr>
<tr><td>⌐ input numerals ⌐</td><td>X   StEP - 1
Y   10.000
Z   0.000
EDM</td><td>Numerals shows in the Y-axis display area.</td></tr>
<tr><td>▶</td><td>X   StEP - 2
Y   0.000
Z   0.000
EDM</td><td>Move to the next STEP with ▶ key.</td></tr>
<tr><td>ENT ⎫
▶ ⎭</td><td>X   10.000
Y   0.000
Z   0.000
EDM   1</td><td>When you finish inputting values, a value of
a STEP will be shown in X-axis display area.</td></tr>
</table>

4. Changing Discharge Directions

SET → ▶ } → ENT 　　◀	(1) You can change directions 　　Not in EDM mode, but just in 'Normal mode'. (2) Choose one of two directions, UP / DOWN. (3) When you change discharge direction, 　　you also have to change scale direction(+/-) accordingly. 　　(see page 31)

▶ To set discharge direction 'UP'.

SET
X `5EtuP --`
Y `Edη dιr`
Z `dιr dn-`

▶ }
◀
X `5EtuP --`
Y `Edη dιr`
Z `dιr uP-`

ENT
X `0.000`
Y `0.000`
Z `0.000`

UP : values are bigger when Z-axis goes down

(Ex.1) STEP-1: 000.00
　　　　STEP-2: 250.00
　　　　STEP-3: 450.00
　　　　STEP-4: 550.00

▶ To set discharge direction 'DOWN'.

SET
X `5EtuP --`
Y `Edη dιr`
Z `dιr uP-`

▶ }
◀
X `5EtuP --`
Y `Edη dιr`
Z `dιr dn-`

ENT
X `0.000`
Y `0.000`
Z `0.000`

DOWN : values are smaller when Z-axis goes down

(Ex.2) STEP-1: 550.00
　　　　STEP-2: 450.00
　　　　STEP-3: 250.00
　　　　STEP-4: 000.00

▶ When you set discharge direction 'UP', the value you will input should be bigger than present Z-axis value.
　In case of 'DOWN', the value should be smaller than the Z-axis value.

▶ If the STEP values go down though you set the direction 'UP', please change 'counting direction'
　from (-) to (+) or reversely.

> ※ 'Counting direction' is for the direction of a Linear Scale,
>　　while discharge direction is for the direction of an EDM counter(Z-axis moving)

> ※ How to change 'counting direction' (see 『'page 31』 for more)
>
> 1. Make sure if the counter is in normal mode.
> 2. Push F button, then select '4.dir' from the menu and push ENT key.
> 3. Push Z button. (the axis you want to change directions)
> 4. Push ▶ or ◀ to change present direction to opposite direction.
> 5. Push ENT to complete changing directions.

Ex. Example of electric discharge processing 1.

STEP-1 → 10

EDM	X	0.000
	Y	0.000
	Z	0.000
		EDM

SET	X	5tEP - 1
	Y	0.000
	Z	0.000
		EDM

1 0	X	5tEP - 1
	Y	10.000
	Z	0.000
		EDM

ENT ▶	X	10.000
	Y	0.000
	Z	0.000
		EDM 1

10.000 is assigned to STEP-1, and
10.000 is automatically assigned to STEP-2 ~STEP-4.

Ex. Example of electric discharge processing 2.

STEP-1 → 10
STEP-2 → 15
STEP-3 → 20

EDM	X	0.000
	Y	0.000
	Z	0.000
	EDM	

SET	X	5tEP - 1
	Y	0.000
	Z	0.000
	EDM	

1 0	X	5tEP - 1
	Y	10.000
	Z	0.000
	EDM	

▶ 1 5	X	5tEP - 2
	Y	15.000
	Z	0.000
	EDM	

▶ 2 0	X	5tEP - 3
	Y	20.000
	Z	0.000
	EDM	

Assigning numerals to the STEPs has been finished as follows.

STEP-1 = 10
STEP-2 = 15
STEP-3 = 20 and also
STEP-4 = 20 (automatically)

ENT ⎫ ▶ ⎬	X	10.000
	Y	0.000
	Z	0.000
	EDM	1

5. To check present value of EDM mode as in normal mode

F	Whenever push 'F' Key Normal, value and EDM value are switched in turn.

