

	wear offset value.
[-VALUE]	Quantitative offset value is reduced (minus) to the current wear offset value.
[+INPUT]	Keyed-in value is added (plus) to the wear offset value.
[UNDO]	When returning to previous value, [UNDO] key appears. When pressing, the value is returned to the previous value.
[UNDO C]	The [UNDO] key disappears. The quantitative offset value is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

(2) TOOL LIFE, TOOL COUNT SOFTKEY

10 + 2 SOFT KEY

<<	LIFEXT	LIFEND			RPLCPL	ALLCPL					+INPUT	
----	--------	--------	--	--	--------	--------	--	--	--	--	--------	--

5 + 2 SOFT KEY

<	LIFEXT	LIFEND	RPLCPL	ALLCPL	+INPUT	
---	--------	--------	--------	--------	--------	--

[LIFEXT]	Life extension value is added (plus) to the current life value.
[LIFEND]	The life value is counted to the counter to make the life end forcibly.
[RPLCPL]	The tool data is reset.
[ALLCPL]	All tools is reset to "[RPLCPL]".
[+INPUT]	Keyed-in value is added (plus).

The life extension value is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

2-2 GENERAL [WEAR] SCREEN

1. DISPLAY EXPLANATION

500/1000 16:32 05000 N00000
GENERAL [WEAR] T03 W03

T	W	X WEAR	Z WEAR	X LIMIT	Z LIMIT
0101	↓	0.000	0.000	0.500	0.500
0202	↓	0.000	0.000	0.500	0.500
0303	↓	0.000	0.000	0.500	0.500
0404	↓	0.000	0.000	0.500	0.500
0505	↓	0.000	0.000	0.500	0.500
0606	↓	-0.040	0.000	0.500	0.500
0707	↓	0.000	0.000	0.500	0.500
0808	↓	0.000	0.000	0.500	0.500
0909	↓	0.000	0.000	0.500	0.500
1010	↓	0.000	0.000	0.500	0.500

EDIT **** ** M/C 14:52:29

LIST WEAR LIFE CHANGE (OPRT) +

8.4 INCH SCREEN

GENERAL [WEAR] 09008 N00000
PARTS 10/100 ---

T03 W03

T	W	GEN	X	Z	R	X	Z
01	01	↓	0.000	0.000	0.000	0	0.500
02	02	↓	0.000	0.000	0.000	0	0.500
03	03	↓	0.000	0.000	0.000	0	0.500
04	04	↓	0.000	0.000	0.000	0	0.500
05	05	↓	0.000	0.000	0.000	0	0.500
06	06	↓	0.000	0.000	0.000	0	0.500
07	07	↓	0.000	0.000	0.000	0	0.500
08	08	↓	0.000	0.000	0.000	0	0.500
09	09	↓	0.000	0.000	0.000	0	0.500
10	10	↓	0.000	0.000	0.000	0	0.500
11	11	↓	0.000	0.000	0.000	0	0.500
12	12	↓	0.000	0.000	0.000	0	0.500
13	13	↓	0.000	0.000	0.000	0	0.500
14	14	↓	0.000	0.000	0.000	0	0.500
15	15	↓	0.000	0.000	0.000	0	0.500

NDT STOP *** 13:15:16

LIST WEAR LIFE CUT IN CYCLE CHANGE VIEW

10.4 INCH SCREEN

(1) X·Z·R WEAR OFFSET

X-axis wear offset value and Z-axis wear offset value and R-edge wear offset value are displayed. (+/- 10.0)

(2) DIRECTION OF IMAGINARY TOOL NOSE

The direction of the imaginary tool nose viewed from the tool nose center is displayed in the number.

(3) X·Z WEAR LIMIT

X wear limit value, Z wear limit value are displayed.

2. OPERATION SOFTKEYS

(1) X·Z·R WEAR OFFSET SOFTKEY

10 + 2 SOFTKEY

<	UNDO	UNDO C				+VALUE	-VALUE			+INPUT	
---	------	--------	--	--	--	--------	--------	--	--	--------	--

5 + 2 SOFTKEY

<	UNDO	UNDO C	+VALUE	-VALUE	+INPUT	
---	------	--------	--------	--------	--------	--

[+VALUE] Quantitative offset value is added (plus) to the current wear offset value.

[-VALUE] Quantitative offset value is reduced (minus) to the current wear offset value.

[+INPUT] Keyed-in value is added (plus) to the wear offset value.

[UNDO] When returning to previous value, [UNDO] key appears.
When pressing, the value is returned to the previous value.

[UNDO C] The [UNDO] key disappears.

The quantitative offset value is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

2-3 GENERAL [TOOL LIFE] SCREEN

1. DISPLAY EXPLANATION

500/1000 16:32 05000 N00000

GENERAL [TOOL LIFE] T03 W03

T	W	LIFE	COUNT	LFRM	FCST
0101	U	3000	1500	1500	5
0202	U	3000	0	3000	5
0303	U	3000	1500	1500	5
0404	U	3000	0	3000	5
0505	U	5000	1500	3500	5
0606	U	1000	500	500	10
0707	U	1000	500	500	10
0808	U	6000	3000	3000	10
0909	U	6000	3000	3000	10
1010	U	8000	4500	3500	10

EDIT**** *** ** 14:52:50 M/C

LIST WEAR LIFE CHANGE (COPY)

8.4 INCH SCREEN

GENERAL [TOOL LIFE] 09008 N00000

PARTS 10/100 ---

T03 W03

TOOL	WEAR	TOOL	LIFE	COUNT	LFRM	FCST	CHANGE	DATE
01	01	U	GENERAL	3000	0	3000	0	01-01-02
02	02	U	GENERAL	3000	1	2999	0	01-02-02
03	03	U	GENERAL	3000	1500	1492	0	02-01-02
04	04	U	GENERAL	3000	3	2997	0	02-02-02
05	05	U	GROOVE	5000	1500	3500	0	
06	06	U	DRILL	1000	500	500	0	
07	07	U	TAP	1000	500	500	0	
08	08	U	F END	6000	3000	3000	0	
09	09	U	PERFOR	6000	3000	3000	0	
10	10	U	CHAMFR	8000	2500	5500	0	
11	11	U	THREAD	1000	100	900	0	
12	12	U	BUTTON	1000	100	900	0	
13	13	U	STAPIT	1000	100	900	0	
14	14	U	B END	2000	200	1800	0	
15	15	U	VRSTIL	500	100	400	0	

MDT STOP*** ** 13:15:21

LIST WEAR LIFE CUT TH CYCLE CHANGE (COPY)

10.4 INCH SCREEN

(1) TOOL LIFE

The tool life value is displayed.

(2) TOOL COUNT

The tool count value is displayed.

(3) TOOL LIFE REMAINING (LFRM)

The tool life remaining value is displayed.

(TOOL LIFE - TOOL COUNT)

(4) TOOL CHANGE FORECAST (FCST)

It indicates before "how many times" a tool life value it outputs a tool change forecast.

(5) CHANGE TIME

It displays the tool exchange is later how many minutes.

2. OPERATION SOFTKEYS

(1) TOOL LIFE MANAGEMENT SOFTKEY

10 + 2 SOFT KEY

<<	LIFEXT	LIFEND			RPLCPL	ALLCPL				+INPUT	
----	--------	--------	--	--	--------	--------	--	--	--	--------	--

5 + 2 SOFT KEY

<	LIFEXT	LIFEND	RPLCPL	ALLCPL	+INPUT	
---	--------	--------	--------	--------	--------	--

[LIFEXT] Life extension value is added (plus) to the current life value.

[LIFEND] The life value is counted to the counter to make the life end forcedly.

[RPLCPL] The tool data is reset.

[ALLCPL] All tools is reset to "[RPLCPL]".

[+INPUT] Keyed-in value is added (plus).

The life extension value is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

2-4 GENERAL [CUTTING TIME] SCREEN

1. DISPLAY EXPLANATION

500/1000 16:33 05000 N00000

GENERAL [CUTTING TIME] T03 W03

T W	LIFE (M)	TOTAL (M)	LFRM (M)	FCST (M)
0101	500	50	450	5
0202	500	0	500	5
0303	500	50	450	5
0404	500	0	500	5
0505	1000	50	950	5
0606	100	50	50	10
0707	100	50	50	10
0808	600	150	450	10
0909	600	150	450	10
1010	800	300	500	10

EDIT **** ** 14:53:32 M/C

CUT. IN CYCLE OPER

GENERAL [CUTTING TIME] 09008 N00000

PARTS 10/100 --1--

T03 W03

TIME	YEAR	GROUP	GENERAL	DRILL	TAP	REAMER	CHAMFER	THREAD	BUTTON	STRAIT	B END	ORSTIL
01	01	GENERAL	0	0	0	0	0	0	0	0	0	0
02	02	GENERAL	0	0	0	0	0	0	0	0	0	0
03	03	GENERAL	0	0	0	0	0	0	0	0	0	0
04	04	GENERAL	0	0	0	0	0	0	0	0	0	0
05	05	GROOVE	0	0	0	0	0	0	0	0	0	0
06	06	DRILL	0	0	0	0	0	0	0	0	0	0
07	07	TAP	0	0	0	0	0	0	0	0	0	0
08	08	F END	0	0	0	0	0	0	0	0	0	0
09	09	REAMER	0	0	0	0	0	0	0	0	0	0
10	10	CHAMFER	0	0	0	0	0	0	0	0	0	0
11	11	THREAD	0	0	0	0	0	0	0	0	0	0
12	12	BUTTON	0	0	0	0	0	0	0	0	0	0
13	13	STRAIT	0	0	0	0	0	0	0	0	0	0
14	14	B END	0	0	0	0	0	0	0	0	0	0
15	15	ORSTIL	0	0	0	0	0	0	0	0	0	0

MDI STOP *** 13:15:26

LIST YEAR LIFE CUT IN CYCLE CHANGE

(1) CUTTING TIME LIFE (TIME: MINUTE)

The cutting time life value is displayed.

(2) CUTTING TIME TOTAL (TIME: MINUTE)

The cutting time total value is displayed.

(3) CUTTING TIME LIFE REMAINING (LFRM)

The cutting time life remaining value is displayed.

(LIFE - TOTAL)

(4) CUTTING TIME CHANGE FORECAST (FCST)

It indicates before "how many times" a cutting time life value it outputs a tool change forecast.

(5) CHANGE TIME

It displays the tool exchange is later how many minutes.

2. OPERATION SOFTKEYS

(1) TOOL LIFE MANAGEMENT SOFTKEY

10 + 2 SOFT KEY

<<	LIFEXT	LIFEND			RPLCPL	ALLCPL				+INPUT	
----	--------	--------	--	--	--------	--------	--	--	--	--------	--

5 + 2 SOFT KEY

<	LIFEXT	LIFEND	RPLCPL	ALLCPL	+INPUT	
---	--------	--------	--------	--------	--------	--

[LIFEXT] Life extension time is added (plus) to the current cutting time life value.

[LIFEND] The life value is counted to the counter to make the life end forcedly.

[RPLCPL] The tool data is reset.

[ALLCPL] All tools is reset to "[RPLCPL]".

[+INPUT] Keyed-in value is added (plus).

The life extension time is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

2-5 GENERAL [CYCLE ADDITION] SCREEN

1. DISPLAY EXPLANATION

500/1000 16:33 05000 N00000

GENERAL [CYCLE ADDITION] T03 W03

T W	CYCLE	COUNT	X-WEAR	Z-WEAR
0101	0	0	-0.001	-0.001
0202	10	0	-0.001	-0.001
0303	0	0	-0.001	-0.001
0404	10	0	-0.001	-0.001
0505	0	0	0.000	0.000
0606	30	16	0.000	-0.001
0707	0	0	0.000	0.000
0808	0	0	0.000	0.000
0909	0	0	0.000	0.000
1010	0	0	0.000	0.000

EDIT **** ** * 14:53:52 M/C

CUT. TM CYCLE COPY

8.4 INCH SCREEN

GENERAL [CYCLE ADDITION] 09008 N00000

PARTS 10/100 ---

T03 W03

NO.	NAME	TYPE	CYCLE	COUNT	X-WEAR	Z-WEAR	TIME	TIME
01	01	GENERAL	0	0	0.000	0.000	0	0
02	02	GENERAL	0	0	0.000	0.000	0	0
03	03	GENERAL	0	0	0.000	0.000	0	0
04	04	GENERAL	0	0	0.000	0.000	0	0
05	05	GROOVE	0	0	0.000	0.000	0	0
06	06	DRILL	0	0	0.000	0.000	0	0
07	07	TAP	0	0	0.000	0.000	0	0
08	08	F END	0	0	0.000	0.000	0	0
09	09	REAMER	0	0	0.000	0.000	0	0
10	10	CHAMFER	0	0	0.000	0.000	0	0
11	11	THREAD	0	0	0.000	0.000	0	0
12	12	BUTTON	0	0	0.000	0.000	0	0
13	13	STRAIT	0	0	0.000	0.000	0	0
14	14	B END	0	0	0.000	0.000	0	0
15	15	UPSTIL	0	0	0.000	0.000	0	0

MDI STOP *** 13:15:30

LIST WEAR LIFE CUT. TM CYCLE CHANGE COPY

10.4 INCH SCREEN

(1) CYCLE (ADDITION CYCLE)

The cyclic value to add is displayed.

If the number of times of tool use reaches a cyclic value, the specified amount of offset will be added.

(2) COUNT (TOOL COUNT)

The tool count value is displayed.

It is reset to 0 when the tool count reaches the set addition cycle value.

(3) X·Z WEAR (AMOUNT OF ADDITION TO WEAR OFFSET VALUE)

When the number of times of tool use reaches a cyclic value, the quantity added to X and Z-axis wear offset value is set up.

(4) + LIMIT (ADDITION LIMIT)

The number which stops the addition to the amount of offset is set up.

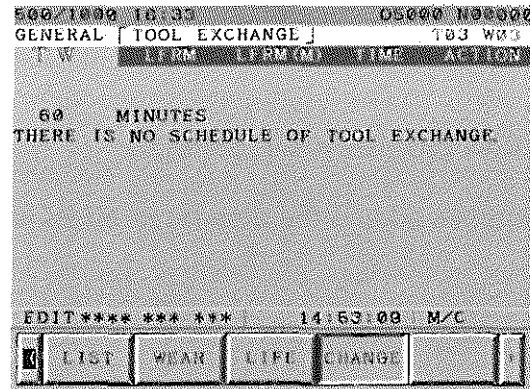
(5) + TIMES (ADDITION NUMBER OF TIMES)

The number of times adding the amount of offset is displayed.

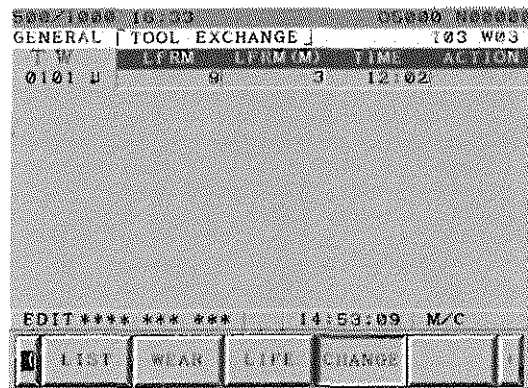
2-6 GENERAL [TOOL EXCHANGE] SCREEN

1. DISPLAY EXPLANATION

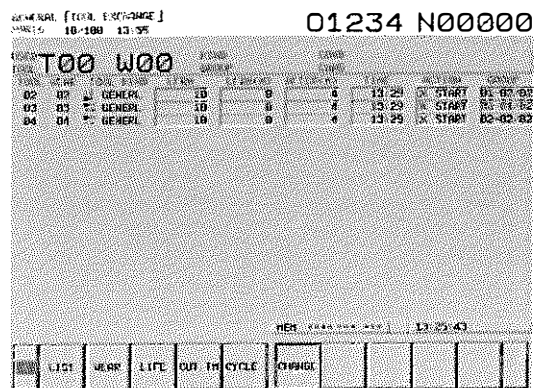
When the tool exchange is unnecessary



When the tool exchange is necessary



8.4 INCH SCREEN



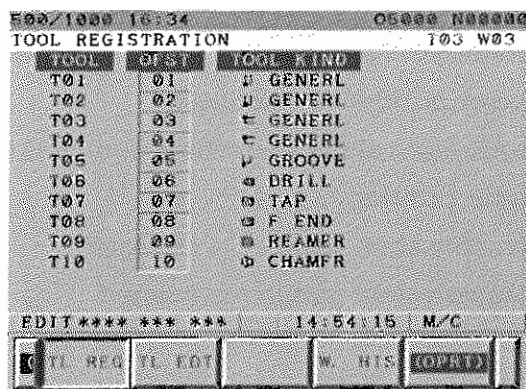
10.4 INCH SCREEN

In the time set on the system screen (Initial value: 60 minutes), exchanged tools are displayed.

