Operation Display Panel PC100G3
Function Guide

◆ Introduction

■ Overview of This Manual

This manual provides information about Operation Display Panel **PC100G3**, a direct drive servo motor. Make sure to refer to this manual when you use the motor.

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◆ Conventions

■ Symbol Marks

Throughout this manual, the following symbol marks are used to distinguish explained information.

⚠ DANGER : Describes cautions for avoiding danger in potentially hazardous situations that may put operators' lives and bodies in danger such as electric shock accident.

✋ WARNING : Describes points to be noted in situations that may cause damages to software and/or hardware or system troubles.

✋ CAUTION : Describes important points when understanding operations and functions.

△ TIP : Describes supplementary information about descriptions.

☞ SEE ALSO : Describes items and pages that should be referenced.

◆ Precautions

■ Precautions Regarding this Manual

- Please make sure this manual is made available to all end users.
- Do not operate the product before reading this manual and thoroughly understanding its contents.
- This manual was created to provide detailed explanations of the functions offered by the product. It is not guaranteed that it will suit any particular purpose a customer might have.
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- To ensure your protection and that of the product, as well as the systems that use the product, please observe all safety instructions and other precautions listed in this manual.
- If you operate the product in a manner contrary to the instructions provided in this manual, the safety protection may be lost. In such an event, we make no warranties for the quality, performance, functions and safety of the product.
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- Be sure to replace any parts and consumables of the product with parts specified by us.
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- We assume no responsibility for damages any user or third party may incur through use of the product, nor for any direct or indirect damages that the user or a third party may incur due to product defects that cannot be predicted by us, etc.

Table of Contents

A. Operation Display Panel

This section describes the PC100G3 operation display panel that is connected to the intelligent drive DrvGIII series to be used for drive maintenance and parameter setting.

A.1 Overview

The operation display panel is used by connecting to the <CN1> serial interface connector (RS232C/RS485) of the DrvGIII drive. It is in the RS232C single channel communication state, regardless of the <RS-ID> rotary switch setting state on the front panel. Moreover, it can be connected or disconnected even when the drive is in the current-carrying state.

The following screens are provided on the operation display panel:
[Error status screen]
    The current error status and past history recorded in the drive can be checked.
[#parameter/#monitor display screen]
    The contents of #parameter and #monitor are displayed repeatedly.
[#parameter setup screen]
    #parameters can be changed.
[Special Command Setup screen]
    Frequently used commands can be issued using a simple operation.
[Table data setup screen]
    The table data that describes the operation of the built-in controller can be edited, copied and deleted.
[I/O monitor screen]
    The contact status of hard I/O and logic I/O are displayed repeatedly.
[I/O setup confirmation screen]
    Hard I/O logic settings, initial values of software contact inputs not assigned to hard I/O, and hard I/O pin assignment status can be checked.
[Absolute encoder maintenance screen]
    A screen for maintenance of a DB5C motor with an absolute encoder.
[Version display screen]
    Drive firmware codes and partial product (drive) model names are displayed.

The setting and registration of #parameters, the registration (edit, setup, copy, delete) of table data and the registration of an absolute encoder skew value can only be performed in the setup/registration enable state. Perform setup and registration after issuing an enable setup/registration command using the special command setup screen after turning on the power to the panel. The setup/registration enable state is stored in the panel while electricity is flowing into the panel.

A.2   Names of Components

Display area

"MODE" button

"▶": Right button

"▼": Down button

"▲": Up button

"SET" button
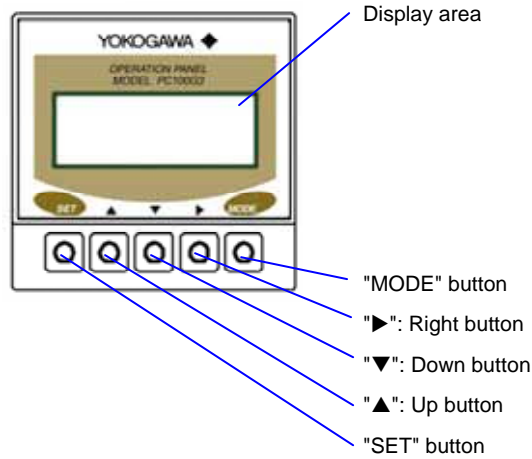
When "▲," "▼," and "▶" are pressed continuously for one second or more, the same processing is performed repeatedly.
- "▲":   Use to move the screen upward, or to increase the numeric value pointed by the cursor.
- "▼":   Use to move the screen downward, or to decrease the numeric value pointed by the cursor.
- "▶":   Use to move the screen in the right direction, or to move the cursor to the right.

Regarding "SET" and "MODE," their functions vary with how long they are pressed continuously.
In this manual, when these buttons are released within one second, their functions are expressed as "S" and "M." When these buttons are kept pressed down continuously for more than one second, their functions are expressed as "S"-LP and "M"-LP.
- "SET":   Set button
- "MODE":   Mode button. When this button is held down continuously on each screen, the display returns to the screen transition screen.

A.3 Transition of Screens

Individual screens make transition as shown below. Also, the error status screen appears as the initial screen when the power is turned on and the operation display panel is mounted while powering on.