EDM mode →

X	10.000	EDM mode
Y	0.000	
Z	0.000	
EDM	1	

F

Normal Mode →

X	68.530	Normal Mode
Y	24.865	
Z	0.000	

F

X	10.000	EDM mode
Y	0.000	
Z	0.000	
EDM	1	

⚠ Notice

Normal mode	EDM mode
X 10.000 Y 0.000 Z 0.000 CIR 1 ↓ Number of Bolt Hole circle	X 12.500 Y 0.000 Z 0.000 EDM 1 EDM STEP 번호 ↓ Number of STEP in EDM mode
In the subsidiary display area, it indicates; 1. in Normal mode : Bolt Hole Circle Number or ABS number 2. in EDM mode : STEP number	

DC INSTALLATION & TROUBLE SHOOTING

1. Installation

1) Installation and precaution

① Display counter should be safely grounded.
② Do not put the DRO system around other electrical appliances which could cause electrical noise.
③ Be careful not to let contaminates like lubrication oil and chips flow into the scale.
④ To insure the highest accuracy possible, install the scales as close as possible to the object being measured or the workplace.
⑤ It is strongly recommended to install a protective cover and insure that the reading head can move freely and smoothly.
⑥ Glass scales can be broken from any shock. Handle with care.
⑦ Use the voltage between 110V and 220V.

Required Tools for installation
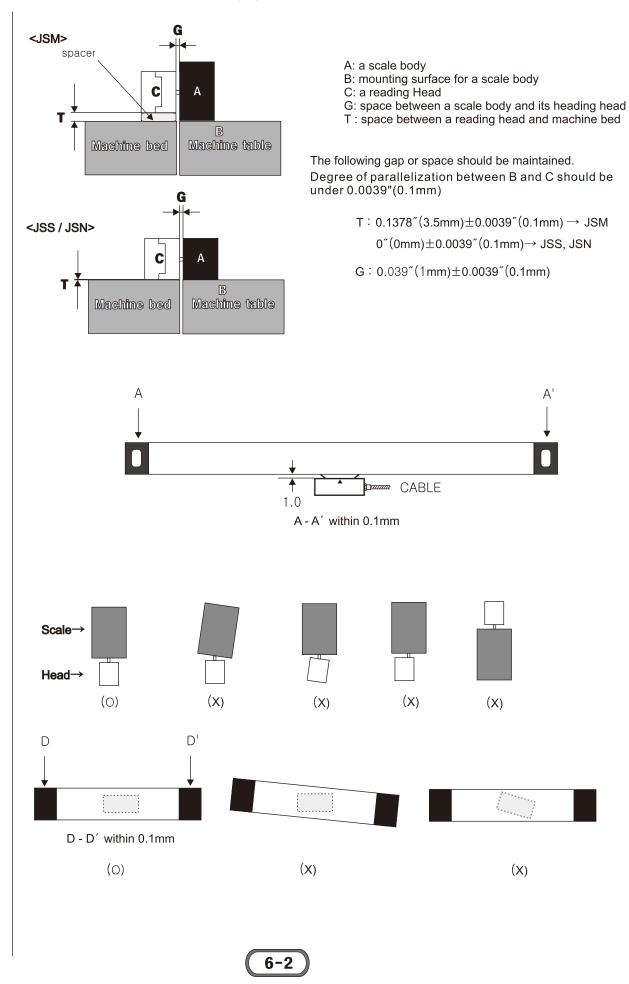
Electric Drill : φ3.5, φ4.3, φ5.2
Tap : M4, M5, M6
Dial Gauge : 1/100 mm
Tap Handle
Screwdriver
Wrench set .

Mounting accuracy
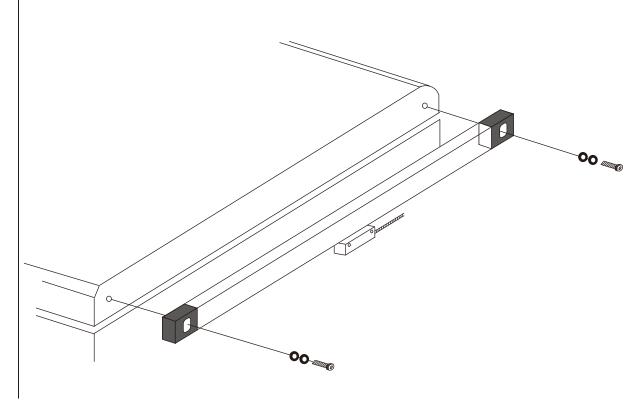
Mount a linear scale to be horizontal and perpendicular to each central axis.