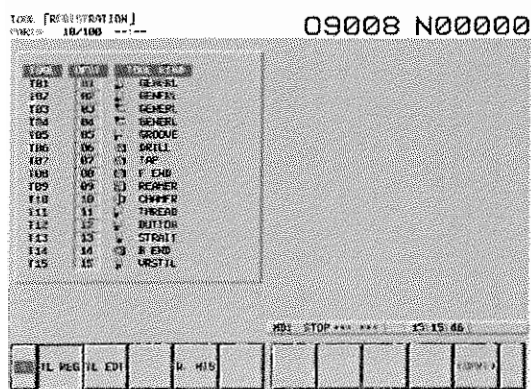
3 TOOL MENU

3-1 TOOL [REGISTRATION] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) TOOL NUMBER

The tool number set as tool data is displayed.

(2) WEAR NUMBER

The wear offset number set as tool data is displayed.

(3) TOOL KIND

The tool kind is displayed.

2. OPERATION SOFTKEYS

(1) TOOL REGISTRATION SOFTKEY

10 + 2 SOFTKEY

<<	EDIT					INSERT	ALTER	DELETE			
----	------	--	--	--	--	--------	-------	--------	--	--	--

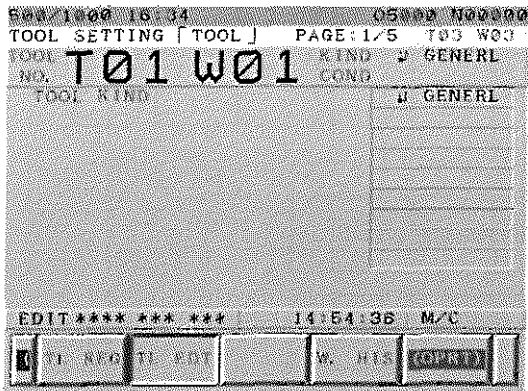
5 + 2 SOFTKEY

<	INSERT	ALTER	DELETE		EDIT	
---	--------	-------	--------	--	------	--

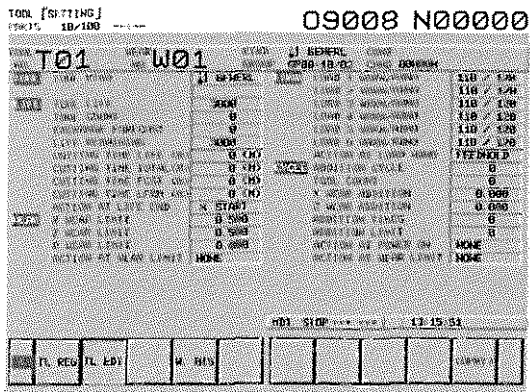
- [EDIT] The "TOOL SETTING" screen of the tool data number of a cursor position is displayed.
- [INSERT] The registration of the correction number is inserted in the cursor position.
- [ALTER] The compensation number is changed.
- [DELETE] The compensation number is deleted.

3-2 TOOL SETTING [TOOL] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) TOOL KIND

The tool kind is set.

2. OPERATION SOFTKEYS

(1) TOOL REGISTRATION SOFTKEY

10 + 2 SOFTKEY

<<	GENERL	THREAD	GROOVE	BUTTON	STRAIT	VRSTIL	DRILL	CHAMFR	F END	B END	+
<<	TAP	REAMER	BORING	FACE						NONE	+

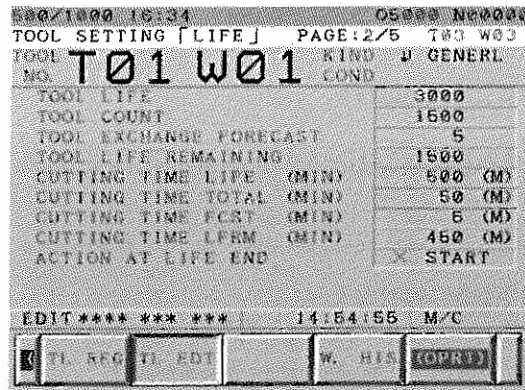
5 + 2 SOFTKEY

<	GENERL	THREAD	GROOVE	BUTTON	STRAIT	
<	VRSTIL	DRILL	CHAMFR	F END	B END	
<	TAP	REAMER	BORING	FACE	NONE	

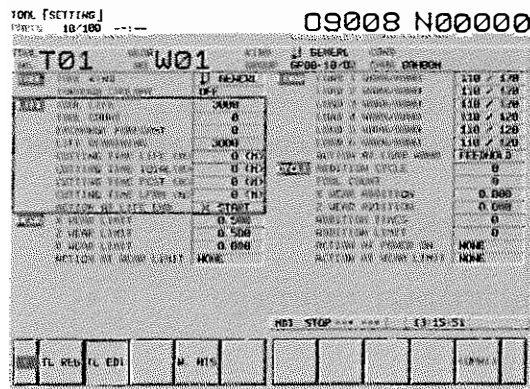
The tool kind is selected, and the tool sign is selected.

3-3 TOOL SETTING [LIFE] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) TOOL LIFE

The tool life is displayed.

(2) TOOL COUNT

The tool count is displayed.

(3) TOOL EXCHANGE FORECAST

It indicates before "how many times" a tool life value it outputs a tool change forecast.

(4) TOOL LIFE REMAINING

The tool life remaining value is displayed.

(5) CUTTING TIME LIFE (MIN)

The cutting time life value is displayed.

(6) CUTTING TIME TOTAL (MIN)

The cutting time total value is displayed.

(7) CUTTING TIME FCST (MIN)

It indicates before "how many times" a cutting time life value it outputs a tool change forecast.

(8) CUTTING TIME LFRM (MIN)

The cutting time life remaining value is displayed.
(LIFE - TOTAL)

(9) ACTION AT LIFE END

When the tool life is worn-out, the machine action is set up.

2. OPERATION SOFTKEYS

(1) TOOL LIFE MANAGEMENT SOFTKEY

10 + 2 SOFTKEY

<<	LIFEXT	LIFEND			RPLCPL	ALLCPL					+INPUT	
----	--------	--------	--	--	--------	--------	--	--	--	--	--------	--

5 + 2 SOFTKEY

<	LIFEXT	LIFEND	RPLCPL	ALLCPL	+INPUT	
---	--------	--------	--------	--------	--------	--

[LIFEXT] Life extension value is added (plus) to the current life value.

[LIFEND] The life value is counted to the counter to make the life end forcedly.

[RPLCPL] The tool data is reset.

[ALLCPL] All tools is reset to "[RPLCPL]".

[+INPUT] Keyed-in value is added (plus).

The life extension value is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

(2) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FO HLD	START	CYCLE	BOT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

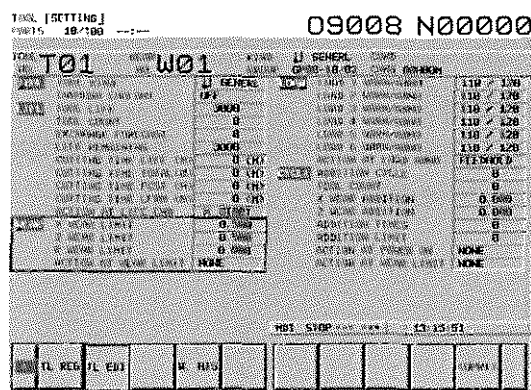
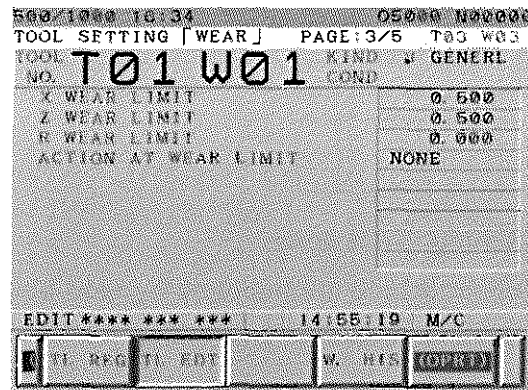
<	NONE	FO HLD	START	CYCLE	BOT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

[NONE]	Anything is not done.
[FD HLD]	Stops machine immediately by feed hold signal.
[START]	Stops machine after machining.
[CYCLE]	Stops machine next machining.
[BDT /]	Block skip signal becomes invalid.
[MACRO]	An interrupted type custom-macro program is executed.
[ALLSTP]	Stops machine immediately by feed hold signal. Spindle stops, too.

3-4 TOOL SETTING [WEAR] SCREEN

1. DISPLAY EXPLANATION



(1) X·WEAR LIMIT

X wear limit value is displayed.

"WEAR LIMIT" message is not generated for "0".

(2) Z·WEAR LIMIT

X wear limit value is displayed.

"WEAR LIMIT" message is not generated for "0".

(3) R·WEAR LIMIT

X wear limit value is displayed.

"WEAR LIMIT" message is not generated for "0".

(4) ACTION AT WEAR LIMIT

When the wear compensation value is limit, the machine action is set.

2. OPERATION SOFTKEYS

(1) X·Z·R WEAR OFFSET SOFTKEY

10 + 2 SOFT KEY

<<						+VALUE	-VALUE			+INPUT	
----	--	--	--	--	--	--------	--------	--	--	--------	--

5 + 2 SOFTKEY

<			+VALUE	-VALUE	+INPUT	
---	--	--	--------	--------	--------	--

[+VALUE] Quantitative offset value is added (plus) to the current wear offset value.

[-VALUE] Quantitative offset value is reduced (minus) to the current wear offset value.

[+INPUT] Keyed-in value is added (plus) to the wear offset value.

The quantitative offset value is set on "SYSTEM SETTING" screen of "SYSTEM MENU".

(2) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FD HLD	START	CYCLE	BDT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

<	NONE	FD HLD	START	CYCLE	BDT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

[NONE] Anything is not done.

[FD HLD] Stops machine immediately by feed hold signal.

[START] Stops machine after machining.

[CYCLE] Stops machine next machining.

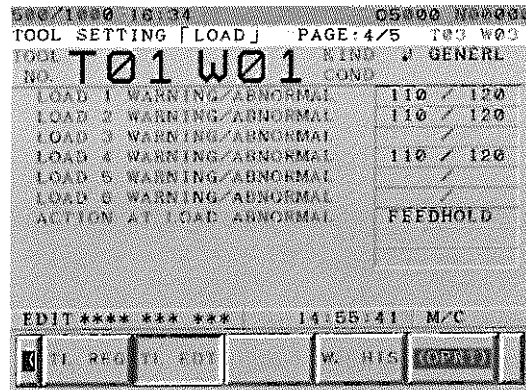
[BDT /] Block skip signal becomes invalid.

[MACRO] An interrupted type custom-macro program is executed.

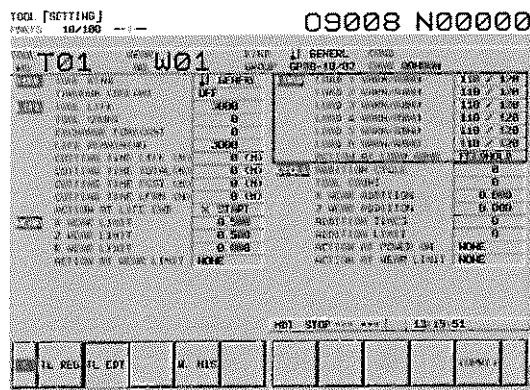
[ALLSTP] Stops machine immediately by feed hold signal.
Spindle stops, too.

3-5 TOOL SETTING [LOAD] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) WARNING VALUE AND ABNORMAL VALUE

The load warning value and load abnormal value are set up.
 When measuring the sampling, "SPL" is displayed.

(2) ACTION AT LOAD ABNORMAL

When load value is abnormal, the machine action is set up.

2. OPERATION SOFTKEYS

(1) LOAD WARNING VALUE AND ABNORMAL SOFTKEY

10 + 2 SOFTKEY

<<	SAMPLE	AXISPL	ALLSPL		ALLRST	ALLCLR					
----	--------	--------	--------	--	--------	--------	--	--	--	--	--

5 + 2 SOFTKEY

<	SAMPLE	AXISPL	ALLSPL	ALLRST	ALLCLR	
---	--------	--------	--------	--------	--------	--

- [SAMPLE] When next tool will be selected, it is set to sampling.
When pressing once more, the sampling set mode is released.
- [AXISPL] The sampling of an axial unit is set up.
When pressing once more, the sampling set mode is released.
- [ALLSPL] All items are made a sampling setup.
- [ALLRST] The sampling of all items is canceled.
Load warning and load abnormal sign (%) are cleared.
- [ALLCLR] All item value is set to 0.

(2) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FD HLD	START	CYCLE	BDT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

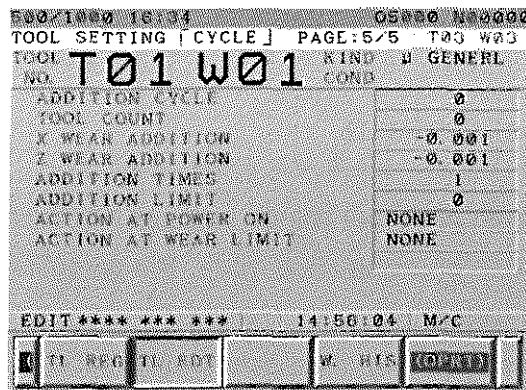
<	NONE	FD HLD	START	CYCLE	BDT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

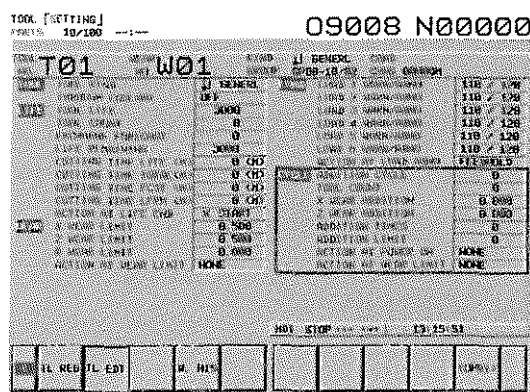
- [NONE] Anything is not done.
- [FD HLD] Stops machine immediately by feed hold signal.
- [START] Stops machine after machining.
- [CYCLE] Stops machine next machining.
- [BDT /] Block skip signal becomes invalid.
- [MACRO] An interrupted type custom-macro program is executed.
- [ALLSTP] Stops machine immediately by feed hold signal.
Spindle stops, too.

3-6 TOOL SETTING [CYCLE] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) ADDITION CYCLE

The cyclic value to add is displayed.

If the number of times of tool use reaches a cyclic value, the specified amount of offset will be added.

(2) TOOL COUNT

The tool count value is displayed.

It is reset to 0 when the tool count reaches the set addition cycle value.

(3) X·Z WEAR ADDITION

When the number of times of tool use reaches a cyclic value, the quantity added to X and Z-axis wear offset value is set up.

(4) ADDITION TIMES

The number of times adding the amount of offset is displayed.

(5) ADDITION LIMIT

The number which stops the addition to the amount of offset is set up.

(6) ACTION AT POWER ON

The reset action in the case of a power supply injection is set up.

(7) ACTION AT WEAR LIMIT

When the number of times of addition is limit, the machine action is set up.

2. OPERATION SOFTKEYS

(1) ACTION AT POWER ON SOFTKEY

10 + 2 SOFTKEY

<<	NONE	0 SET									
----	------	-------	--	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	NONE	0 SET				
---	------	-------	--	--	--	--

[NONE]

It does not reset.

[0 SET]

The tool count and the addition number of times is reset to 0.

(2) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FD HLD	START	CYCLE	BOT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFT KEY

<	NONE	FD HLD	START	CYCLE	BOT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

[NONE]

Anything is not done.

[FD HLD]

Stops machine immediately by feed hold signal.

[START]	Stops machine after machining.
[CYCLE]	Stops machine next machining.
[BDT /]	Block skip signal becomes invalid.
[MACRO]	An interrupted type custom-macro program is executed.
[ALLSTP]	Stops machine immediately by feed hold signal. Spindle stops, too.

3-7 TOOL WEAR UPDATE HISTORY SCREEN

Updating record of a wear compensation value is displayed to the past 20 times.