"S": Enters the current screen.
"▲": The screen moves upward.
"▼": The screen moves downward.
"▶": The screen moves in the right direction.
"M": (Does not function.)
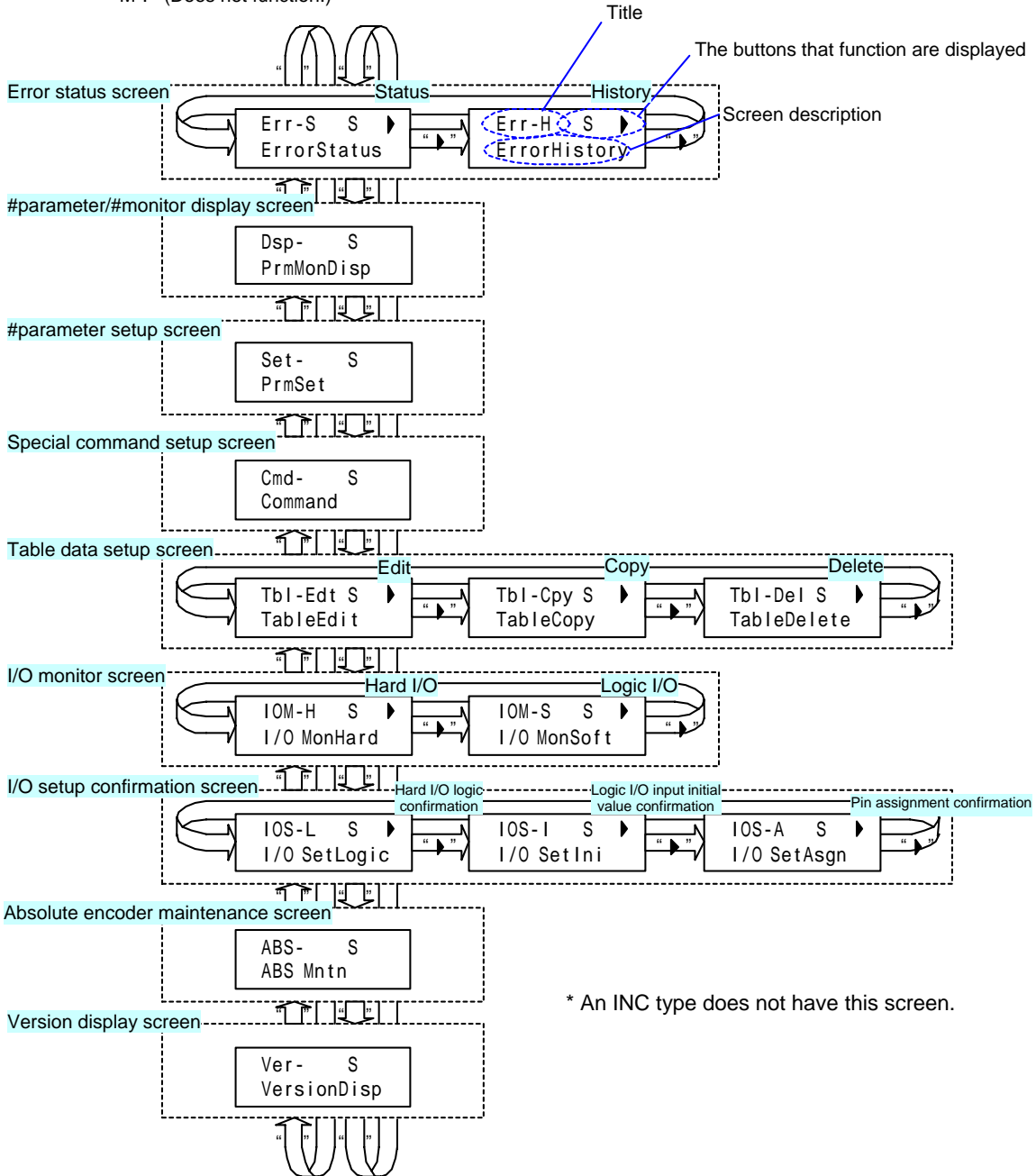
* An INC type does not have this screen.

A.4   Error Status Screen

A.4.1   Status

An error status is obtained from the drive periodically (at approximately 200 msec) and then displayed repeatedly. There are 16 error status buffers; nothing is stored in them when there is no error. The buffer numbers are assigned to errors in the ascending order. The error status buffers are cleared by an error reset.

'S":   (Does not function.)
"▲":   Increases the numeric value pointed by the cursor.
"▼":   Decreases the numeric value pointed by the cursor.
"▶":   Moves the cursor on a buffer number to the right.
            If this is pressed while the cursor is at the number of units, the cursor moves to the number of tens.
"M" -LP: Displays the screen transition screen.

Buffer number being displayed
(An error occurred earlier has a younger number.)

Screen title

Total number of errors being generated

Err-S 03/12
20.4 PwrMdl E

Error message
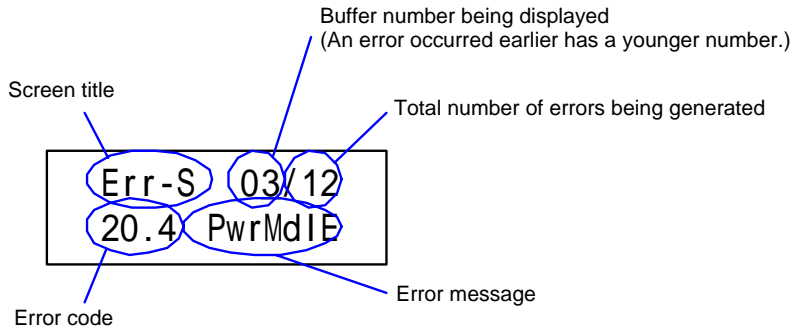
Error code

Note: The error code consists of a main code in the integer part and a subcode in the decimal part.

The screen above shows the following contents:
   The total number of errors being generated is 12. The screen shows the third error occurred among them, the error code is 20.4, and the error message is "PwrMdlE."

[Display when no error is being generated]

Err-S 00/00
00.0 - - - - - - -
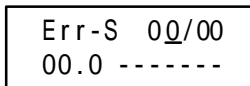
A.4.2 Records

History is obtained from the drive periodically (at approximately 200 msec) and is displayed repeatedly. There are 16 history buffers. The content of the oldest error is erased every time an error occurs, and the content of a newly occurred error is stored. Buffer numbers are assigned to errors in the ascending order of error occurrence. The history buffers are not cleared even if errors are reset.