<JSM>

A: a scale body
B: mounting surface for a scale body
C: a reading Head
G: space between a scale body and its heading head
T : space between a reading head and machine bed

The following gap or space should be maintained.
Degree of parallelization between B and C should be under 0.0039"(0.1mm)

T : 0.1378″(3.5mm)±0.0039″(0.1mm) → JSM

0″(0mm)±0.0039″(0.1mm)→ JSS, JSN

G : 0.039″(1mm)±0.0039″(0.1mm)

<JSS / JSN>

CABLE

1.0

A - A´ within 0.1mm

Scale→

Head→

(O)   (X)   (X)   (X)   (X)

D - D´ within 0.1mm

(O)   (X)   (X)

3) Mounting scale

(1) Positioning, Drilling, Temporary fixing.
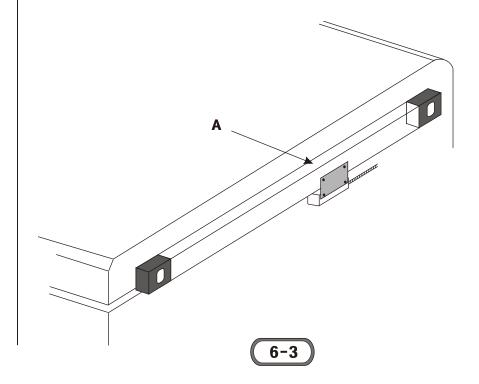
By determining mounting position on mounting surface of machine bed, drill and tap holes.
Fix the scale temporarily to the machine table, using the hexagon socket head bolt.

(2) Mounting
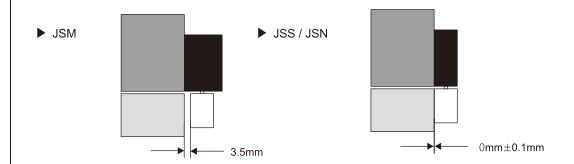
Using dial gauge, measure horizontal angle of A.
- 1 Scales over 1000mm, check alignment and if it is fixed in a proper space.
- 1 If the alignment of A don't be measured with Digital Gauge, facing area of alignment mark is parallel in both direction.

A
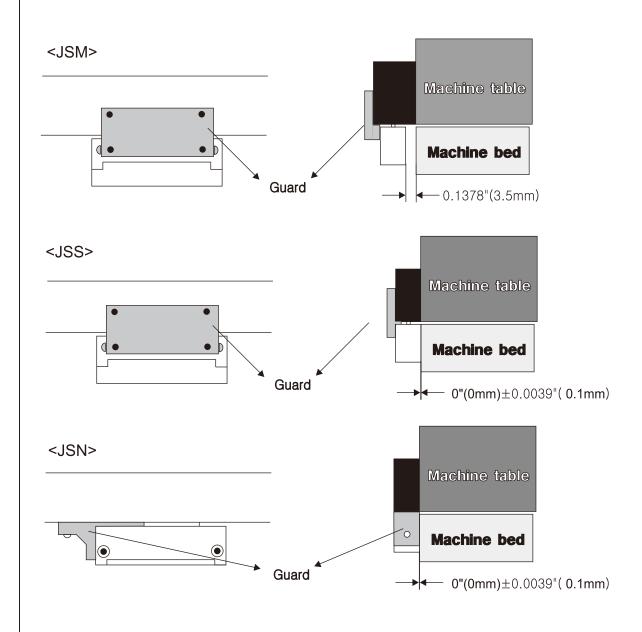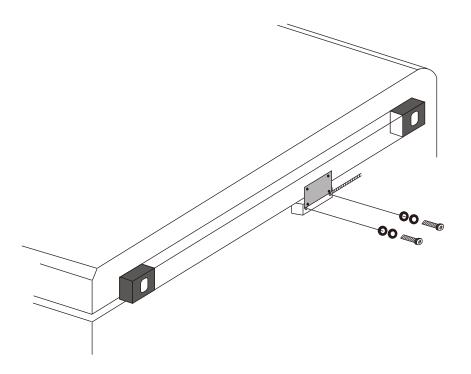
(3) Head carrier Mounting

Space between a machine bed and a reading head should be 0.1378" (3.5mm) ± 0.0039"(0.1mm) for JSM, and 0"(0mm)±0.0039″(0.1mm)mm for JSS or JSN.

▶ JSM

▶ JSS / JSN

3.5mm

0mm±0.1mm
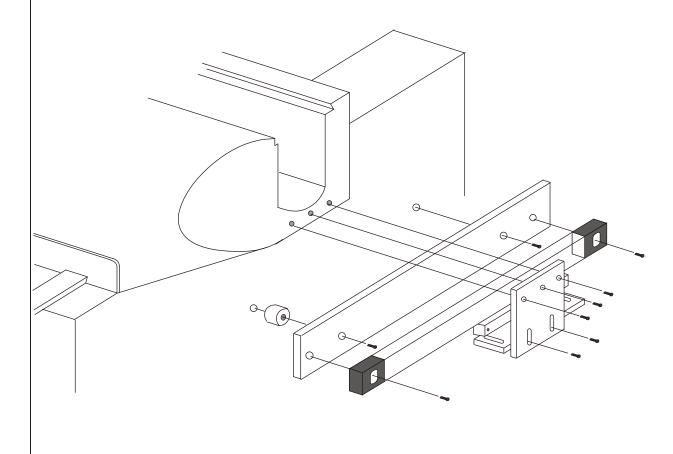
● The guard needs to be removed after installation.