1. DISPLAY EXPLANATION

000/1000 16:35 05000 N00000
WEAR UPDATE HISTORY PAGE:1/2 T03 W03

NO.	W	AXIS	BEFORE	RENEWAL	TIME
01	03	X	-0.001	0.000	14:29:38
02	03	Z	-0.001	0.000	14:29:36
03	01	Z	-0.001	0.000	14:29:34
04	03	Z	0.000	-0.001	14:28:26
05	03	X	0.000	-0.001	14:28:26
06	01	Z	0.000	-0.001	14:27:57
07	01	X	0.001	0.000	14:27:57
08	01	X	0.000	0.001	15:15:57
09	01	X	0.001	0.000	15:14:57
10	01	X	0.000	0.001	15:14:58

EDIT **** ** 14:56:27 M/C

TL REG TL EDT W R15

8.4 INCH SCREEN

T03 W03 09008 N00000
T03 W03

NO.	W	AXIS	BEFORE	RENEWAL	TIME
01	03	X	0.000	0.000	15:32:00
02	03	Z	0.000	0.000	15:34:01
03	04	Z	0.000	0.000	15:34:00
04	03	Z	0.001	0.000	15:34:00
05	02	Z	0.000	0.000	15:34:00
06	01	X	0.000	0.000	15:33:00
07	15	X	0.010	0.000	15:33:00
08	14	X	0.011	0.000	15:33:00
09	13	X	0.012	0.000	15:33:00
10	12	X	0.000	0.000	15:33:00

MDI STOP *** 13:13:59

TL REG TL EDT W R15

10.4 INCH SCREEN

(1) WEAR COMPENSATION No.

The No. of the renewed wear compensation value is displayed.

(2) AXIS NAME

The axis name of the renewed wear compensation value is displayed.

(3) BEFORE

The wear compensation value before the renewal is displayed.

(4) RENEWAL

The renewed wear compensation value is displayed.

(5) TIME

The renewal time of the renewed wear compensation value is displayed.

2. OPERATION SOFTKEYS

(1) WEAR UPDATE HISTORY SOFTKEY

10 + 2 SOFTKEY

<<												DELETE	
----	--	--	--	--	--	--	--	--	--	--	--	--------	--

5 + 2 SOFTKEY

<					DELETE	
---	--	--	--	--	--------	--

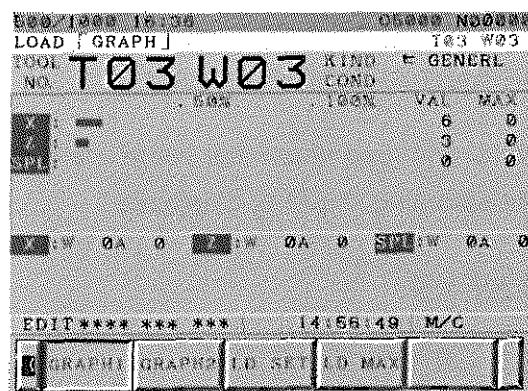
[DELETE]

The history is deleted.

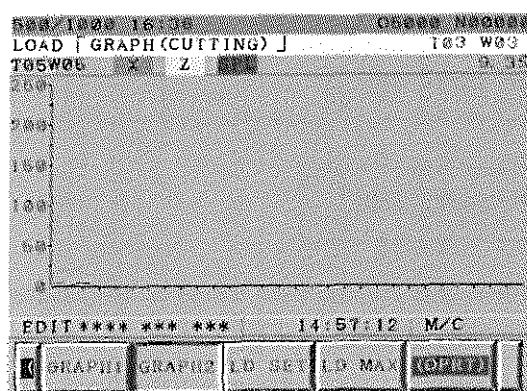
4 LOAD MENU

4-1 LOAD GRAPH SCREEN

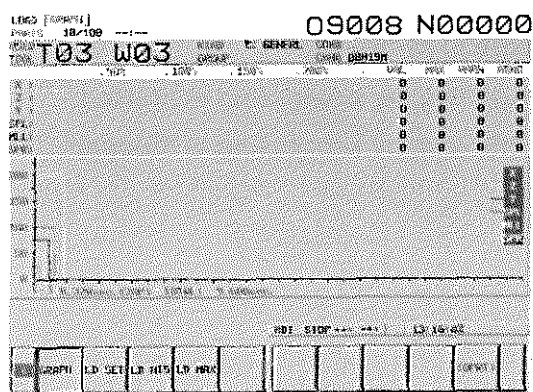
1. DISPLAY EXPLANATION



8.4 INCH SCREEN



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) LOAD GRAPH

The load value of each axis is displayed by the bar graph.
0~255%

(2) LOAD VALUE AND LOAD MAXIMUM VALUE

The load value and the load maximum value during cutting are displayed.

Load value indicated load torque value with 0-255%.

(3) WARNING VALUE AND ABNORMAL VALUE

The load warning value and load abnormal value are displayed.
When measuring the sampling, "-S-" is displayed.

2. OPERATION SOFTKEYS

(1) LOAD VALUE LINE GRAPH SOFTKEY

10 + 2 SOFTKEY

<<	LONG	SHORT	REDRAW	START	STOP						
----	------	-------	--------	-------	------	--	--	--	--	--	--

5 + 2 SOFTKEY

<	LONG	SHORT	REDRAW	START	STOP	
---	------	-------	--------	-------	------	--

[LONG] Time scale (horizontal axis) is lengthened.
MAX:139.0 SEC.

[SHORT] Time scale (horizontal axis) is shortened.
MIN:9.3 SEC.

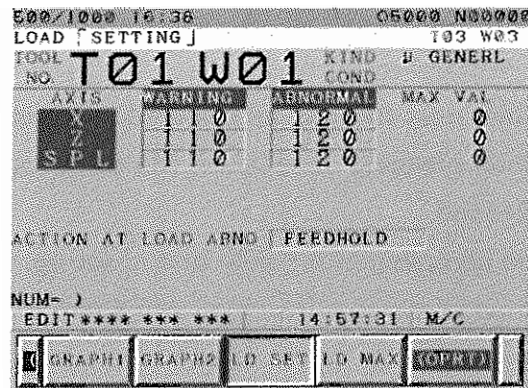
[REDRAW] Graph is re-drawn.

[START] Graph display processing is started.

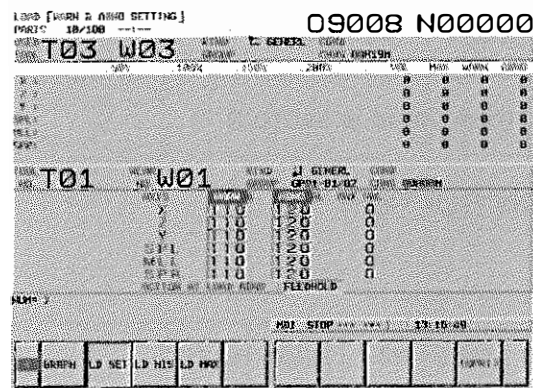
[STOP] Graph display processing is stopped.

4-2 WARNING VALUE & ABNORMAL VALUE SETTING SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) WARNING VALUE AND ABNORMAL VALUE

The load warning value and load abnormal value are set up.
When measuring the sampling, "SAMPLE" is displayed.

(2) LOAD MAXIMUM VALUE

The load maximum value at the time of cutting is displayed last time.

(3) ACTION AT LOAD ABNORMAL

When load value is abnormal, the machine action is set up.

2. OPERATION SOFTKEYS

(1) LOAD WARNING VALUE AND ABNORMAL SOFTKEY

10 + 2 SOFTKEY

<<	SAMPLE	AXISPL	ALLSPL		ALLRST	ALLCLR					
----	--------	--------	--------	--	--------	--------	--	--	--	--	--

5 + 2 SOFTKEY

<	SAMPLE	AXISPL	ALLSPL	ALLRST	ALLCLR	
---	--------	--------	--------	--------	--------	--

- [SAMPLE] When next tool will be selected, it is set to sampling.
When pressing once more, the sampling set mode is released.
- [AXISPL] The sampling of an axial unit is set up.
When pressing once more, the sampling set mode is released.
- [ALLSPL] All items are made a sampling setup.
- [ALLRST] The sampling of all items is canceled.
Load warning and load abnormal sign (%) are cleared.
- [ALLCLR] All item value is set to 0.

(2) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FD HLD	START	CYCLE	BDT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

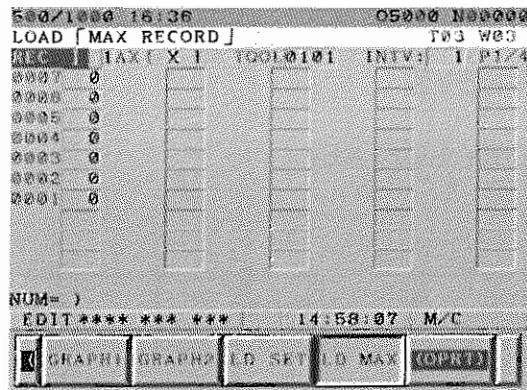
<	NONE	FD HLD	START	CYCLE	BDT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

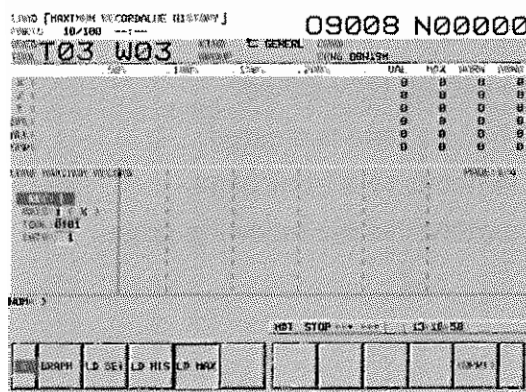
- [NONE] Anything is not done.
- [FD HLD] Stops machine immediately by feed hold signal.
- [START] Stops machine after machining.
- [CYCLE] Stops machine next machining.
- [BDT /] Block skip signal becomes invalid.
- [MACRO] An interrupted type custom-macro program is executed.
- [ALLSTP] Stops machine immediately by feed hold signal.
Spindle stops, too.

4-3 LOAD MAXIMUN HISTORY SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) SETTING No.

A setting number is displayed. A setup of a load maximum history is a maximum of three.

(2) AXIS No.

The axial number which takes record is set up.

(3) TOOL No.

The tool number which takes record is set up.

(4) RECORD INTERVAL

The interval which takes record is set up.

It records by 1 each time. It records once that it is 5 on 5 times.

(5) PROCESSING NUMBER AND LOAD MAXIMUM

The processing number and load maximum when recording are displayed.

A processing number will begin from 1, if the all clearance of a history is performed.

2. OPERATION SOFTKEYS

(1) MAXIMUM HISTORY SOFTKEY

10 + 2 SOFTKEY

<<	REC 1	REC 2	REC 3			ALLCLR			PAGE ↑	PAGE ↓	
----	-------	-------	-------	--	--	--------	--	--	--------	--------	--

5 + 2 SOFTKEY

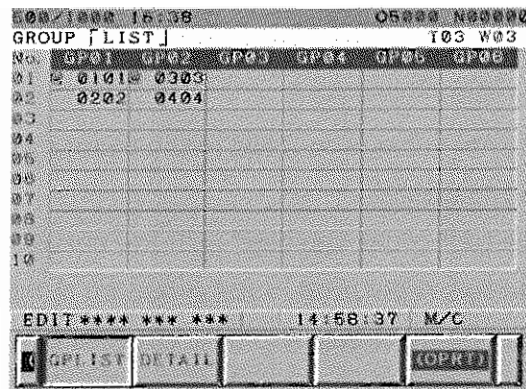
<	REC 1	REC 2	REC 3		ALLCLR	
---	-------	-------	-------	--	--------	--

- | | |
|-----------|-------------------------------------|
| [REC 1-3] | The setting is switched. |
| [ALLCLR] | All history data is cleared. |
| [PAGE ↑] | It switches to a front page. |
| [PAGE ↓] | It switches to the following page . |

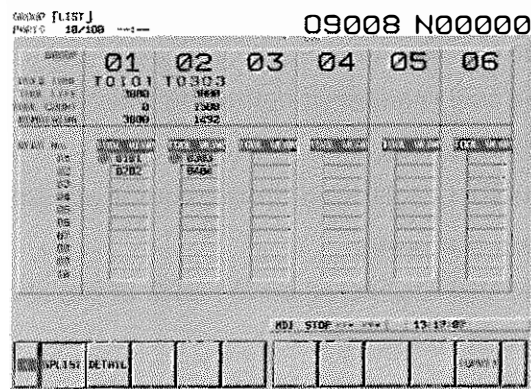
5 GROUP MENU

5-1 GROUP [LIST] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) GROUP REGISTRATION TOOLS

Each tool number registered in the group is displayed.

Though maximum 10 tools can be registered, double registration is impossible.

"@" is displayed on the left of the tool number chosen within the group.

2. OPERATION SOFTKEYS

(1) GROUP REGISTRATION SOFTKEY

10 + 2 SOFTKEY

<<		LIFEND		RPLCPL	ALLCPL	SKIP		INSERT	DELETE	ALLDEL	
----	--	--------	--	--------	--------	------	--	--------	--------	--------	--

5 + 2 SOFTKEY

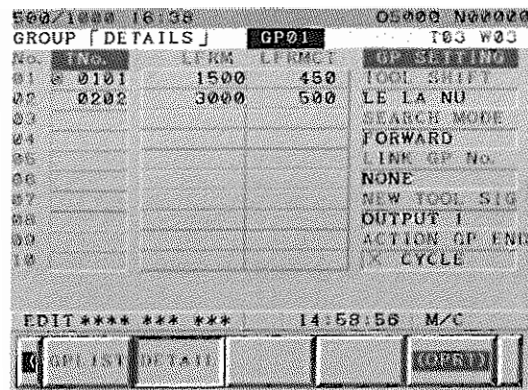
<		LIFEND		RPLCPL	ALLCPL	+
---	--	--------	--	--------	--------	---

<	INSERT	DELETE	ALLDEL		SKIP	+
---	--------	--------	--------	--	------	---

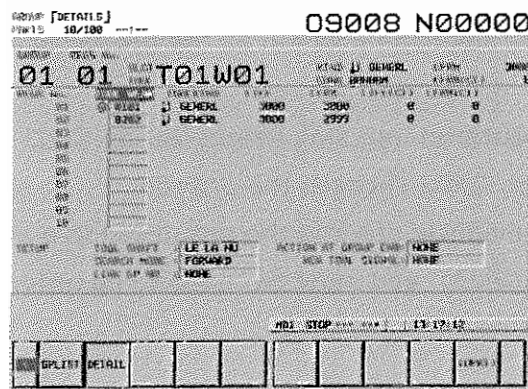
- [LIFEND] The life value is counted to the counter to make the life end forcedly.
- [RPLCPL] The tool count selected with the cursor is reset to 0.
- [ALLCPL] All tools registered in the group on cursor position are completely changed (count reset to 0).
The monitor searches the group tool from top.
- [SKIP] Next usable tool is forcedly selected.
- [INSERT] The tool No. keyed-in to the cursor position is inserted.
The tool registered below the cursor position is shifted below one by one.
- [DELETE] The tool registered on the cursor position is deleted from the group.
The tool registered on the back of the above position is moved to the left.
- [ALLDEL] All the tools registered in the group are deleted.

5-2 GROUP [DETAILS] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) GROUP REGISTRATION TOOLS

Each tool number registered in the group is displayed.

Though maximum 10 tools can be registered, double registration is impossible.

"@" is displayed on the left of the tool number chosen within the group.

GROUP SETTING

(2) TOOL SHIFT

The tool change conditions for group registration tools are set.

The tool life end, no use, load warning and load abnormal can be set as the tool change conditions.

(3) SEARCH MODE

For the searching method of group registration tool, there are forward search mode and research mode.

(4) ACTION AT GROUP END

When the life of final tool in the group is worn out, the machine action is set.

(5) NEW TOOL SIGNAL

When selecting a new tool in the group, a new tool select signal can be outputted.

(6) LINK GROUP

The tool of the same selection position as the group set as Link GP No. is chosen.

When GP01 was registered into Link Group No. by GP02 and GP01 chooses the 3rd tool, GP02 chooses the 3rd tool.

In this case, it is previously ordered the group call in a processing program in T0199 (GP01), and must be made to be ordered it in T0299 (GP02) after that.

2. OPERATION SOFTKEYS

(1) GROUP REGISTRATION SOFTKEY

10 + 2 SOFTKEY

<<		LIFEND		RPLCPL	ALLCPL	SKIP		INSERT	DELETE	ALLDEL	
----	--	--------	--	--------	--------	------	--	--------	--------	--------	--

5 + 2 SOFTKEY

<		LIFEND		RPLCPL	ALLCPL	+
---	--	--------	--	--------	--------	---

<	INSERT	DELETE	ALLDEL		SKIP	+
---	--------	--------	--------	--	------	---

[LIFEND] The life value is counted to the counter to make the life end forcedly.

[RPLCPL] The tool count selected with the cursor is reset to 0.

[ALLCPL] All tools registered in the group on cursor position are completely changed (count reset to 0).

The monitor searches the group tool from top.

[SKIP]	Next usable tool is forcedly selected.
[INSERT]	The tool No. keyed-in to the cursor position is inserted. The tool registered below the cursor position is shifted below one by one.
[DELETE]	The tool registered on the cursor position is deleted from the group. The tool registered on the back of the above position is moved to the left.
[ALLDEL]	All the tools registered in the group are deleted.