'S': (Does not function.)
"▲": Increases the numeric value pointed by the cursor.
"▼": Decreases the numeric value pointed by the cursor.
"▶": Moves the cursor on a buffer number to the right.
If this is pressed while the cursor is at the number of units, the cursor moves to the number of tens.
"M" -LP: Displays the screen transition screen.

Buffer number being displayed
(An error occurred earlier has a younger number.)

Screen title

Total number of errors that are stored in the history buffers

```
Err-H  03/12
20.4  PwrMdlE
```

Error message

Error code

Note: The error code consists of a main code in the integer part and a subcode in the decimal part.

The screen above shows the following contents:
The total number of errors stored in the history buffers is 12. The display shows the third error occurred among them, the error code is 20.4, and the error message is "PwrMdlE."

[Display when nothing is stored in the history buffers]

```
Err-H  00/00
00.0 -------
```

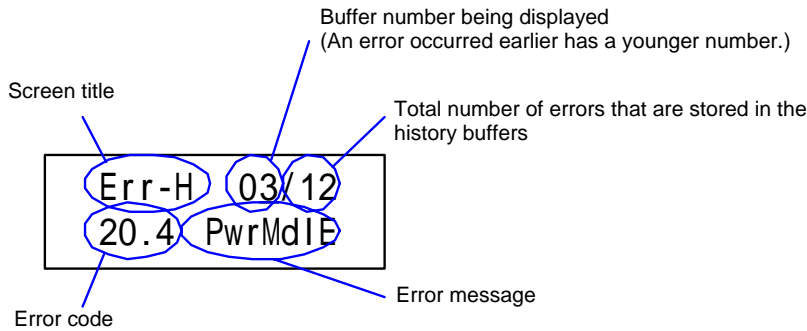## A.5 #parameter/#monitor Display Screen

The current values of the #parameter/#monitor having the specified number is obtained from the drive periodically (at approximately 200 msec) and is displayed repeatedly.

"S": (Does not function.)
"▲": Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a number.
The category changes if this button is pressed when the cursor is on a category.
"▼": Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a number.
The category changes if this button is pressed when the cursor is on a category.
"▶": Moves the cursor on a #parameter/#monitor number to the right.
"M": Switches between data display and prompt display.
"M" -LP: Displays the screen transition screen.

[Displaying data]

Category #: Set value
##: Registered value
Note: There are no registered values for monitors (numbers 300 and later)

Screen title

#parameter/#monitor number being displayed

```
Dsp-      ##000
D 0000000100
```

Image of cursor move

```
#  #  1  2  3
```

Display format
D: Decimal notation
H: Hexadecimal notation
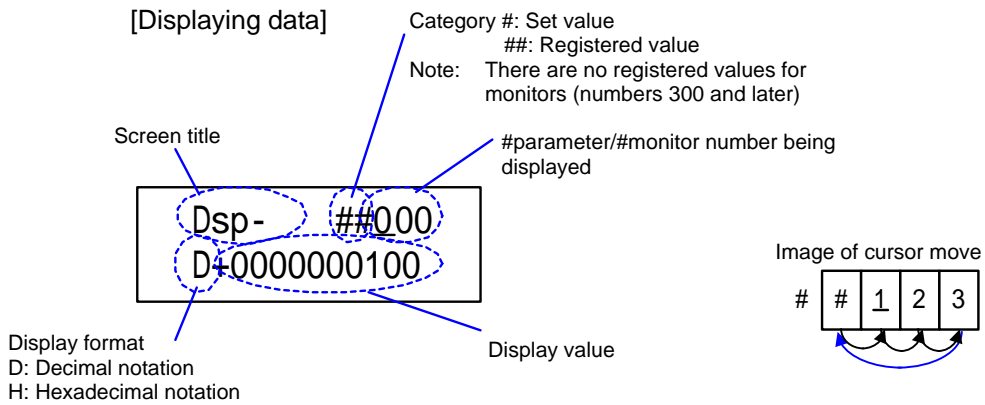
Display value

The display above shows the following contents:
The registered value of parameter 0 is displayed, and its value is "100" in decimal notation.

[Display in hexadecimal notation]
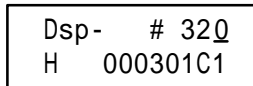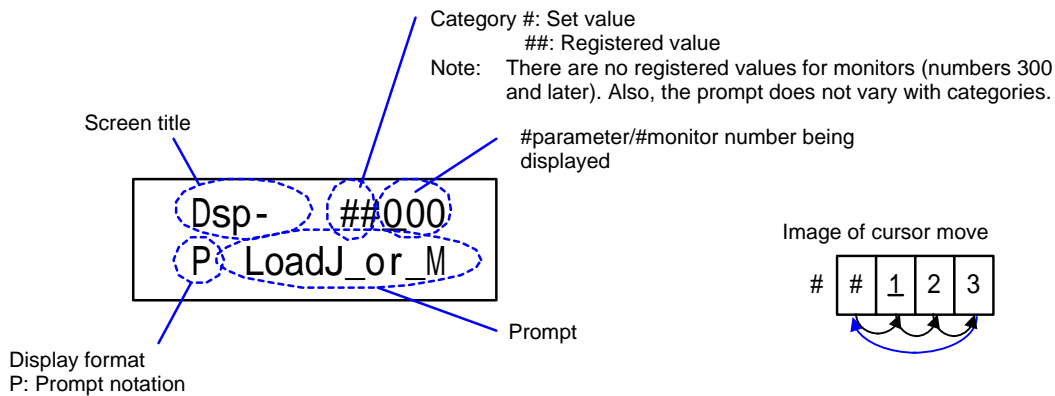
```
Dsp-    # 320
H    000301C1
```

[Displaying a prompt]

Category #: Set value
##: Registered value
Note: There are no registered values for monitors (numbers 300 and later). Also, the prompt does not vary with categories.