<JSM>

Guard

Machine table

Machine bed

0.1378"(3.5mm)

<JSS>

Guard

Machine table

Machine bed

0"(0mm)±0.0039"(0.1mm)

<JSN>

Guard

Machine table

Machine bed

0"(0mm)±0.0039"(0.1mm)

- With a mark at the end of scale as a datum line, gap between head and scale should be equal.
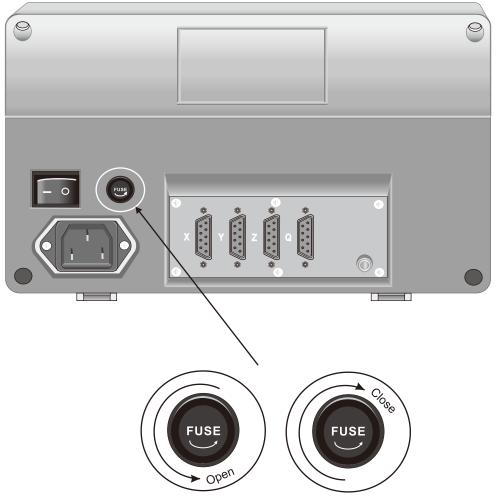
2. Trouble shooing

Trouble	Solution
Power was turned off.	• Make sure ⏻ key is turned on. • Make sure main power is on. • Make sure Fuse has blown out • Make sure power corder is connected rightly.
Fuse blows out frequently	• Make sure supping power is stable or not. • Disconnect a scale from the counter and check the connectors. • After checking above, call repairing service.
Power is on but display is turned off	• Cutting fluid or oil can flow into the keyboard. • Disconnect a scale from a counter.
ERROR is shown in the axis window	• Check the connection between a scale and a counter. • Check the ground state of a counter. • Check the fixing bolts are loosen. • Connect the scale with other axis of a counter to see which one is the cause. • Check backlash of the machine. • Check if the scale was broken from being got bent or curved.
Displayed value is fixed when a scale is moving	• Check "RATE" (32p) • Check normal rate is "1000000". • Check the connection of a scale and a counter.
One out of X,Y and Z-axis doesn't work	• Connect the scale with other axis of a counter to see which one is the cause.
DIA lamp is on	• Turn to RAD mode using "Double counting function of lathe" (39p).
Displayed value is double counted	• Check "RATE" (32p). • Check normal rate is "1000000". • Check if DIA lamp is on, then do correction as below (39p)
Difference between real value and measured value Correction of RATE (32p)	• $\dfrac{\text{Real distance}}{\text{Measured distance}}$ = RATE Correction Ex.1 $\dfrac{30.0000}{299.100}$ = 1.003009 EX.2 $\dfrac{200.000}{200.050}$ = 0.999750 $\boxed{F} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{\blacktriangleright} \rightarrow \boxed{ENT} \rightarrow \boxed{X} \rightarrow \boxed{ENT} \rightarrow \boxed{Input\ \text{RATE}} \rightarrow \boxed{ENT}$ (Select " 5. RAtE")
Note	• Be careful cutting fluid, oil or dust not to flow into a scale.

※ This product can be modified without previous notice to improve quality.

3. Replacing a fuse
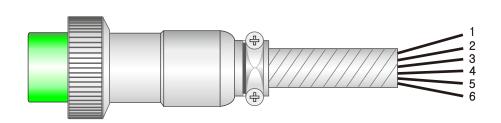
Replacing a fuse, 250V 2A.
Use a – type screw driver

Kinds	Standard
Rated Voltage Fuse	110V ~ 220V 250V, 2A

4. Connector information
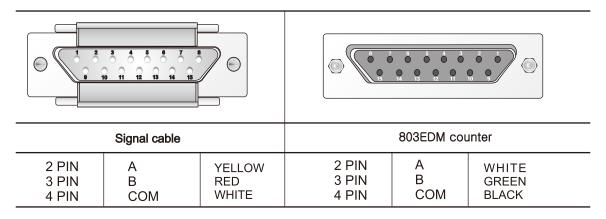
Counter	Scale
1 PIN : + (+5V) 2 PIN : A 3 PIN : B 4 PIN : Z 5 PIN : − (0V) 6 PIN : Shield	1 PIN : + (+5V) 2 PIN : A 3 PIN : B 4 PIN : Z 5 PIN : − (0V) 6 PIN : Shield