(2) TOOL SHIFT SOFTKEY

10 + 2 SOFTKEY

<<	LIFEND	LDABNO	LDWARN	NO USE							
----	--------	--------	--------	--------	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	LIFEND	LDABNO	LDWARN	NO USE		
---	--------	--------	--------	--------	--	--

[LIFEND]	In case of life end, the tool is changed to next tool.
[LDABNO]	If load abnormal occurs, the tool is changed to next tool.
[LDWARN]	If load warning occurs, the tool is changed to next tool.
[NO USE]	In case of NO USE, the tool is changed to next tool. [NO USE] may occur when the MEASURING MONITOR (option) is used.

(3) SEACH MODE SOFTKEY

10 + 2 SOFTKEY

<<	FORWRD	RESRCH									
----	--------	--------	--	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	FORWRD	RESRCH				
---	--------	--------	--	--	--	--

[FORWRD]	Group tool search method becomes forward search mode.
[RESRCH]	Group tool search method becomes research mode.

(4) NEW TOOL SELECT SIGNAL SOFTKEY

10 + 2 SOFTKEY

<<	NONE	OUT 1	OUT 2								
----	------	-------	-------	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	NONE	OUT 1	OUT 2			
---	------	-------	-------	--	--	--

- [NONE] New tool select signal does not output.
- [OUT 1] New tool select signal outputs.
When the first tool is selected, it is not output.
- [OUT 2] New tool select signal outputs.
When the first tool is selected, the signal is output.

(5) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FD HLD	START	CYCLE	BDT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

<	NONE	FD HLD	START	CYCLE	BDT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

- [NONE] Anything is not done.
- [FD HLD] Stops machine immediately by feed hold signal.
- [START] Stops machine after machining.
- [CYCLE] Stops machine next machining.
- [BDT /] Block skip signal becomes invalid.
- [MACRO] An interrupted type custom-macro program is executed.
- [ALLSTP] Stops machine immediately by feed hold signal.
Spindle stops, too.

6 RUN MENU

6-1 MACHINE RUN [LIST] SCREEN

1. DISPLAY EXPLANATION

0500/1000 10/19		05000 N00000	
MACHINE RUN [LIST] 103 W03			
REQUIRED	1000	DAY P-ON	1:30'10
PARTS CT	500	OPRT	7'12
TOTAL CT	12500	MON P-ON	1:30'10
DAY COUNT	8	OPRT	7'12
MON COUNT	130008		
PROGRAM	START	FINISH	CYCLE
5000	14:51:04	14:51:16	12
5000	14:47:40	14:48:54	1'07
5000	14:32:59	14:34:07	1'07
5000	14:31:40	14:32:56	1'07
5000	14:30:35	14:31:43	1'07
EDIT*** ** ** 14:59:22 M/C			
LIST	PARTS	COUNT	TIME

8.4 INCH SCREEN

MACHINE RUN [LIST]		09008 N00000	
PARTS COUNTER			
REQUIRED	100		
PARTS CT	10		
TOTAL CT	10100		
DAY COUNT	10		
MON COUNT	10		
TODAY OPERAT TIME		MONTH OPERAT TIME	
POWER ON	10' 40	POWER ON	10' 40
OPERAT	1' 04	OPERAT	1' 04
CUTTING	0	CUTTING	0
WASTE	5%	WASTE	5%
NOI STOP *** 13:17:21			
LIST	COUNT	TIME	PC UNIT PC SET

10.4 INCH SCREEN

(1) PARTS COUNTER

The required parts, the parts count, the total value of parts are displayed.

(2) OPERAT TIME

The total value of power on time, operation total time, and cutting total time are displayed.

(3) MACHINED RESULTS

Machined results (program No., start time, finish time, cycle time) are

displayed.

In single block operation, it is not displayed on machined results.

2. OPERATION SOFTKEYS

(1) COUNTER SOFTKEY

10 + 2 SOFTKEY

<<					CONT 0	+VALUE	-VALUE			+INPUT	
----	--	--	--	--	--------	--------	--------	--	--	--------	--

5 + 2 SOFTKEY

<	CONT 0	+VALUE	-VALUE		+INPUT	
---	--------	--------	--------	--	--------	--

- [CONT 0] The number of parts count is reset to 0.
- [+VALUE] Quantitative parts value is added (plus) to the current value.
- [-VALUE] Quantitative parts value is reduced (minus) to the current value.
- [+INPUT] Keyed-in value is added (plus).

The quantitative parts value is set on "OPERATION SETTING" screen of "SYSTEM MENU".

6-2 MACHINE RUN [PARTS COUNTER] SCREEN

1. DISPLAY EXPLANATION

500/1000 10:30 05000 N00000
MACHINE RUN [PARTS COUNTER] T83 W03

PARTS REQUIRED	1000
PARTS COUNT	500
PARTS TOTAL	12508
TODAY COUNT	8
MONTH COUNT	130008

↓ PAGE

EDIT **** *** *** 14:59:41 M/C

[K] LIST PARTS COUNT TIME (OPRT)

8.4 INCH SCREEN

0/0 00000 N00000
MACHINE RUN [PARTS COUNTER] T84 W00

COUNT-UP M CODE M12

FORECAST

ACTION AT ALARM RESET NONE

ACTION AT POWER ON NONE

ACTION AT COUNT UP NONE

↓ PAGE

EDIT **** *** *** 14:59:41 M/C

[K] LIST PARTS COUNT TIME (OPRT)

8.4 INCH SCREEN

MACHINE RUN [PARTS COUNTER] 09008 N00000
PARTS 10/100

PARTS COUNTER		COUNTER	
PARTS REQUIRED	100	PARTS REQUIRED	200
PARTS COUNT	10	PARTS COUNT	10
PARTS TOTAL	10100	PARTS TOTAL	20200
TODAY COUNT	10	TODAY COUNT	20
MONTH COUNT	10	MONTH COUNT	20
LAST MONTH COUNT	10	LAST MONTH COUNT	20
PERCENTAGE OF COUNT-UP	0	PERCENTAGE OF COUNT-UP	0
ACTION AT ALARM RESET	NONE	ACTION AT ALARM RESET	NONE
ACTION AT POWER ON	NONE	ACTION AT POWER ON	NONE
ACTION AT COUNT-UP M START	NONE	ACTION AT COUNT-UP M START	NONE

↓ PAGE

STOP *** 13:12:26

[K] LIST COUNT TIME PC DAY PC SET

10.4 INCH SCREEN

(1) PARTS REQUIRED

The parts required is displayed. (0~999999)

(2) PARTS COUNT

Current parts count is displayed. (0~999999)

(3) PARTS TOTAL COUNT

Current parts total count is displayed. (0~99999999)

(4) TODAY COUNT

Today's number of parts is displayed.

(5) MONTH COUNT

The number of parts this month is displayed.

(6) FORECAST

The forecast value is set.

(7) ACTION AT ALARM REST

The reset action of alarm reset button is set up.

(8) ACTION AT POWER ON

It sets up whether the number of parts counter is reset at the time of a power supply injection.

(9) ACTION AT COUNT-UP

Machine action when the number of parts count reaches the number of parts required is set up.

2. OPERATION SOFTKEYS

(1) COUNTER SOFTKEY

10 + 2 SOFTKEY

<<					CONT 0	+VALUE	-VALUE			+INPUT	
----	--	--	--	--	--------	--------	--------	--	--	--------	--

5 + 2 SOFTKEY

<	CONT 0	+VALUE	-VALUE		+INPUT	
---	--------	--------	--------	--	--------	--

[CONT 0] The number of parts count is reset to 0.

[+VALUE] Quantitative parts value is added (plus) to the current value.

[-VALUE] Quantitative parts value is reduced (minus) to the current value.

[+INPUT] Keyed-in value is added (plus).

The quantitative parts value is set on "OPERATION SETTING" screen of "SYSTEM MENU".

(2) ALARM RESET SOFTKEY

10 + 2 SOFTKEY

<<	NONE	ALMRST	AUTO 0								
----	------	--------	--------	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	NONE	ALMRST	AUTO 0			
---	------	--------	--------	--	--	--

[NONE] It isn't reset.

[ALMRST] It is reset when alarm reset button is pushed.

[AUTO 0] It is reset at the time of the part completion.

(3) POWER ON SOFTKEY

10 + 2 SOFTKEY

<<	NONE	0 CLEAR									
----	------	---------	--	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	NONE	0 CLEAR				
---	------	---------	--	--	--	--

[NONE] The count number isn't cleared.

[0CLEAR] The count number is cleared.

(4) MACHINE ACTION SOFTKEY

10 + 2 SOFT KEY

<<	NONE	FD HLD	START	CYCLE	BDT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

<	NONE	FD HLD	START	CYCLE	BDT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

[NONE] Anything is not done.

[FD HLD] Stops machine immediately by feed hold signal.

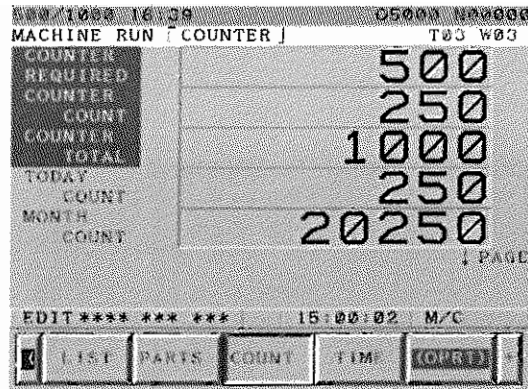
[START] Stops machine after machining.

[CYCLE] Stops machine next machining.

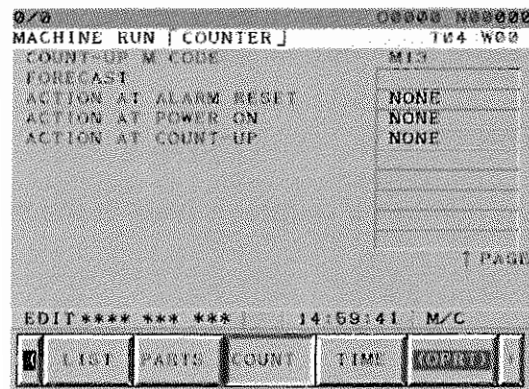
[BDT /]	Block skip signal becomes invalid.
[MACRO]	An interrupted type custom-macro program is executed.
[ALLSTP]	Stops machine immediately by feed hold signal. Spindle stops, too.

6-3 MACHINE RUN [COUNTER] SCREEN

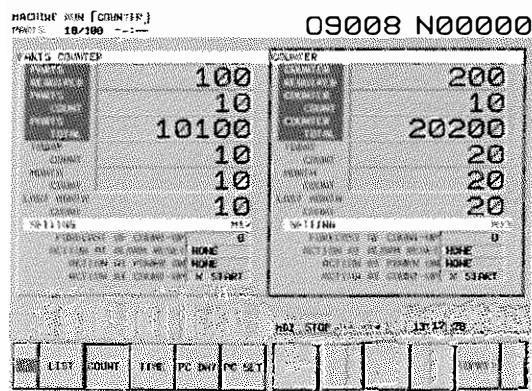
1. DISPLAY EXPLANATION



8.4 INCH SCREEN



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) COUNTER REQUIRED

The counter required is displayed. (0~999999)

(2) COUNTER COUNT

Current counter count is displayed. (0~999999)

(3) COUNTER TOTAL COUNT

Current counter total count is displayed. (0~99999999)

(4) TODAY COUNT

Today's number of counter is displayed.

(5) MONTH COUNT

The number of counter this month is displayed.

(6) FORECAST

The forecast value is set.

(7) ACTION AT ALARM REST

The reset action of alarm reset button is set up.

(8) ACTION AT POWER ON

It sets up whether the number of counter is reset at the time of a power supply injection.

(9) ACTION AT COUNT-UP

Machine action when the number of counter count reaches the number of counter required is set up.

2. OPERATION SOFTKEYS

(1) COUNTER SOFTKEY

10 + 2 SOFTKEY

⏪					CONT 0	+VALUE	-VALUE			+INPUT	
---	--	--	--	--	--------	--------	--------	--	--	--------	--

5 + 2 SOFTKEY

<	CONT 0	+VALUE	-VALUE		+INPUT	
---	--------	--------	--------	--	--------	--

[CONT 0]

The number of counter count is reset to 0.

[+VALUE]

Quantitative parts value is added (plus) to the current value.

[-VALUE]

Quantitative parts value is reduced (minus) to the current value.

[+INPUT] Keyed-in value is added (plus).

The quantitative parts value is set on "OPERATION SETTING" screen of "SYSTEM MENU".

(2) ALARM RESET SOFTKEY

10 + 2 SOFTKEY

<<	NONE	ALMRST	AUTO 0								
----	------	--------	--------	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	NONE	ALMRST	AUTO 0			
---	------	--------	--------	--	--	--

[NONE] It isn't reset.

[ALMRST] It is reset when alarm reset button is pushed.

[AUTO 0] It is reset at the time of the part completion.

(3) POWER ON SOFTKEY

10 + 2 SOFTKEY

<<	NONE	0 CLEAR									
----	------	---------	--	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	NONE	0 CLEAR				
---	------	---------	--	--	--	--

[NONE] The count number isn't cleared.

[0CLEAR] The count number is cleared.

(4) MACHINE ACTION SOFTKEY

10 + 2 SOFTKEY

<<	NONE	FD HLD	START	CYCLE	BDT /	MACRO	ALLSTP				
----	------	--------	-------	-------	-------	-------	--------	--	--	--	--

5 + 2 SOFTKEY

<	NONE	FD HLD	START	CYCLE	BDT /	
---	------	--------	-------	-------	-------	--

<	MACRO	ALLSTP				
---	-------	--------	--	--	--	--

[NONE] Anything is not done.

[FD HLD] Stops machine immediately by feed hold signal.

[START] Stops machine after machining.

[CYCLE] Stops machine next machining.

[BDT /]	Block skip signal becomes invalid.
[MACRO]	An interrupted type custom-macro program is executed.
[ALLSTP]	Stops machine immediately by feed hold signal. Spindle stops, too.

6-4 MACHINE RUN [TIME] SCREEN

1. DISPLAY EXPLANATION

The screenshot shows the 'MACHINE RUN [TIME]' screen on an 8.4 inch monitor. The display is divided into several sections. At the top, it shows 'MACHINE RUN [TIME]' and '103 W03'. Below this, there are two columns of data: 'TODAY OPERAT TIME' and 'MONTH OPERAT TIME'. Each column has three rows: 'POWER ON', 'OPERAT', and 'CUTTING', followed by a 'RATE' row. The 'TODAY' column shows values like 1:31'19, 7'12, 0, and 7%. The 'MONTH' column shows 1:31'19, 7'12, 0, and 7%. Below these, there are two more columns: 'LAST MONTH GPRT TIME' and 'TOTAL OPERAT TIME'. The 'LAST MONTH' column shows 14'29, 0, 0, and ---%. The 'TOTAL' column shows 3:45'23, 7'12, 0, and 3%. At the bottom, there is a status bar with 'EDIT **** *** ***' and '16:00:22 M/C'. Below the status bar is a row of buttons: 'LIST', 'PARTS', 'COUNT', 'TIME', and 'OPRRT'.

MACHINE RUN [TIME]		103 W03	
TODAY OPERAT TIME		MONTH OPERAT TIME	
POWER ON	1:31'19	POWER ON	1:31'19
OPERAT	7'12	OPERAT	7'12
CUTTING	0	CUTTING	0
RATE	7%	RATE	7%
LAST MONTH GPRT TIME		TOTAL OPERAT TIME	
POWER ON	14'29	POWER ON	3:45'23
OPERAT	0	OPERAT	7'12
CUTTING	0	CUTTING	0
RATE	---	RATE	3%
EDIT **** *** *** 16:00:22 M/C			
[LIST] [PARTS] [COUNT] [TIME] [OPRRT]			

8.4 INCH SCREEN

The screenshot shows the 'MACHINE RUN [TIME]' screen on a 10.4 inch monitor. The display is more detailed than the 8.4 inch version. It shows 'MACHINE RUN [TIME]' and '09008 N00000'. Below this, there are two columns of data: 'TODAY OPERAT TIME' and 'MONTH OPERAT TIME'. Each column has three rows: 'POWER ON', 'OPERAT', and 'CUTTING', followed by a 'RATE' row. The 'TODAY' column shows values like 1:0'52, 1'04, 0, and 5%. The 'MONTH' column shows 1:0'52, 1'04, 0, and 5%. Below these, there are two more columns: 'LAST MONTH GPRT TIME' and 'TOTAL OPERAT TIME'. The 'LAST MONTH' column shows 2:23'57, 1'04, 0, and 0%. The 'TOTAL' column shows 59:22'16, 5'23, 0, and 0%. At the bottom, there is a status bar with 'M01 STOP' and '13:17:33'. Below the status bar is a row of buttons: 'LIST', 'COUNT', 'TIME', 'PC DRV', 'PC SET', and 'OPRRT'.