Screen title

#parameter/#monitor number being displayed

```
Dsp-      ##000
P  LoadJ_or_M
```

Image of cursor move

```
#  #  1  2  3
```

Display format
P: Prompt notation

Prompt

The display above shows the following contents:
The prompt of parameter 0 is displayed, and that prompt is "LoadJ_or_M."

A.6   #parameter Setup Screen

This screen is provided to change the #parameters of the drive.
The setup and registration of #parameters in the drive can be performed by holding down the "SET" button. Note that #parameters cannot be set while in the prompt display state. In such a case, switch to data display and then perform the setup/registration of #parameters.
Furthermore, perform setup/registration by enabling setup/registration after issuing an enable setup/registration command on the special command setup screen after powering on.

"S" -LP: Performs setup/registration using the data displayed on the screen.
Setup is performed if the category is "set value," and registration is performed if the category is "registered value."

"▲":   Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a number or value.
Switches the category/sign if this button is pressed when the cursor is on a category or sign.

"▼":   Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a number or value.
Switches the category/sign if this button is pressed when the cursor is on a category or sign.

"▶":   Moves the cursor on a #parameter number or value to the right.

"M":   Switches between data display and prompt display.

"M" -LP: Displays the screen transition screen.

[Displaying data]

Category   #: Set value
##: Registered value

Number of a #parameter being set

Screen title

Value being set
(The current value is obtained when a #parameter number is changed.)

Set -   ##000
D+0000000100

Display format
D: Decimal notation
H: Hexadecimal notation

Image of cursor move

When in decimal notation   # # 0 1 2

D + 1 2 3 4 5 6 7 8 9 0

When in hexadecimal notation   # # 0 9 8

H   F E D C B A 9 8

[Operating]
with "S" -LP

Set-   # 000
Operating!

[Operation complete]

Set-   # 000
Complete!

Go to the original screen by pressing "S" or after 1 second elapses

[Operation failed]

Set-   # 000
Incomplete!

Go to the original screen by pressing "S"

[Displaying a prompt]

Category   #: Set value
                ##: Registered value

Screen title   Number of #parameter being set

Set -   ##000
P_LoadJ_or_M

Image of cursor move

\# | # | 1 | 2 | 3

Display format
P: Prompt notation

Prompt
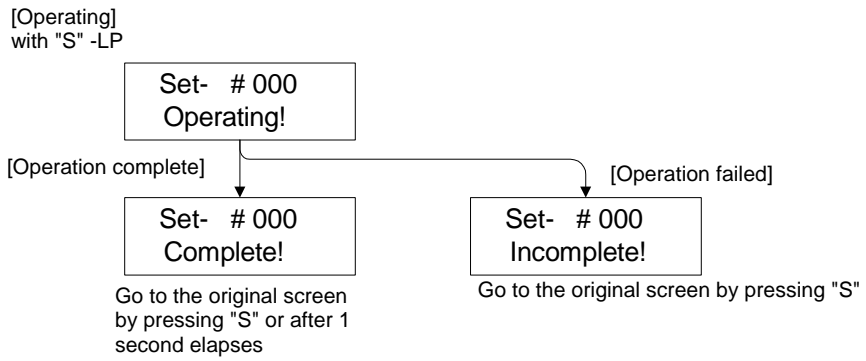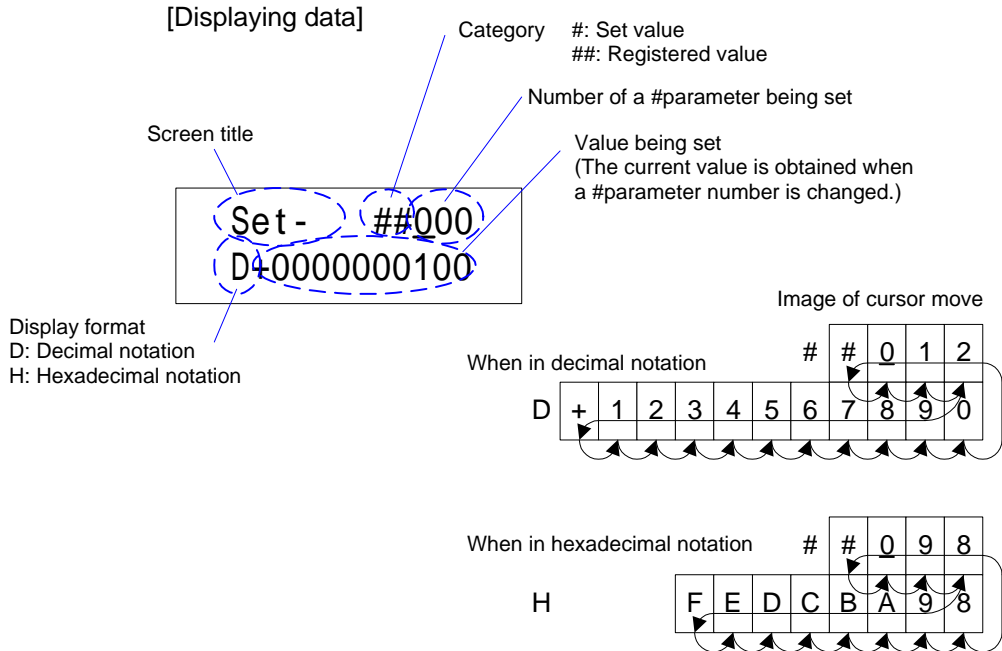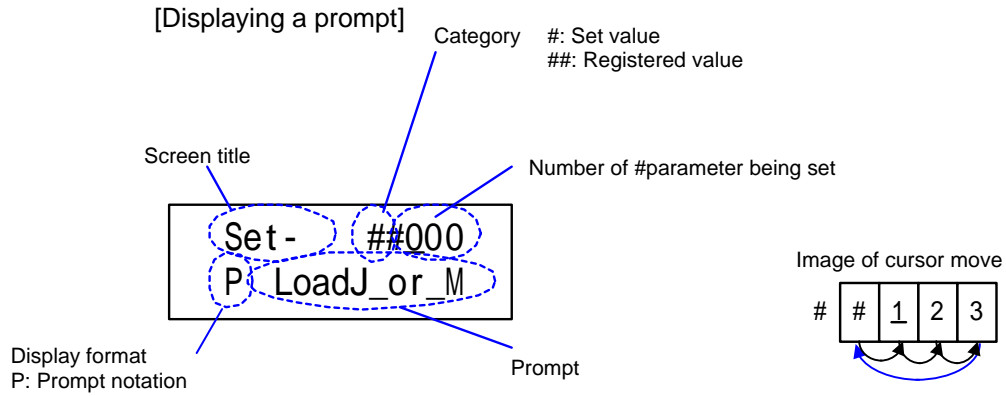
The display above shows the following contents:
     The prompt of parameter 0 is displayed, and that prompt is "LoadJ_or_M."