PIN & Color

PIN	Color	Signal
1 PIN	RED	+ (+5V)
2 PIN	YELLOW	A (+4.2V)
3 PIN	WHITE	B (+4.2V)
4 PIN	GREEN	Z (+0.4V)
5 PIN	BLACK	− (+0V)
6 PIN	BLACK SHIELD	Shield (GND)

PIN for DSC-703EDM Counter

Signal cable			803EDM counter		
2 PIN	A	YELLOW	2 PIN	A	WHITE
3 PIN	B	RED	3 PIN	B	GREEN
4 PIN	COM	WHITE	4 PIN	COM	BLACK

5. RS232 transmission format

1. OUTPUT CODE
RS-232: 115200bps, 8bit data, no parity, 1 stop bit

2. DATA FORMAT
Character String: 42 byte
Format: (4-axis display)

X	x	x	x	x	x	x	x	x	x	Y	y	y	y	y	y	y	y	y	y	Z	z	z	z	z	z	z	z	z	z	Q	q	q	q	q	q	q	q	q	q	CR	LF

X,Y,Z,Q : Axis data Start

xxxxxxxxx : X axis coordination value that has 9 digits including decimal point.
　　　　　　 Decimal position can be moved according to its scale setting.

yyyyyyyyy : Y axis coordination value that has 9 digits including decimal point.
　　　　　　 Decimal position can be moved according to its scale setting.

zzzzzzzzz: Z axis coordination value that has 9 digits including decimal point.
　　　　　　 Decimal position can be moved according to its scale setting.

qqqqqqqqq: Q axis coordination value that has 9 digits including decimal point.
　　　　　　 Decimal position can be moved according to its scale setting.

CR : carriage return(0x0d)
LF : line feed(0x0a)

(Ex.) X000132.00Y000001.00Z087234.00Q00123.097®①
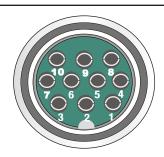
　　　　X = 123.00, Y=1.00, Z = 87234.00, Q=123.097
　　　　® : CR , ① : LF

6. NC Scale Pin Assignment

Counter (15-pin)			Cable (9-pin)		
2 PIN	RX	Green	2 PIN	TX	White
3 PIN	TX	White	3 PIN	RX	Green
5 PIN	GND	Black	5 PIN	GND	Black

Linear Scale

1 PIN	black	Vcc (+) 5V
2 PIN	yellow	A
3 PIN	white	B
4 PIN	green	$\overline{A}$
5 PIN	brown	$\overline{B}$
6 PIN	pink	Z
7 PIN	gray	$\overline{Z}$
8 PIN	shield	Shield (GND)
9 PIN	blue	GND (−) 0V

CERTIFICATE OF WARRANTY

SERVICE

● We, Dong Sahn JENIX Co., Ltd. suggest a limited warranty against various defects describes befow for two years from the date of purchasing, according to the regulation for the preservation of consumer's right.
● Please contact the sales agent or service center as defects were found,
● Please put down your purchasing date and the others below blanks.

Product	Digital Linear Scale (DRO)	Model	DSC800series
Date of Purchase		Serial number	
Agent		Amount	

GUIDANCE FOR THE COMPENSATION OF CONSUMER'S DAMAGE

KINDS of DAMAGES			DETAILS	
			Within the warranty period	After the warranty period
Damage happened in normal operation, or functional defect	Functional or mechanical defects happened in normal operation		Gratuitous Exchange	
	Defects happened during shipping or installing		"	
	Repairable	Recurrence of a trouble	"	
		Recurrence of same trouble for over 4 times continuously	"	
	No repairable	In case of stop producing of parts, or other reason	—	Exchange for new model as compensation
Functional defect which caused from mishandling or misuse conducted on purpose by users.	Defect caused from careless handling or repairing and remodeling.		Charged	Charged
	Defect caused from repairing by non authorized personnel.		"	"
	Defect from applying non−allowable Voltage (use only AC 220V)		"	"
	Defect or broken from dropping down when moving it another place, after installation.		"	"
Others	The cause of trouble is not from product itself but from exterior factor.		"	"
● In the case that the cause is from the natural calamity. ● When life span of consumable parts is almost done or over.			Charged	

Please be informed this certificate is not reissued.

 Dong Sahn Jenix Co.,Ltd.