MACHINE RUN [TIME]		09008 N00000	
TODAY OPERAT TIME		MONTH OPERAT TIME	
POWER ON	1:0'52	POWER ON	1:0'52
OPERAT	1'04	OPERAT	1'04
CUTTING	0	CUTTING	0
RATE	5%	RATE	5%
LAST MONTH GPRT TIME		TOTAL OPERAT TIME	
POWER ON	2:23'57	POWER ON	59:22'16
OPERAT	1'04	OPERAT	5'23
CUTTING	0	CUTTING	0
RATE	0%	RATE	0%
M01 STOP 13:17:33			
[LIST] [COUNT] [TIME] [PC DRV] [PC SET] [OPRRT]			

10.4 INCH SCREEN

(1) POWER ON TIME

The machine power on time is displayed.

(2) OPERATION TIME

Operation time is displayed.

(Machine operation time of from a cycle start until cycle end)

(3) CUTTING TIME

The time cut by G01, G02, and G03 is displayed.

(4) OPERATION RATE

The operation rate is displayed.

2. OPERATION SOFTKEYS

(1) TIME SOFTKEY

10 + 2 SOFTKEY

<<											ALLCLR	
----	--	--	--	--	--	--	--	--	--	--	--------	--

5 + 2 SOFTKEY

<					ALLCLR	
---	--	--	--	--	--------	--

[ALLCLR] Time is cleared.

IMPORTANT

MEM mode cannot reset a time.
When the stopwatch is operated, it cannot the time too.

6-5 MACHINE RUN [PROGRAM COUNTER] SCREEN

1. DISPLAY EXPLANATION

500/1000 2008/12/08 1:31:40 OPRT 7'12

MACHINE RUN [PROGRAM COUNTER] T03 W03
MACHINE TT-2000
2008/12/08 P-CN 1:31'40 OPRT 7'12

NO	PARTS NAME	COUNT	OPRT TM	CYCLE	AVG
01	ONG-1	0	0	0	0
02	ONG-2	0	0	0	0
03	ONG-3	0	0	0	0
04	ONG-4	0	0	0	0
05					
06					
07					
08					

EDIT **** * 18:00:43 M/C

PC DAY PC SET

8.4 INCH SCREEN

MACHINE RUN [PROGRAM COUNTER SETTINGS] 09008 N00000
PARTS 10/100 ---

12.27 18:58
1:04

PROGRAM COUNTER

NO	PARTS NAME	COUNT	OPRT TM	CYCLE	AVG
01	HSD	0	0	0	0
02	TXC	0	0	0	0
03	EXP	0	0	0	0
04	PBT	0	0	0	0
05					
06					
07					
08					

PBT STOP 13:17:39

LIST COUNT TIME PC DAY PC SET

10.4 INCH SCREEN

(1) MACHINE NO.

The number of machine is set. (10.4 INCH SCREEN)

(2) PARTS NAME

The part name is displayed.

When the part name is not registered, the program number is displayed.

(3) COUNT

The count executed as the main program is displayed.

(4) OPERATION TIME

The total of the operation time is displayed.

(5) CYCLE TIME AVERAGE

The average of the cycle time is displayed.

6-6 MACHINE RUN [PROGRAM REGISTRATION] SCREEN

1. DISPLAY EXPLANATION

500/1000 15:40 05000 N00000

MACHINE RUN [PROG REGISTRATION] 103 W03

MACHINE 11-2000

No.	ONO.	DATE	NAME	No.	ONO.	PARTS NAME
01	1000	ONG-1		09		
02	2000	ONG-2		10		
03	1500	ONG-3		11		
04	2500	ONG-4		12		
05				13		
06				14		
07				15		
08				16		

EDIT*** ** * 15:01:07 M/C

PC DAY PC SET OPRD

8.4 INCH SCREEN

MACHINE RUN [PROGRAM REGISTRATION] 09008 N00000

PARTS 10/100

PROGRAM COUNTER

No.	ONO.	DATE	NAME	No.	ONO.	PARTS NAME
01	1000	ONG-1		09		
02	2000	ONG-2		10		
03	1500	ONG-3		11		
04	2500	ONG-4		12		
05				13		
06				14		
07				15		
08				16		

EDIT*** ** * 15:01:07 M/C

PC DAY PC SET OPRD

10.4 INCH SCREEN

(1) MACHINE NO.

The number of machine is set. (8.4 INCH SCREEN)

(2) ONO.

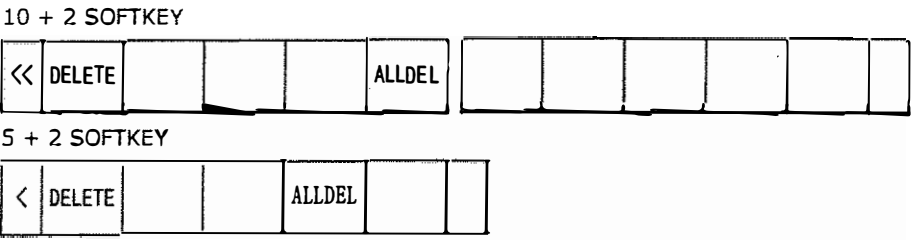
The program number is registered.

(3) PARTS NAME

The part name is set.

2. OPERATION SOFTKEYS

(1) PROGRAM COUNTER SOFTKEY

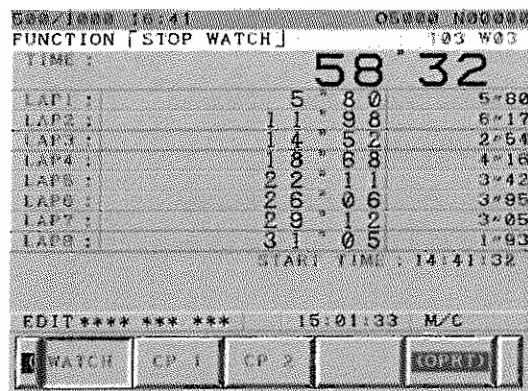


- [DELETE] The registration of program is deleted.
- [ALLDEL] All registration is deleted.

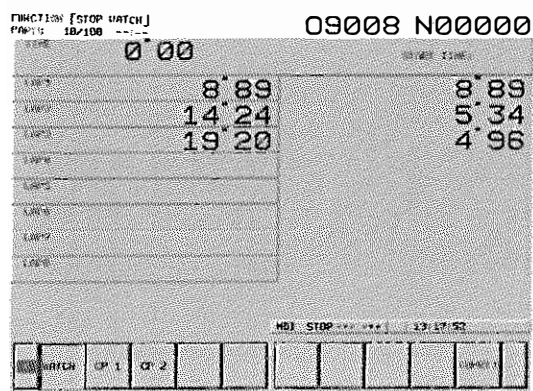
7 OTHER FUNCTIONS MENU

7-1 STOPWATCH SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) TIME

The stopwatch timer is displayed.

(2) LAP1 ~ LAP8

Lap time is displayed. Maximum 8 laps are displayed.

After 9th lap, the lap time is overwritten.

The difference between current lap time and previous lap time is displayed on the right side.

2. OPERATION SOFTKEYS

(1) STOPWATCH SOFTKEY

10 + 2 SOFTKEY

<<						START	LAP	STOP	LAPCLR	RESET	
----	--	--	--	--	--	-------	-----	------	--------	-------	--

5 + 2 SOFTKEY

<	START	LAP	STOP	LAPCLR	RESET	
---	-------	-----	------	--------	-------	--

[START]	Starts the timer.
[LAP]	Laps the then timer value.
[STOP]	Stops the timer.
[LAPCLR]	Clears LAP1 ~ LAP8 display.
[RESET]	Resets the timer value to zero (0).

7-2 CP CALC. & DATA SCREEN

1. DISPLAY EXPLANATION

000/1000 16:41 05000 N00000
 FUNCTION [CP SETTING & CALC.] 103 W03
 PART: 10/1000 16:41 05000 N00000
 MEASITEM NONE START No
 DIMENSION END No
 UP LIMIT PREC DAY ---/---/---
 LW LIMIT MEAS DAY ---/---/---
 MEASTOOL NONE
 CALCULATION RESULT DAY ---/---/---
 STANDARD ITEM NUM
 AVERAGE DEVIATION
 CP CM
 CPM CMK
 EDIT **** *** *** 15:01:51 M/C
 [WATCH] [CP 1] [CP 2] [OPRT]

8.4 INCH SCREEN

000/1000 16:41 05000 N00000
 FUNCTION [CP MEASUREMENT DATA] 103 W03
 No. 1 PART: MEAS: NONE 2/3

01:	11:	21:
02:	12:	22:
03:	13:	23:
04:	14:	24:
05:	15:	25:
06:	16:	26:
07:	17:	27:
08:	18:	28:
09:	19:	29:
10:	20:	30:

 EDIT **** *** *** 15:02:09 M/C
 [WATCH] [CP 1] [CP 2] [OPRT]

8.4 INCH SCREEN

FUNCTION [CP SETTING & CALC.] 09008 N00000
 PART: 10/1000 16:41 05000 N00000
 MEASITEM NONE START No
 DIMENSION END No
 UP LIMIT PREC DAY ---/---/---
 LW LIMIT MEAS DAY ---/---/---
 MEASTOOL NONE
 CALCULATION RESULT DAY ---/---/---
 STANDARD ITEM NUM
 AVERAGE DEVIATION
 CP CM
 CPM CMK
 EDIT **** *** *** 15:02:09 M/C
 [WATCH] [CP 1] [CP 2] [OPRT]

10.4 INCH SCREEN

CP SETTING

(1) PARTS NO.

Alphanumeric characters can be optionally set to ten characters.

(2) MEASITEM (MEASUREMENT ITEM)

Measurement items (outer dia., inner dia., etc.) are set.

(3) DIMENSIN (DIMENSION STANDARD)

The objective finish dimension (tolerance center) of machining work piece is set.

(4) UP LIMIT, LW LIMIT (UPPER LIMIT AND LOWER LIMIT OF TOLERANCE)

Upper and lower limit values of tolerance are set.

(5) STRAT NO. AND END NO.

Calculating range is specified.

(6) PRCS DAY, MEAS DAY (PROCESSING DAY AND MEASUREMENT DAY)

Processing date and measurement date are set.

(7) MEASTOOL (MEASUREMENT TOOL)

Size-measured tool is set.

CALCULATION RESULT ITEM

(8) CALC. DAY (CALCULATION DAY)

Calculated date is displayed.

(9) STANDARD

Calculating method is displayed (Both end standard, upper limit standard, lower limit standard)

(10) ITEM NUM (ITEM NUMBER)

Total number of calculated data is displayed.

(11) AVERAGE

The average value of calculating results is displayed.

(12) DEVIATIN (STANDARD DEVIATION)

The standard deviation of calculation results is displayed.

(13) CP AND CM

CP : Process capacity index

CM : Machine capacity index

CP & CM values of calculation results are displayed.

(14) CPK AND CMK

CPK: Process capacity index (K: Bias data)

CMK: Machine capacity index (K: Bias data)

The CPK & CMK values of calculated results are displayed.

2. OPERATION SOFTKEYS

(1) PARTS NO SOFTKEY

5 + 2 SOFT KEY

<	CLEAR				CALC	
---	-------	--	--	--	------	--

[CLEAR] The part number is deleted.

[CALC] Process capacity is calculated.

(2) MEASUREMENT ITEM SOFTKEY

10 + 2 SOFT KEY

<<	NONE	OPSIDE	INSIDE	LENGTH	HEIGHT	DEPTH	SWING	DITCH	WIDTH	DIFFER	+
----	------	--------	--------	--------	--------	-------	-------	-------	-------	--------	---

<<	TAPER	CIRCLE	CYLIND							OTHERS	+
----	-------	--------	--------	--	--	--	--	--	--	--------	---

5 + 2 SOFT KEY

<	NONE	OPSIDE	INSIDE	LENGTH	HEIGHT	
---	------	--------	--------	--------	--------	--

<	DEPTH	SWING	DITCH	WIDTH	DIFFER	
---	-------	-------	-------	-------	--------	--

<	TAPER	CIRCLE	CYLIND		OTHERS	
---	-------	--------	--------	--	--------	--

The item corresponding to a soft key is set up.

(3) DIMENSION STANDARD, UPPER LIMIT AND LOWER LIMIT SOFTKEY

10 + 2 SOFTKEY

<<											CLEAR	
----	--	--	--	--	--	--	--	--	--	--	-------	--

5 + 2 SOFTKEY

<					CLEAR	
---	--	--	--	--	-------	--

[CLEAR] It clears.

(4) PROCESSING DAY, MEASUREMENT DAY SOFTKEY

10 + 2 SOFTKEY

<<						TODAY					CLEAR	
----	--	--	--	--	--	-------	--	--	--	--	-------	--

5 + 2 SOFTKEY

<	CLEAR					TODAY	
---	-------	--	--	--	--	-------	--

[TODAY] Today's date is set up.

When setting an optional date, input year (4 digits),
month (2 digits) and day (2 digits).

[CLEAR] It clears.

(5) MEASUREMENT TOOL SOFTKEY

10 + 2 SOFTKEY

<<	NONE	DIGITL	MICRO	BLADE	DEPTH	HEIGHT	CYLIND	DIAL G	PICK G	CALPER	+
----	------	--------	-------	-------	-------	--------	--------	--------	--------	--------	---

<<	3-D	3MICRO								MEASUR	OTHERS	+
----	-----	--------	--	--	--	--	--	--	--	--------	--------	---

5 + 2 SOFTKEY

<	NONE	DIGITL	MICRO	BLADE	DEPTH	+
---	------	--------	-------	-------	-------	---

<	HEIGHT	CYLIND	DIAL G	PICK G	CALPER	+
---	--------	--------	--------	--------	--------	---

<	3-D	3MICRO		MEASUR	OTHERS	+
---	-----	--------	--	--------	--------	---

The item corresponding to a soft key is set up.

7-3 OFFSET MEMORY COPY SCREEN (10.4 INCH)

The offset memory of the program coordinate system -1 and the program coordinate system -2 is displayed.

Edit and copy operation can be performed.

1. DISPLAY EXPLANATION

TOOL OFFSET / GEOM

FUNCTION [OFFSET MEMORY COPY] 09500 N00000
PRG# 0/0

NO.	X	Y	Z	W	X	Y	Z	W
001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
002	0.002	0.102	0.202	0.302	1.002	1.102	1.202	1.302
003	0.003	0.103	0.203	0.303	1.003	1.103	1.203	1.303
004	0.004	0.104	0.204	0.304	1.004	1.104	1.204	1.304
005	0.005	0.105	0.205	0.305	1.005	1.105	1.205	1.305
006	0.006	0.106	0.206	0.306	1.006	1.106	1.206	1.306
007	0.007	0.107	0.207	0.307	1.007	1.107	1.207	1.307
008	0.008	0.108	0.208	0.308	1.008	1.108	1.208	1.308
009	0.009	0.109	0.209	0.309	1.009	1.109	1.209	1.309
010	0.010	0.110	0.210	0.310	1.010	1.110	1.210	1.310
011	0.011	0.111	0.211	0.311	1.011	1.111	1.211	1.311
012	0.012	0.112	0.212	0.312	1.012	1.112	1.212	1.312
013	0.013	0.113	0.213	0.313	1.013	1.113	1.213	1.313
014	0.014	0.114	0.214	0.314	1.014	1.114	1.214	1.314
015	0.015	0.115	0.215	0.315	1.015	1.115	1.215	1.315
016	0.016	0.116	0.216	0.316	1.016	1.116	1.216	1.316

EDIT MODE *** 11/25/14 PRINT

WATCH OP 1 OP 2 OFFSET DEL COPY

TOOL OFFSET / WEAR

FUNCTION [OFFSET MEMORY COPY] 09500 N00000
PRG# 0/0

NO.	X	Y	Z	W	X	Y	Z	W
001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
002	0.002	0.102	0.202	0.302	1.002	1.102	1.202	1.302
003	0.003	0.103	0.203	0.303	1.003	1.103	1.203	1.303
004	0.004	0.104	0.204	0.304	1.004	1.104	1.204	1.304
005	0.005	0.105	0.205	0.305	1.005	1.105	1.205	1.305
006	0.006	0.106	0.206	0.306	1.006	1.106	1.206	1.306
007	0.007	0.107	0.207	0.307	1.007	1.107	1.207	1.307
008	0.008	0.108	0.208	0.308	1.008	1.108	1.208	1.308
009	0.009	0.109	0.209	0.309	1.009	1.109	1.209	1.309
010	0.010	0.110	0.210	0.310	1.010	1.110	1.210	1.310
011	0.011	0.111	0.211	0.311	1.011	1.111	1.211	1.311
012	0.012	0.112	0.212	0.312	1.012	1.112	1.212	1.312
013	0.013	0.113	0.213	0.313	1.013	1.113	1.213	1.313
014	0.014	0.114	0.214	0.314	1.014	1.114	1.214	1.314
015	0.015	0.115	0.215	0.315	1.015	1.115	1.215	1.315
016	0.016	0.116	0.216	0.316	1.016	1.116	1.216	1.316

EDIT MODE *** 11/25/14 PRINT

WATCH OP 1 OP 2 OFFSET DEL COPY

(1) PROGRAM COORDINATE SYSTEM-1 OFFSET MEMORY

The offset memory of the program coordinate system -1 is displayed.