A.7　Special Command Setup Screen

This screen is used to instruct selected commands to the drive.
After a command is selected, an instruction is issued to the drive by pressing the "SET" button.
The setup/registration enable state by the enable setup/registration command is stored in the panel while electricity is flowing to the panel.

[In the cases other than "Start"]　　　　　[In the case of "Start"]

Screen title　　　　　　　　　　　　　　　　Screen title

Displays "*" as many as the number of commands being issued

Displays "*" as many as the number of commands being issued

Cmd-
Abort　　*

Cmd-
Start　　**　00

Table number

Command content　　　　　　　　　　　　　Command content
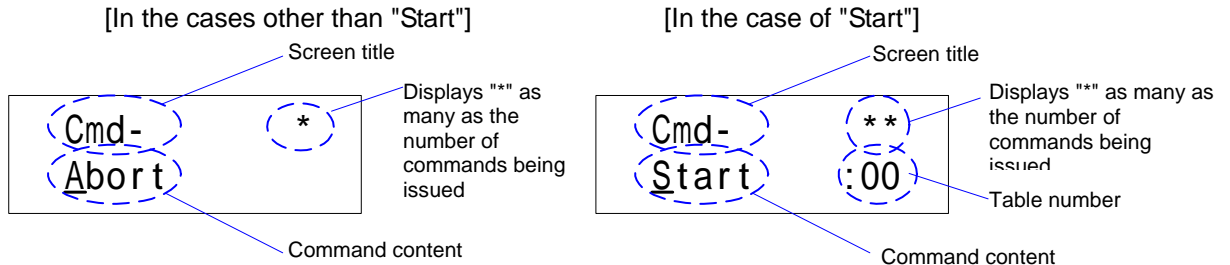
Command content	Screen display	Corresponding @command
Abort command	"Abort"	@1
Stop command	"Stop"	@2
Start command	"Start"	@3: Table number
Reset Error	"RstErr"	@4
Switch Operation Privilege (to serial communication side)	"toRS"	@5: 0
Switch Operation Privilege (to CN4 side)	"toIF"	@5: 1
Servo On	"SrvOn"	@8: 1
Servo Off	"SrvOff"	@8: 0
Set Origin Offset (home proximity direction)	"OrgOffN"	@10: 0
Set Origin Offset (+ direction)	"OrgOff+"	@10: 1
Set Origin Offset (- direction)	"OrgOff-"	@10: -1
Jog Up command	"JogUp"	@11: 1
Jog Down command	"JogDown"	@11: -1
Jog Stop command	"JogStop"	@11: 0
Clear Coordinate System	"ClrCoord"	@13: 0
Set Integral Limiter Automatically	"AutoIlim"	@14
Register All Parameters	"RgstPrm"	@16
Reset Error (with clear history)	"RstErrH"	@19
Reset Drive	"RstDrv"	@96
Enable Setup/Registration	"SetRgsiE"	(No instruction to the drive)

"▲"
"▼"

"S":　　Instructs the command selected to the drive.
"▲":　　The command content is switched in the upward direction if this button is pressed when the cursor is on the command selected.
　　　　Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a table number.
"▼":　　The command content is switched in the downward direction if this button is pressed when the cursor is on the command selected.
　　　　Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a table number.
"▶":　　Moves the cursor on the command selected or on a table number to the right only if "Start" is selected.
　　　　If this button is pressed when the cursor is on the command selected, the cursor moves to the number of tens of the table number.
"M" -LP:　Displays the screen transition screen.

If the "S" button is pressed:　　　[Operating]

Cmd-
Operating!

[Operation completed within one second]　[Operation not completed within one second]

Cmd-
<R00

Go to the original screen (Registration screen)

Reply message
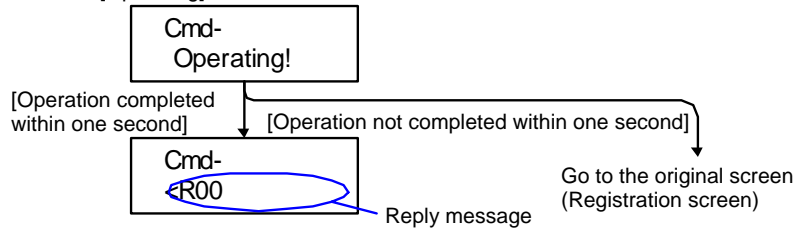
Go to the original screen by pressing "S" or after 1 second elapses.
(After an error is resolved, go to the original screen by pressing the "S" button.)