(2) PROGRAM COORDINATE SYSTEM-2 OFFSET MEMORY

The offset memory of the program coordinate system -1 is displayed.

(3) OFFSET MEMORY NUMBER

An offset memory number is displayed.

(4) THE LAST VALUE

The last value is displayed when edit and copy operation are performed.
When X:0.000 is changed into X:0.001, it is displayed as follows.

BEFORE : POS-1 GNo.01 X : 0.000

(5) COPY BUFFER VALUE

The copied value is displayed when a soft key [copy].

When 0.001 is copied, it is displayed as follows.

COPY BUF : X[0.001] Z[0.002] Y[0.003] R[0.004] T[0]

2. OPERATION SOFTKEYS

(1) OFFSET MEMORY CHANGE SOFTKEY

<	WATCH	CP 1	CP 2	OFFSET				GEOM	WEAR	(OPRT)	
---	-------	------	------	--------	--	--	--	------	------	--------	--

[GEON] A tool offset geometry value is displayed.

[WEAR] A wear offset value is displayed.

(2) EDIT SOFTKEY

<<	1X→2X	1X→2Z			1LN→2					No. SRH	+
----	-------	-------	--	--	-------	--	--	--	--	---------	---

[1X->2X] X offset value of the program coordinate system -1 is copied to X offset value of the program coordinate system -2.

[1X->2Z] X offset value of the program coordinate system -1 is copied to Z offset value of the program coordinate system -2.
One half of X offset values is set up.

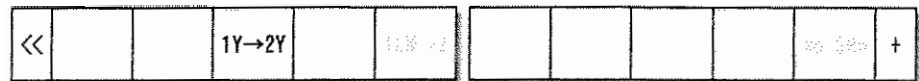
[1LN->2] One line of the program coordinate system -1 (X,Z,Y,R,T) of the cursor line is copied onto the offset memory of program coordinate system -2.

[No.SRH] It searches for the number in which the key is input.

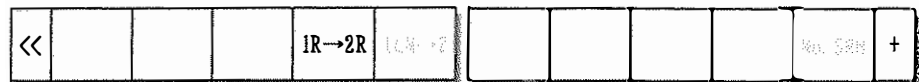
<<	1Z→2X	1Z→2Z			1LN→2					No. SRH	+
----	-------	-------	--	--	-------	--	--	--	--	---------	---

[1Z->2X] Z offset value of the program coordinate system -1 is copied to X offset value of the program coordinate system -2.
The twice of Z offset value are set up.

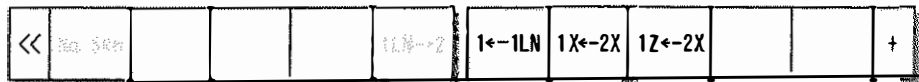
[1Z->2Z] Z offset value of the program coordinate system -1 is copied to Z offset value of the program coordinate system -2.



[1Y->2Y] Y offset value of the program coordinate system -1 is copied to Y offset value of the program coordinate system -2.



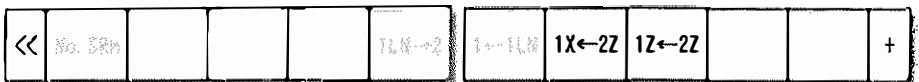
[1R->2R] R offset value of the program coordinate system -1 is copied to R offset value of the program coordinate system -2.



[2<-1LN] One line of the program coordinate system -2 (X,Z,Y,R,T) of the cursor line is copied onto the offset memory of program coordinate system -1.

[1X<-2X] X offset value of the program coordinate system -2 is copied to X offset value of the program coordinate system -1.

[1Z<-2X] X offset value of the program coordinate system -2 is copied to Z offset value of the program coordinate system -1.
One half of X offset values is set up.

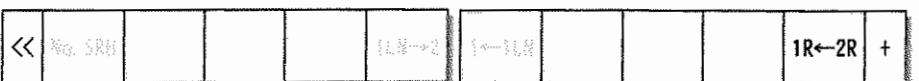


[1X<-2Z] Z offset value of the program coordinate system -2 is copied to X offset value of the program coordinate system -1.
The twice of Z offset value are set up.

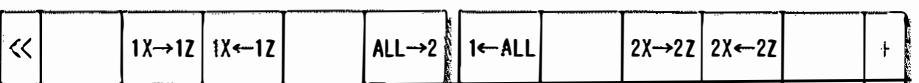
[1Z<-2Z] Z offset value of the program coordinate system -2 is copied to Z offset value of the program coordinate system -1.



[1Y<-2Y] Y offset value of the program coordinate system -2 is copied to Y offset value of the program coordinate system -1.



[1R<-2R] R offset value of the program coordinate system -2 is copied to R offset value of the program coordinate system -1.



[1X->1Z] X offset value of the program coordinate system -1 is copied to Z offset value of the program coordinate system -1.
One half of X offset values is set up.

[1X<-1Z] Z offset value of the program coordinate system -1 is copied

to X offset value of the program coordinate system -1.

The twice of Z offset value are set up.

[ALL->2] All the offset memories of program coordinate system -1 are copied onto program coordinate system -2.

[1<-ALL] All the offset memories of program coordinate system -2 are copied onto program coordinate system -1.

[2X->2Z] X offset value of the program coordinate system -2 is copied to Z offset value of the program coordinate system -2.
One half of X offset values is set up.

[2X<-2Z] Z offset value of the program coordinate system -2 is copied to X offset value of the program coordinate system -2.
The twice of Z offset value are set up.



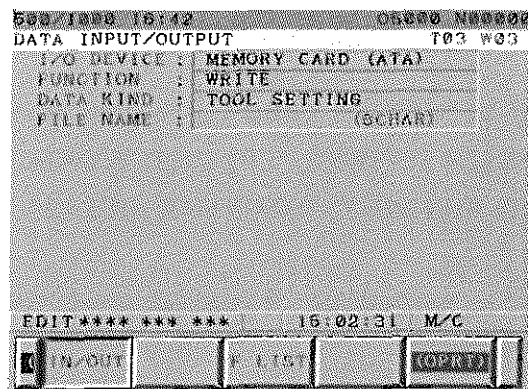
[1L-CPY] Offset memory (X,Z,Y,R,T) of the cursor line is copied onto the copy buffer.

[1L-PST] Offset memory (X,Z,Y,R,T) of the copy buffer is put on the cursor line.

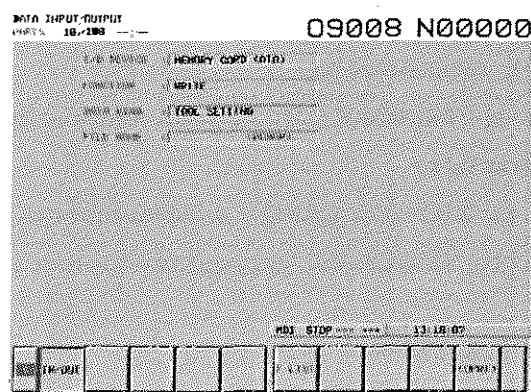
8 IN/OUT MENU

8-1 DATA INPUT/OUTPUT SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN



IMPORTANT

It can be operated when NC is EDIT mode.
Moreover, please set an I/O channel as No. 4.

(1) INPUT/OUTPUT SETTING ITEMS

I/O DEVICE

"MEMORY CARD" (ATA Slot) or "PROGRAM" (Tape memory) is chosen.

FUNCTION

"WRITE" or "READ" is chosen.

"READ" cannot be chosen when the "I/O DEVICE" is "PROGRAM".

DATA KIND

In the "WRITE" to "MEMORY CARD", it chooses from "TOOL SETTING", "SYSTEM SETTING", "CP1 CALC. & DATA", "CP2 CALC. & DATA", "MACHINE RUN INFO", "LOAD MAX HIS1~2", "TOOL CSV DATA".

In the "WRITE" to "PROGRAM", it chooses from "TOOL SETTING", "SYSTEM SETTING".

In the "READ" to "MEMORY CARD", it chooses from "TOOL SETTING", "SYSTEM SETTING".

FILE NAME, FILE NO., PROGRAM NO.

In the "WRITE" to "MEMORY CARD", a file name is specified. (Less than eight characters)

In the "READ" to "MEMORY CARD", a file number is specified.

In the "WRITE" to "PROGRAM", a program number is specified.

(2) MEMORY CARD FILE LIST

The file list in memory card (file number, file name, size) is displayed. When the mode of NC is EDIT mode, it is displayed that [F LIST] of softkey is pushed.

2. OPERATION SOFTKEYS

(1) IN/OUT SOFTKEY

10 + 2 SOFTKEY

<<						F LIST					
----	--	--	--	--	--	--------	--	--	--	--	--

5 + 2 SOFTKEY

<			F LIST			
---	--	--	--------	--	--	--

[F LIST]

The file list in memory card (file number, file name, size) is displayed.

It cannot be displayed that the mode of NC is not EDIT mode.

(2) I/O DEVICE SOFTKEY

10 + 2 SOFTKEY

<<	M CARD	PROG									
----	--------	------	--	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	M CARD	PROG				
---	--------	------	--	--	--	--

[M CARD]

Memory card is set as the object of input and output.

[PROG]

Program is set as the object of input and output.

(3) FUNCTION SOFTKEY

10 + 2 SOFTKEY

<<	WRITE	READ									
----	-------	------	--	--	--	--	--	--	--	--	--

5 + 2 SOFTKEY

<	WRITE	READ				
---	-------	------	--	--	--	--

[WRITE]

Data is written in an I/O device.

[READ]

Data is read from an I/O device.

(4) DATA KIND SOFTKEY

10 + 2 SOFTKEY

<<	TOOL	SYSTEM	CP 1	CP 2	MC RUN	REPO. 1	REPO. 2	LDHIS1	LDHIS2	LDHIS3	
----	------	--------	------	------	--------	---------	---------	--------	--------	--------	--

5 + 2 SOFTKEY

<	TOOL	SYSTEM	CP 1	CP 2	MC RUN	+
---	------	--------	------	------	--------	---

<	REPO. 1	REPO. 2	LDHIS1	LDHIS2	LDHIS3	+
---	---------	---------	--------	--------	--------	---

[TOOL]	TOOL SETTING DATA (*.RMD)
[SYSTEM]	SYSTEM SETTING DATA. (*.RMS)
[CP *]	CP* CALC. & DATA (*.CSV) (Only output)
[MC RUN]	MACHINE RUN INFO DATA (*.CSV) (Only output)
[REPO.1]	PROGRAM COUNTER DATA OF THIS MONTH (*.CSV) (Only output)
[REPO.2]	LAST MONTH's PROGRAM COUNTER DATA (*.CSV) (Only output)
[LDHIS*]	LOAD MAX VALUE HISTORY (*.CSV) (Only output)
[T DATA]	TOOL SETTING DATA (*.CSV) (Only output)

(5) FILE NAME SOFTKEY

10 + 2 SOFTKEY

<<					CLEAR						EXEC	
----	--	--	--	--	-------	--	--	--	--	--	------	--

5 + 2 SOFTKEY

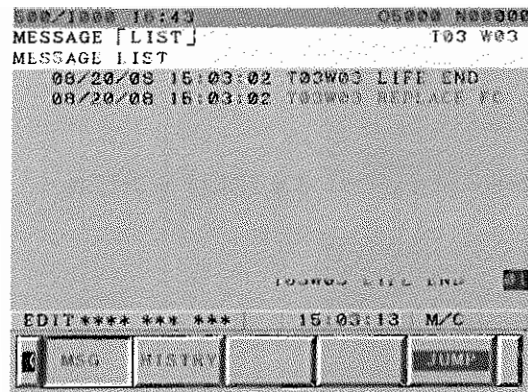
<	CLEAR				EXEC	
---	-------	--	--	--	------	--

[CLEAR]	It clears.
[EXEC]	I/O operation is executed.

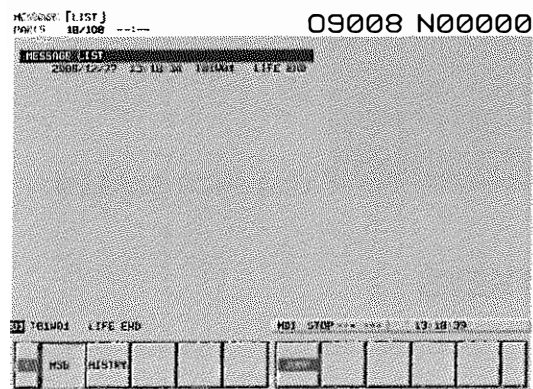
9 MESSAGE MENU

9-1 MESSAGE [LIST] SCREEN

1. DISPLAY EXPLANATION



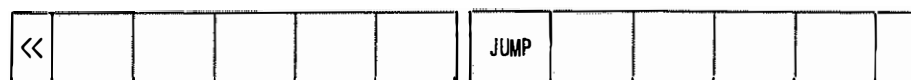
8.4 INCH SCREEN



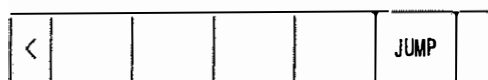
10.4 INCH SCREEN

2. OPERATION SOFTKEYS

10 + 2 SOFTKEY



5 + 2 SOFTKEY



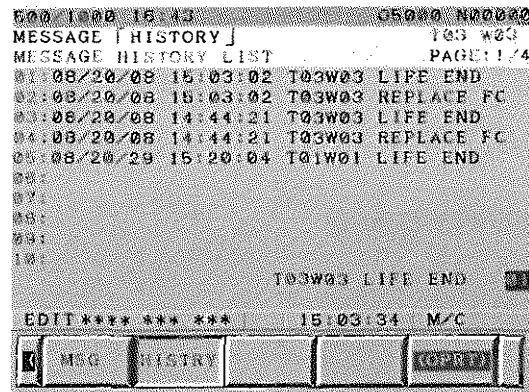
[JUMP]

When the message has occurred, the [JUMP] key is displayed on an item softkey.

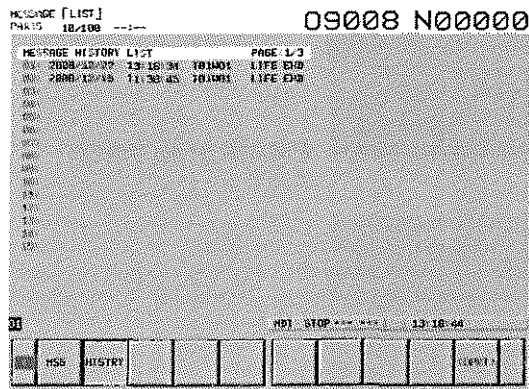
When [JUMP] key is pushed, it will switch to the screen corresponding to a message.

9-2 MESSAGE [HISTORY] SCREEN

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



10.4 INCH SCREEN

2. OPERATION SOFTKEYS

10 + 2 SOFTKEY



5 + 2 SOFTKEY



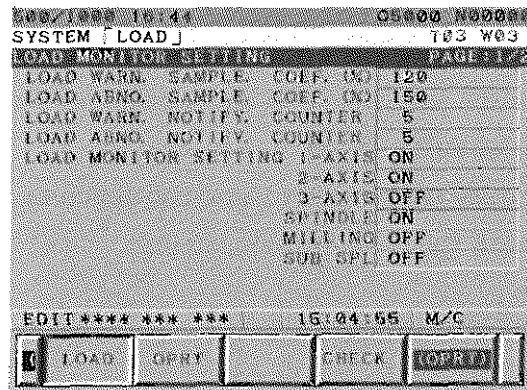
[CLEAR]

Message history is cleared.

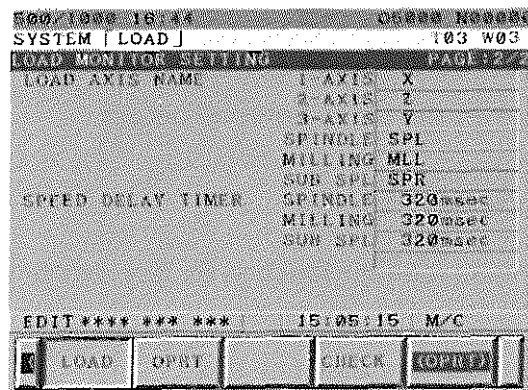
10 SYSTEM MENU

10-1 SYSTEM [LOAD] SCREEN

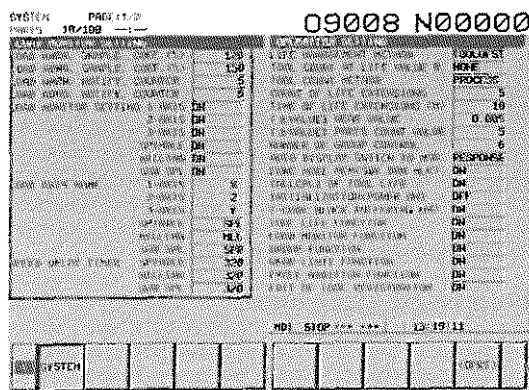
1. DISPLAY EXPLANATION



8.4 INCH SCREEN



8.4 INCH SCREEN



10.4 INCH SCREEN

(1) LOAD WARN. SAMPLE. COEF. (%)

After measuring the sample, this value is multiplied to load maximum value to set the load warning value.

(2) LOAD ABNO. SAMPLE. COEF. (%)

After measuring the sample, this value is multiplied to load maximum value to set the load abnormal value.

(3) LOAD WARN. NOTIFY. COUNTER

The notification counter, until the load value becomes warning value exceeding the warning value, is set.

When the value exceeds the warning value continuously by the load warning notify counter, the load warning occurs.

(4) LOAD ABNO. NOTIFY. COUNTER

The notification counter, until the load value becomes abnormal value exceeding the warning value, is set.

When the value exceeds the abnormal value continuously by the load abnormal notify counter, the load abnormal occurs.

(5) LOAD MONITOR SETTING

It is set to make the load monitor function for any axis to VALID (ON) or INVALID (OFF).

The setting value varies every machine type.

(6) LOAD AXIS NAME

Axis name is setup. (3 characters)

(7) SPEED DELAY TIMER

Time is set up from a speed attainment signal.

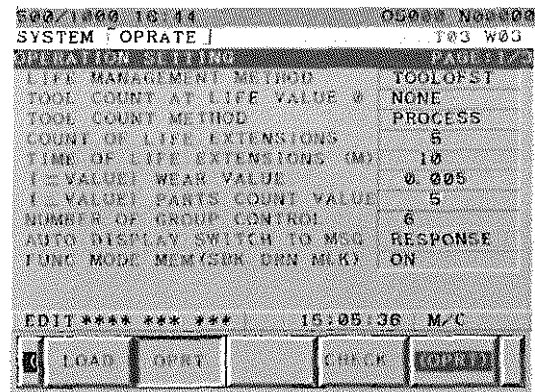
Load processing is performed after time.

Default: 320msec

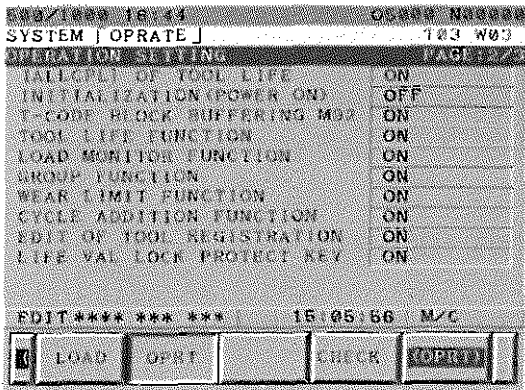
Since the load value at the time of acceleration is disregarded, it sets up.

10-2 SYSTEM [OPERATE] SCREEN

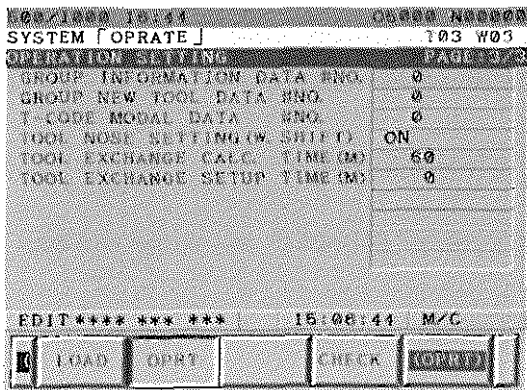
1. DISPLAY EXPLANATION



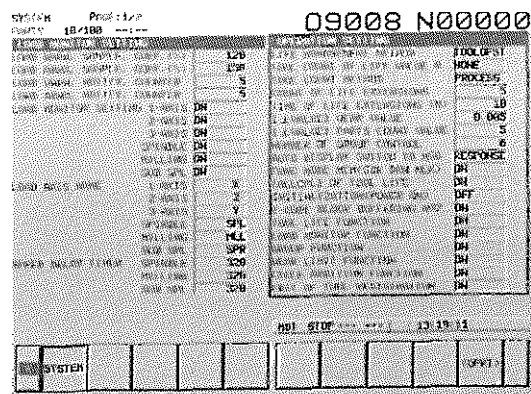
8.4 INCH SCREEN



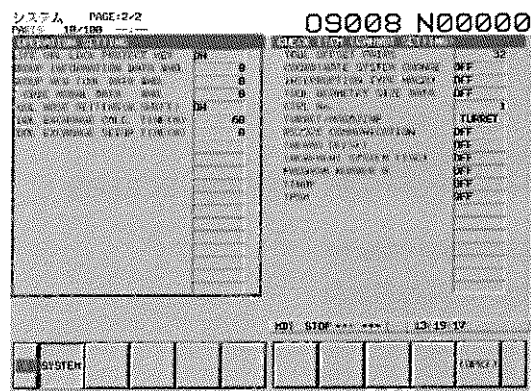
8.4 INCH SCREEN



8.4 INCH SCREEN



10.4 INCH SCREEN



10.4 INCH SCREEN

(1) LIFE MANAGEMENT METHOD

[TOOL+OFST]: It manages by combining the tool number and the offset number.

[TOOL]: It manages by the tool number.

[OFST]: It manages by the offset number.

The tool cannot register when managing by the [TOOL] (tool number).

(2) TOOL COUNT AT LIFE VALUE 0

It is set that the tool counter counts or not when the tool life value is 0.

(3) TOOL COUNT METHOD

It is set that the tool counter counts every process or command.

(4) COUNT OF LIFE EXTENSIONS

When pressing [LIFEXT] key, the value added to the life value is set.

(5) TIME OF LIFE EXTENSIONS (M)

When pressing [LIFEXT] key, the value added to the cutting time life

value is set.

(6) [+/-VALUE] WEAR VALUE

When pressing [+VALUE], [-VALUE] keys, values added and reduced (plus • minus) are set here.

(7) [+/-VALUE] PARTS COUNT VALUE

When pressing [+VALUE], [-VALUE] keys, values added and reduced (plus • minus) are set here.

(8) NUMBER OF GROUP CONTROL

The number of groups which performs group management is setup.
(MAX 12 Groups)

(9) AUTO DISPLAY SWITCH TO MSG

When any message relative to the RAKURAKU MONITOR 3 occurs, it is set that the screen is forcibly changed or not.

(10) FUNC MODE MEM (SBK DRN MLK)

When the counter is set to VALID (ON), the tool counter counts under the following conditions.

It counts at NON-SINGLE BLOCK, NON-DRY RUN, and NON-MACHINE LOCK.

When the counter is set to INVALID (OFF), the counter counts regardless of NC mode or machine setting.

(11) [ALLCPL] OF TOOL LIFE

ON / OFF of the [ALLCPL] soft key button of the life management displayed on a "GENERAL SCREEN" are set up.

(12) INITIALIZATION (POWER ON)

It sets up whether all data is initialized at the time of a power supply injection.

(13) T-CODE BLOCK BUFFERING M92

It is set up whether M92 which invalidates a buffering is directed.

(14) TOOL LIFE FUNCTION

ON / OFF of tool life management function is set up.

(15) LOAD MONITOR FUNCTION

ON / OFF of load monitor function is set up.

(16) GROUP FUNCTION

ON / OFF of group management function is set up.

(17) WEAR LIMIT FUNCTION

ON / OFF of wear limit function is set up.

(18) CYCLE ADDITION FUNCTION

ON / OFF of cycle addition function is set up.

(19) EDIT OF TOOL REGISTRATION

On TOOL REGISTRATION SCREEN, ON / OFF of operation are set up.

(20) LIFE VAL LOCK PROTECT KEY

By a protection key, it is set up whether the input of a life value is locked.

(21) GROUP INFORMATION DATA #NO.

When a new tool is chosen into a group, a group number, a tool number, and a wear number are outputted to the set-up macro variable.

$\text{GROUP} \times 1000000 + \text{TOOL} \times 1000 + \text{OFFSET}$

(22) GROUP NEW TOOL DATA #NO.

When a new tool is chosen into a group, a tool number, and a wear number are outputted to the set-up macro variable.

$\text{TOOL} \times 1000 + \text{OFFSET}$

(23) TOOL NOSE SETTING (W.SHIFT)

EXEC / NONE of workpiece coordinate system shift is set up.

In NONE, a setup of a workpiece coordinate system shift, tool nose setting of a standard outer diameter tool, and tool nose setting of the diameter tool of the inside of a standard cannot be used.

(24) TOOL EXCHANGE CALC. TIME (M)

When becoming a tool life end within a time , it is displayed on a tool exchange screen.

(25) TOOL EXCHANGE SETUP TIME (M)

When calculating exchange time, this time is added and calculated at cycle time.

(26) VAL WITHOUT DECIMAL POINT

When the value without the decimal point is input, the integral value or the decimal value is set.

(27) MSG DISP WHEN OFFSET +INPUT

When the offset value in case of "NO MSG" is +input, the message is not displayed.

When P10330#0 of the NC parameter is 0 for "NC PARAM", the confirming message of the +input is displayed.

(28) EDIT MSG CHECK WHEN ALMRST

EXEC / NONE is set.

It is confirmed whether there is a message for which the edit is necessary when alarm reset is pushed. The message is not cleared when there is a message for which the edit is necessary.

(29) FUNC SKIP IN CUTTING BLOCK

EXEC / NONE is set.

When it instructs the same to cutting instruction (G1/G2/G3) block in the offset number, it doesn't process it.



IMPORTANT

When the NC is set to MEM mode, the system menu cannot be operated.

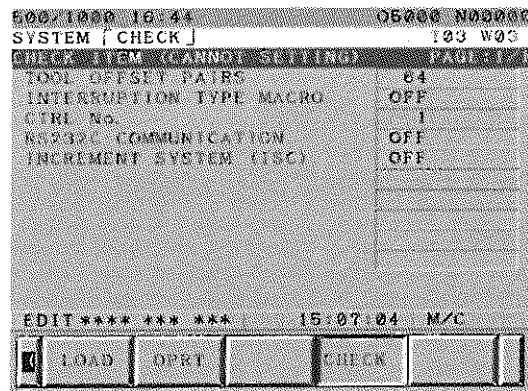
The protection key secures the operation of system menu.

When the system menu is operated, release the protection key.

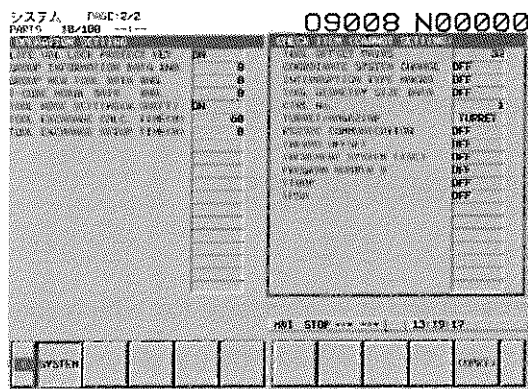
10-3 SYSTEM [CHECK] SCREEN

It is a screen which checks a setup. Setting change cannot be performed.

1. DISPLAY EXPLANATION



8.4 INCH SCREEN



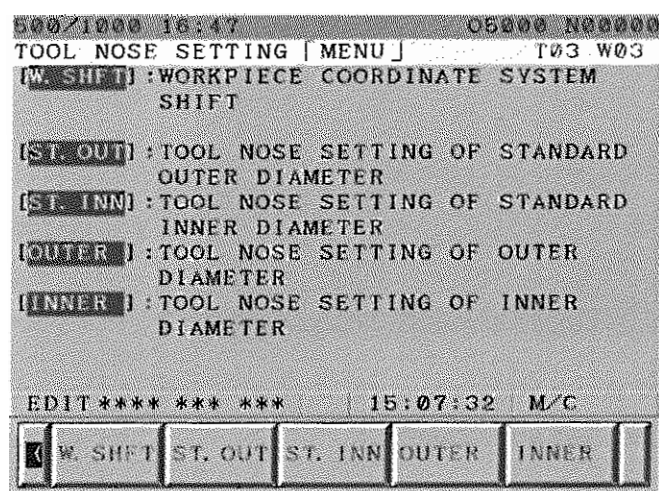
10.4 INCH SCREEN

11 TOOL NOSE SETTING MENU

Tool nose setting is performed according to guidance on a screen.

11-1 TOOL NOSE SETTING MENU SCREEN

1. DISPLAY



2. SOFTKEYS

10 + 2 SOFTKEY

<<						W. SHFT	ST. OUT	ST. INN	OUTER	INNER	
----	--	--	--	--	--	---------	---------	---------	-------	-------	--

5 + 2 SOFTKEY

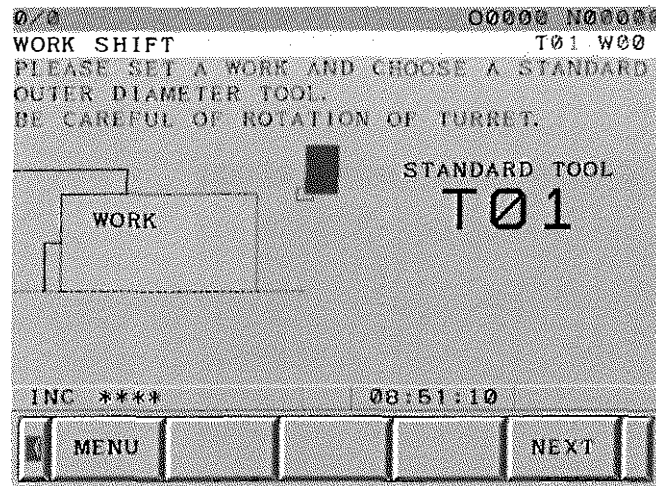
<	W. SHFT	ST. OUT	ST. INN	OUTER	INNER	
---	---------	---------	---------	-------	-------	--

- [W.SHFT] Workpiece coordinate system shift screen is displayed.
- [ST.OUT] Tool nose setting of standard outer diameter screen is displayed.
- [ST.INN] Tool nose setting of standard inner diameter screen is displayed.
- [OUTER] Tool nose setting of outer diameter screen is displayed.
- [INNER] Tool nose setting of inner diameter screen is displayed.

11-2 WORK SHIFT SCREEN

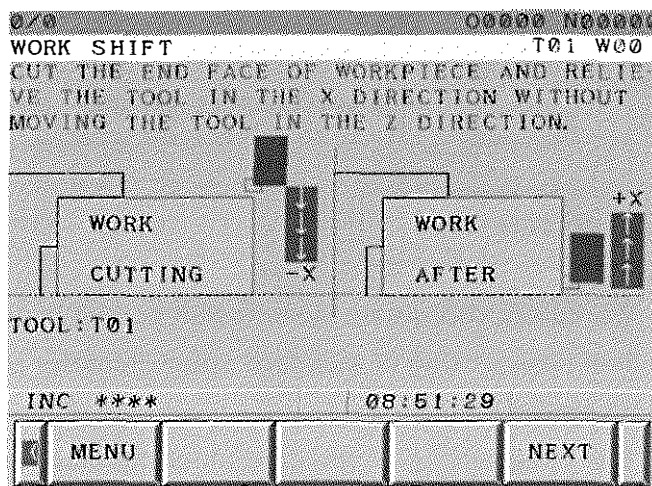
A work coordinate system shift is performed according to guidance on a screen.

1. STANDARD OUTER DIAMETER TOOL SELECTION



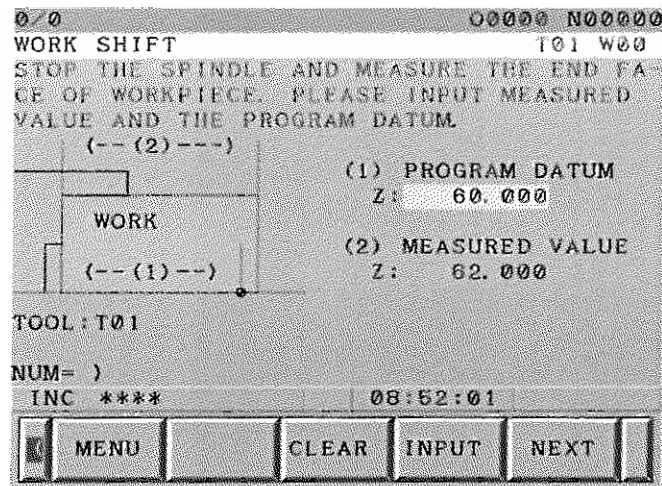
Turret is turned and a standard outer diameter tool is chosen.
The [NEXT] is pushed after selection.

2. END FACE CUTTING



End face of a work is cut.
The [NEXT] is pushed after cutting.