A.8 Table Data Setup Screen

A.8.1 Editing and Setting Up

The table data setup screen edits and sets the table data registered in the drive.
When the "SET" button is pressed, the setup screen keeps switching. Perform necessary settings on each screen, and proceed to the registration screen. Hold down the "SET" button on the registration screen to register the settings in the drive.
Upon powering on, issue an enable setup/registration command on the special command setup screen, and then register table data after entering the setup/registration enable state.
To cancel a registration operation, go to the screen transition screen by pressing the "MODE" button.
The entire registration operation up to that point will be cancelled.

Also use this screen to verify the table data registered in the drive. Press the "SET" button while verifying the contents of settings on each screen without changing them. When the verification of required items is complete, hold down the "MODE" button and go to the screen transition screen. No registration of table data in the drive is performed.

[Screen flow]

Number of the table being processed

[Initial Setting screen]

```
Tbl-Edt   00
PrmChg
```

"S"

[Operation Code Selection screen]

```
Tbl-OpCod 00
PrmChg
```

"S"

[Setup Screen group corresponding to operation code]

```
Tbl-Dir   00
O.-Dir
```

"S"

[Setup Screen group common to operation code]

```
Tbl-CoinE 00
O.-Disable
```

"S"

[Registration screen]

```
Tbl-Rgst  00
Regist OK?
```

"▶"

Return to the operation code selection screen while retaining the content being edited.

"S"-LP

Execution of registration processing

⚠ TIP

The operation codes for table data with table numbers 60 to 63 cannot be changed.

(1) Initial Setting Screen

Screen title

Table number being selected

Operation code of the table selected

Tbl - Edt   OO
PrmChg
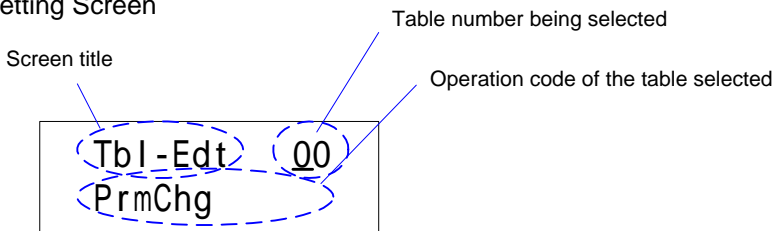
"S":   Moves to the next screen (Operation code selection screen).
"▲":   Increases the numeric value pointed by the cursor.
"▼":   Decreases the numeric value pointed by the cursor.
"▶":   Moves the cursor on a table number to the right. If this button is pressed when the cursor is at the number
         of units, the cursor moves to the number of tens.
"M" -LP: Displays the screen transition screen.

(2) Operation Code Selection Screen

Screen title

Table number being processed

Tbl - OpCod OO
PrmChg

Operation code prompt
being selected

[Operation code]
Test   Test operation
A-Tune   Auto tuning
Homing   Return to the home
           position
AbsMov   ABS move
IncMov   INC move
Dwell   Dwell
PrmChg   Parameter change
Branch   Conditional branching
Cmd   Command
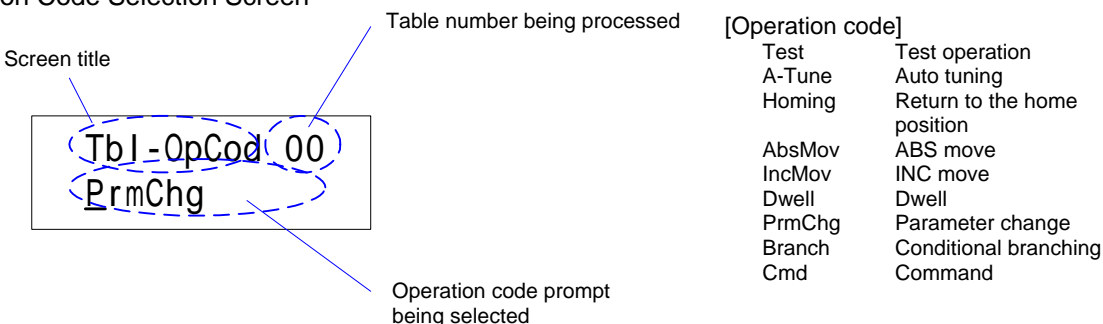
"S":   Moves to the next screen (the beginning of the setup screen group corresponding to the operation code).
"▲":   The operation code changes in the direction where its number increases.
"▼":   The operation code changes in the direction where its number decreases.
"▶":   (Does not function.)
"M" -LP: Displays the screen transition screen.

There is no setup screen group corresponding to the operation code for test operation and
auto tuning. If the "SET" button is pressed, the screen display moves to the beginning of the
Setup Screen group common to the operation code.

(3) Setup Screen Group Corresponding to Operation Code
     There is no setup screen group corresponding to the operation code for test operation and
     auto tuning.

Screen title

Table number being processed

Tbl - Dir   OO
O. - Dir

Code being selected or set value

"S":   Moves to the next screen.
"▲":   Changes in the direction where the digit pointed by on the cursor increases or the digit of the code
         selected increases.
"▼":   Changes in the direction where the digit pointed by the cursor decreases or the digit of the code selected
         decreases.
"▶":   Moves the cursor to the right. This button may or may not function depending on the screen content.
"M" -LP: Displays the screen transition screen.

■ Homing (in the Case of INC Type)

[Homing direction selection]

Tbl - Dir   OO
0. - Dir

"S"   "▶" does not function.

"▲", "▼":
0. -Dir   Count down direction
1. +Dir   Count up direction

[Acceleration type selection]

Tbl - AccTp OO
0. Constant

"S"   "▶" does not function.

"▲", "▼":
0. Constant   Constant velocity
1. S-Curved   S-curved

[Acceleration time selection]

Tbl - AccTm OO
0. 0000000100

"S"   "▶" does not function.