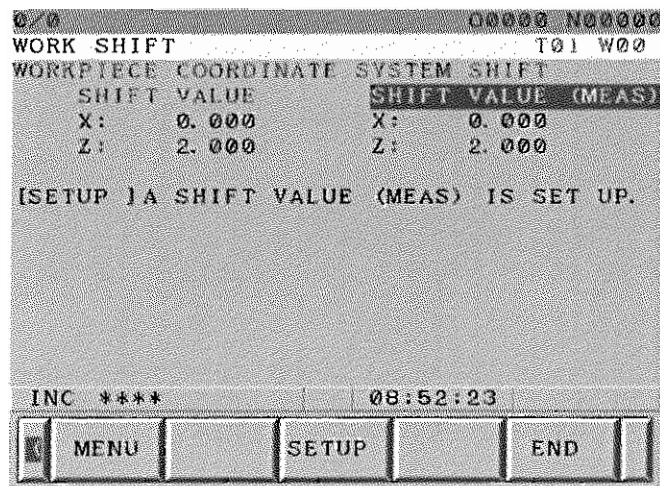
3. MEASUREMENT



The program datum and work measured value are inputted.

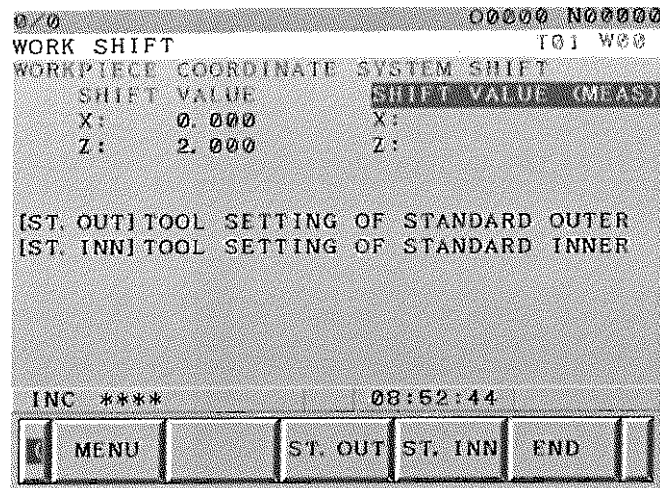
The [NEXT] is pushed after an input. A shift value is calculated at this time.

4. SETUP OF WORKPIECE COORDINATE SYSTEM SHIFT



A push on [SETUP] sets up a workpiece coordinate system shift.

5. END



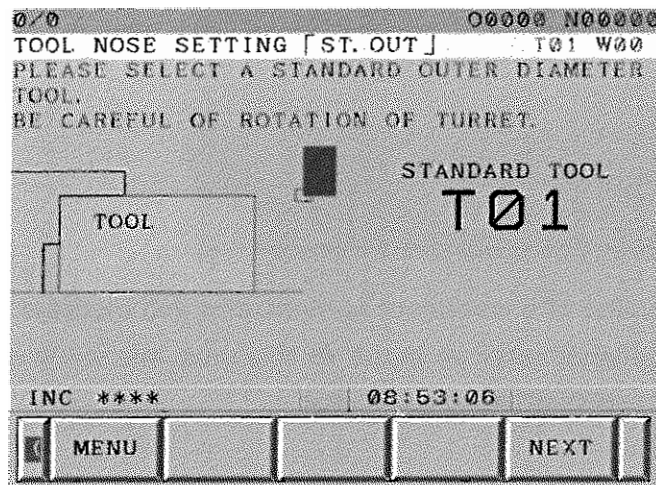
A push on [ST.OUT] displays the tool nose setting screen of standard outer diameter tool.

A push on [ST.INN] displays the tool nose setting screen of standard inner diameter tool.

It will end, if [END] is pushed.

11-3 TOOL NOSE SETTING OF STANDARD OUTER DIAMETER TOOL

1. STANDARD OUTER DIAMETER TOOL SELECTION

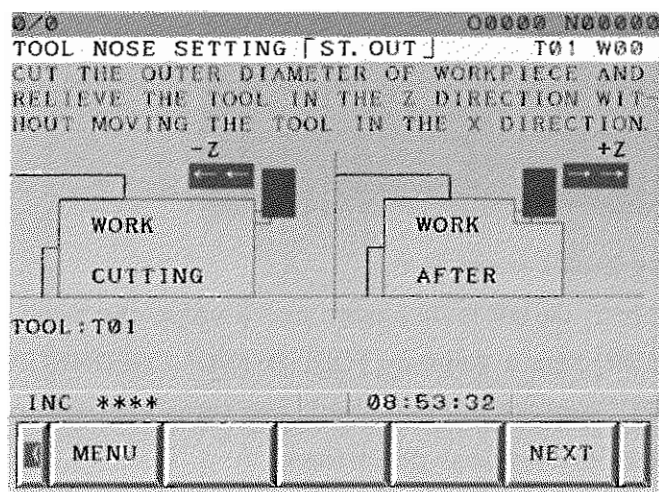


Turret is turned and a standard outer diameter tool is chosen.

A standard outer diameter tool should choose the tool used by workpiece coordinate system shift setup.

The [NEXT] is pushed after selection.

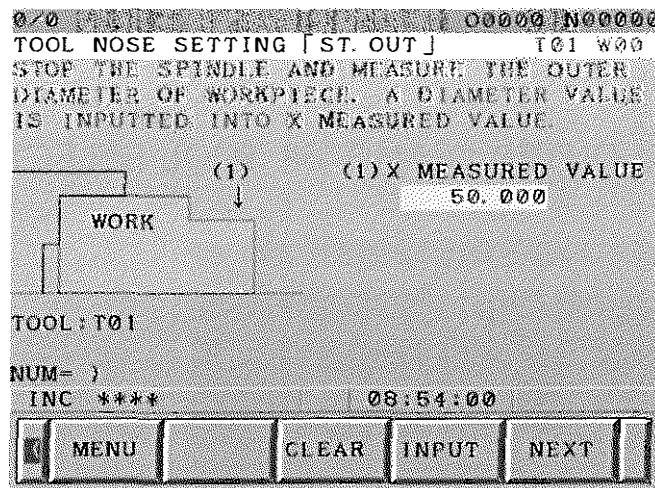
2. OUTER DIAMETER CUTTING



The outer diameter of a workpiece is cut.

The [NEXT] is pushed after cutting.

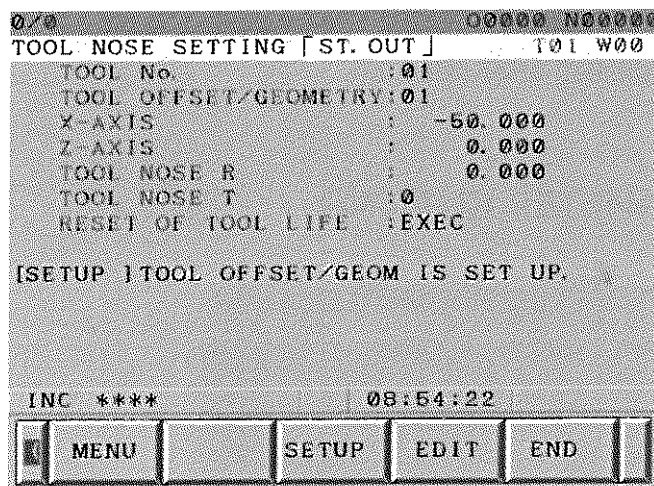
3. MEASUREMENT



The diameter value of a workpiece is measured and inputted.

The [NEXT] is pushed after an input. At this time, the value of the X-axis of TOOL OFFSET / GEOMETRY is calculated.

4. SETUP OF TOOL OFFSET / GEOMETRY



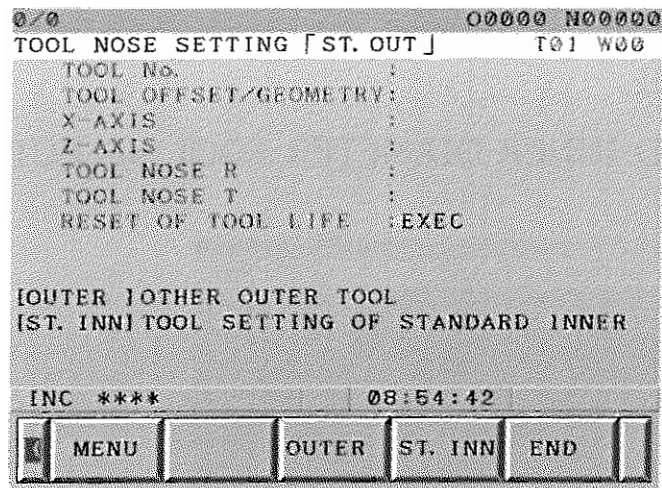
The value of the Z-axis is set to 0.

If [EDIT] is pushed, cursor is displayed and a value can be changed.

A push on [SETUP] sets a value as TOOL OFFSET / GEOMETRY.

In a setup "EXEC" tool life management, the same processing as the completion of tool exchange is performed.

5. END



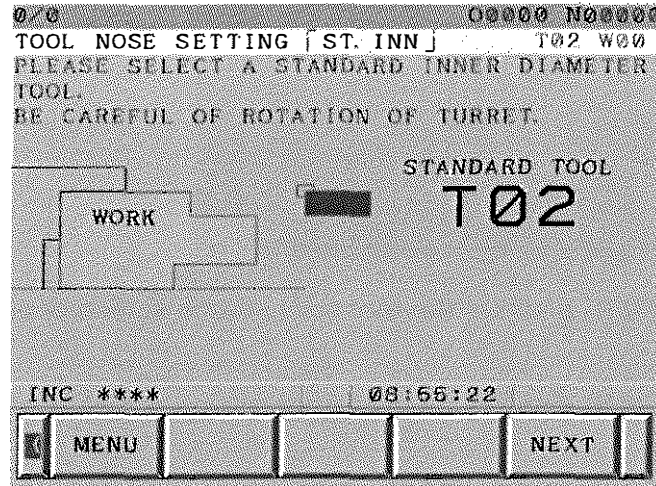
A push on [OUTER] displays the tool nose setting screen of outer diameter tool.

A push on [ST.INN] displays the tool nose setting screen of standard inner diameter tool.

It will end, if [END] is pushed.

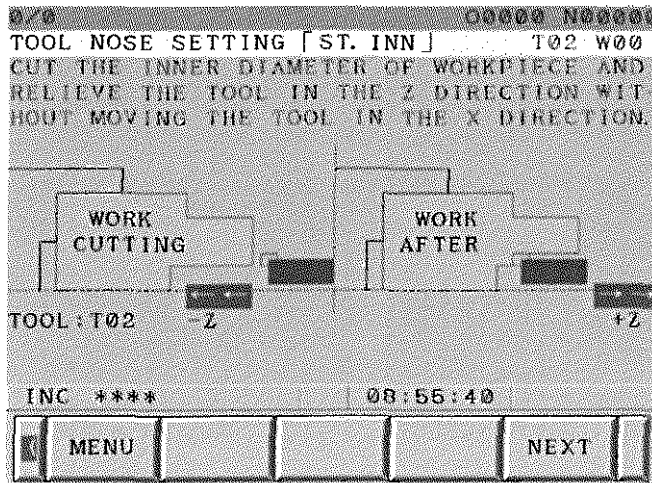
11-4 TOOL NOSE SETTING OF STANDARD INNER DIAMETER TOOL

1. STANDARD INNER DIAMETER TOOL SELECTION



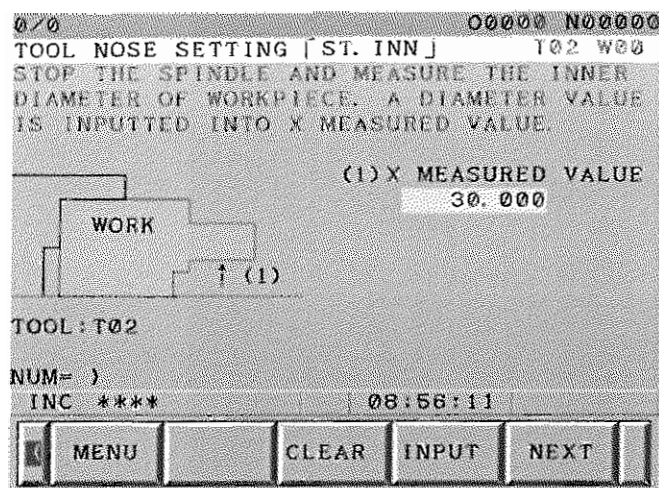
Turret is turned and a standard inner diameter tool is chosen.
The [NEXT] is pushed after selection.

2. INNER DIAMETER CUTTING



The inner diameter of a workpiece is cut.
The [NEXT] is pushed after cutting.

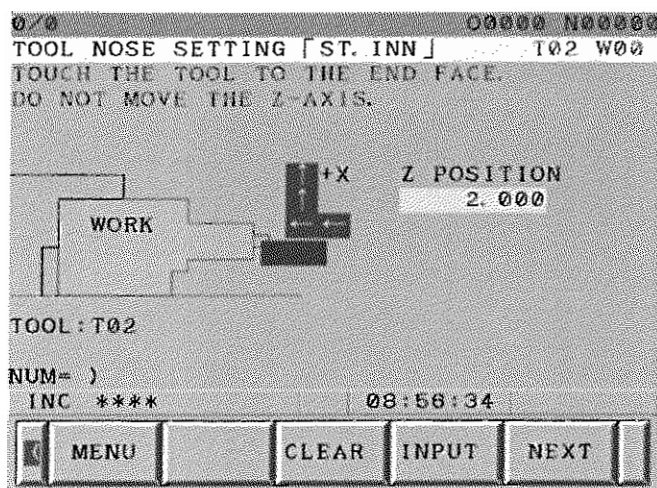
3. MEASUREMENT



The diameter value of inner of a workpiece is measured and inputted.

The [NEXT] is pushed after an input. At this time, the value of the X-axis of TOOL OFFSET / GEOMETRY is calculated.

4. TOOL NOSE SETTING OF THE Z-AXIS

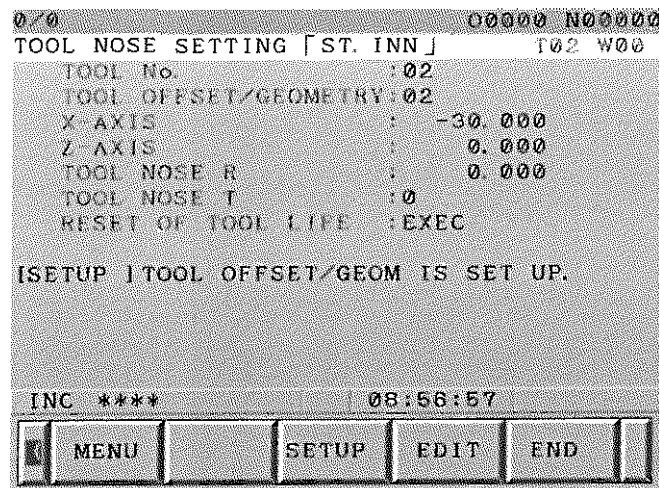


The value by which Z position was calculated by workpiece coordinate system shift setup is displayed.

Touch the tool to the end face.

The [NEXT] is pushed after tool nose setting. At this time, the value of the Z-axis of TOOL OFFSET / GEOMETRY is calculated.

5. SETUP OF TOOL OFFSET / GEOMETRY

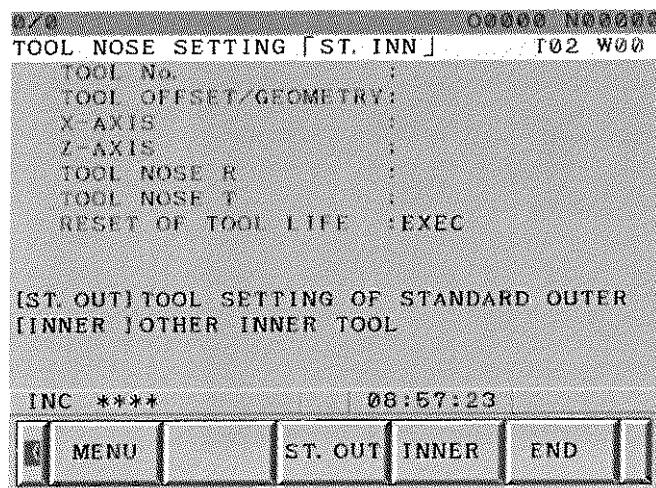


If [EDIT] is pushed, cursor is displayed and a value can be changed.

A push on [SETUP] sets a value as TOOL OFFSET / GEOMETRY.

In a setup "EXEC" tool life management, the same processing as the completion of tool exchange is performed.

6. END



A push on [ST.OUT] displays the tool nose setting screen of standard outer diameter tool.

A push on [INNER] displays the tool nose setting screen of inner diameter tool.

It will end, if [END] is pushed.