Displays the numeric value of the parameter selected

"▲", "▼":
0.   #72   Acceleration time 0
1.   #73   Acceleration time 1
2.   #74   Acceleration time 2
3.   #75   Acceleration time 3

[Deceleration type selection]

Tbl - DecTp OO
0. Constant

"S"   "▶" does not function.

"▲", "▼":
0. Constant   Constant velocity
1. S-Curved   S-curved

[Deceleration time selection]

Tbl - DecTm OO
0. 0000000100

"▶" does not function.

"S"   Displays the numeric value of the parameter selected

"▲", "▼":
6   Deceleration time 0
1.   #77   Deceleration time 1
2.   #78   Deceleration time 2
3.   #79   Deceleration time 3

[Hardware EOT signal use selection]

Tbl - OrgOT OO
0. NoUse

"S"   "▶" does not function.

"▲", "▼":
0. NoUse   Do not use
1. Use   Use

[Home proximity signal use selection]

Tbl - OrgOrg OO
0. NoUse

"S"   "▶" does not function.

"▲", "▼":
0. NoUse   Do not use
1. Use   Use

[Home proximity signal enable/disable selection during EOT search]

Tbl - OinOTS OO
0. Disable

"S"   "▶" does not function.

"▲", "▼":
0. Disable   Disable
1. Enable   Enable

[Origin selection]

Tbl - OrgSel OO
0. OutSide

"S"   "▶" does not function.

"▲", "▼":
0. OutSide   Outside
1. InSide   Inside

* A different screen is displayed for an ABS type.

[Coin window selection]

Tbl - CoinW OO
0. 0000000005

"▶" does not function.

"S"   Displays the numeric value of the parameter selected

"▲", "▼":
0.   #90   Coin window 0
1.   #91   Coin window 1
2.   #92   Coin window 2
3.   #93   Coin window 3
4.   #94   Coin window 4
5.   #95   Coin window 5
6.   #96   Coin window 6
7.   #97   Coin window 7

Go to the first screen of the setup screen group common to the operation code

■ **Homing (in the Case of ABS Type)**

[Homing direction selection]

```
Tbl - Dir    00
0. -Dir
```

"▲", "▼":
0.-Dir   Count down direction
1.+Dir   Count up direction

"S"   "▶" does not function.

[Acceleration type selection]

```
Tbl - AccTp 00
0. Constant
```

"▲", "▼":
0. Constant   Constant velocity
1. S-Curved   S-curved

"S"   "▶" does not function.

[Acceleration time selection]

```
Tbl - AccTm00
0. 0000000100
```

"▲", "▼":
0.   #72   Acceleration time 0
1.   #73   Acceleration time 1
2.   #74   Acceleration time 2
3.   #75   Acceleration time 3

"S"   "▶" does not function.

Displays the numeric value of the parameter selected

[Deceleration type selection]

```
Tbl - DecTp 00
0. Constant
```

"▲", "▼":
0. Constant   Constant velocity
1. S-Curved   S-curved

"S"   "▶" does not function.

[Deceleration time selection]

```
Tbl - DecTm00
0. 0000000100
```

"▲", "▼":   6   Deceleration time 0
1.   #77   Deceleration time 1
2.   #78   Deceleration time 2
"▶" does not function.   3.   #79   Deceleration time 3

"S"

Displays the numeric value of the parameter selected

[Move direction selection for rotation coordinates]

```
Tbl - DirOp 00
0. Type0
```

"▲", "▼":
0. Type0   Shortcut
1. Type1   Do not cross over the origin.
2. Type2   Data dependent
3. Type3   Fixes the rotation direction to +
4. Type4   Fixes the rotation direction to -

"▶" does not function.

"S"

* A different screen is displayed for an INC type.

[Coin window selection]

```
Tbl - CoinW00
0. 0000000005
```

"▲", "▼":
0.   #90   Coin window 0
1.   #91   Coin window 1
2.   #92   Coin window 2
3.   #93   Coin window 3
4.   #94   Coin window 4
5.   #95   Coin window 5
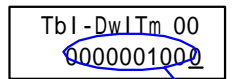6.   #96   Coin window 6
7.   #97   Coin window 7

"▶" does not function.

"S"

Displays the numeric value of the parameter selected

Go to the first screen of the setup screen group common to the operation code

■ ABS move, INC move

[Acceleration type selection]

```
Tbl -AccTp 00
0. Constant
```

"▶" does not function.

"▲", "▼":
0. Constant   Constant velocity
1. S-Curved   S-curved

"S"

[Acceleration time selection]

```
Tbl -AccTm00
0. 00000000100
```

"▶" does not function.

Displays the numeric value of the parameter selected

"▲", "▼":
0.	#72	Acceleration time 0
1.	#73	Acceleration time 1
2.	#74	Acceleration time 2
3.	#75	Acceleration time 3

"S"

[Deceleration type selection]

```
Tbl -DecTp 00
0. Constant
```

"▶" does not function.

"▲", "▼":
0. Constant   Constant velocity
1. S-Curved   S-curved

"S"

[Deceleration time selection]

```
Tbl -DecTm00
0. 00000000100
```

"▶" does not function.

Displays the numeric value of the parameter selected

"▲", "▼":
0.	#76	Deceleration time 0
1.	#77	Deceleration time 1
2.	#78	Deceleration time 2
3.	#79	Deceleration time 3

"S"

[Velocity selection]

```
Tbl -Vel    00
0. 0000360000
```

"▶" does not function.

Displays the numeric value of the parameter selected

"▲", "▼":
0.	#64	Feeding velocity 0
1.	#65	Feeding velocity 1
2.	#66	Feeding velocity 2
3.	#67	Feeding velocity 3
4.	#68	Feeding velocity 4
5.	#69	Feeding velocity 5
6.	#70	Feeding velocity 6
7.	#71	Feeding velocity 7

"S"

[Value specification selection]

```
Tbl -Val Tp 00
0. Direct
```

"▶" does not function.

"▲", "▼":
0. Direct   Direct specification
1. Indirect   Indirect specification

"S"

[Value setting]

For direct specification   For indirect specification

```
Tbl -MovVal 00        Tbl -MovPrm00
+0000090000                  # 100
```

Sign   Value

Parameter/monitor number
(Only the set value can be referenced.)

"▲", "▼":   Switches a sign and category
Increases/decreases a value and
parameter/monitor number.
"▶":   Move the cursor to the right.

"S"

[Move direction selection for rotation coordinates]

```
Tbl -DirOp 00
0. Type0
```

"▶" does not function.

"▲", "▼":
0. Type0	Shortcut
1. Type1	Do not cross over the origin
2. Type2	Data dependent
3. Type3	Fixes the rotation direction to +
4. Type4	Fixes the rotation direction to -

"S"

[Coin window selection]

```
Tbl -CoinW00
0. 0000000005
```

"▶" does not function.

Displays the numeric value of the parameter selected

"▲", "▼":
0.	#90	Coin window 0
1.	#91	Coin window 1
2.	#92	Coin window 2
3.	#93	Coin window 3
4.	#94	Coin window 4
5.	#95	Coin window 5
6.	#96	Coin window 6
7.	#97	Coin window 7

"S"

Go to the first screen of the setup screen
group common to the operation code

■ Dwell

[Dwell time setting]

```
Tbl - Dwl Tm 00
  0000001000
```

Value

"▲", "▼": Increases/decreases a value.
"▶": Moves the cursor to the right.

"S"

↓

Go to the first screen of the setup screen
group common to the operation code

■ Parameter change

[Type selection]

```
Tbl - PrmTp 00
0. Direct
```

"▶" does not function.

"▲", "▼":
  0. Direct   Direct
  1. Indirect   Indirect
  2. Single1   Monomial 1
  3. Single2   Monomial 2
  4. Double1   Binomial 1
  5. Double2   Binomial 2
  6. Double3   Binomial 3

"S"

[Operator selection]

```
Tbl - PrmOpe00
0. + Add
```

"▶" does not function.

"▲", "▼": Monomial operation
  0. + Add   Addition   Not allowed
  1. - Sub   Subtraction   Allowed (minus sign)
  2. * Mul   Multiplication   Not allowed
  3. / Div   Division   Not allowed
  4. % Mod   Module   Not allowed
  8. & bitAnd Bit AND   Not allowed
  9. ^ bitExor Bit exclusive OR Not allowed
  A. | bitOr   Bit OR   Not allowed
  C. ~ bitInv Bit inversion   Allowed

"S"

Category #: Set value
##: Registered value

[Substituted parameter number selection]

```
Tbl - PrmVNo00
  # 100
```

Parameter number

"▲", "▼": Changes a category.
  Increases/decreases a parameter number.
"▶": Moves the cursor to the right.
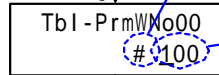
"S"

[Substitution equation setting]

0. Direct   Direct
2. Single1   Monomial 1

"▲", "▼": Changes a sign.
  Increases/decreases a value or parameter/monitor number.
"▶": Moves the cursor to the right.
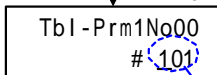
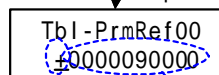Operated parameter/monitor number 1

```
Tbl - Prm1No00
  # 101
```

Parameter/monitor number
(Only the set value can be referenced.)

4. Double1 Binomial 1
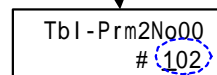5. Double2 Binomial 2

7. Double3 Binomial 3

Operated parameter/monitor number 2

Operated value

```
Tbl - PrmRef 00
 +000090000
```

Sign   Value

1. Indirect Indirect
3. Single2 Monomial 2

```
Tbl - Prm2No00
  # 102
```

Parameter/monitor number
(Only the set value can be referenced.)

"S"

↓

Go to the first screen of the setup screen
group common to the operation code

Example	Type		Operator code		Substituted parameter number	Operated value	Operated parameter/monitor number 1	Operated parameter/monitor number 2
		Example		Example				
#12 = 34	Direct substitution	0	don't care	0	12	34	-	-
#12 = #34	Indirect substitution	1		0	12	-	34	-
#12 = ˜34	Monomial calculation substitution	2	Required setting (Monomial operator)	8	12	34	-	-
#12 = -#34	Monomial calculation substitution	3		1	12	-	34	-
#12 = 34 + #56	Binomial calculation substitution	4	Required setting (Binomial operator)	0	12	34	56	-
#12 = #34 & 56	Binomial calculation substitution	5		5	12	56	34	-
#12 = #34/#56	Binomial calculation substitution	6		3	12	-	34	34

■ Conditional Branching

[Comparison operator selection]

```
Tbl - Br Cod 00
0. >
```

"▶" does not function.

"▲", "▼":
0. >   Greater than
1. <   Smaller than
2. >=   Greater than or equal to
3. <=   Smaller than or equal to
4. = Eq   Equal to
5. != NotEq Not equal to
6. && And   AND
7. ll Or   OR
8. & bitAnd Bit AND
9. ^ bitExor Bit exclusive OR
A. l bitOr   Bit OR

"S"

[Number selection when conditions are satisfied]

```
Tbl - Br No  00
01. Branch
```

"▲", "▼": Increases/decreases a table number.
"▶": Moves the cursor to the right.

Branching destination table number when conditions are satisfied

Operation code of the branching destination table number being selected

"S" Left side

[Compared parameter/monitor number selection]

```
Tbl - Br 1No 00
# 101
```

"▲", "▼": Increases/decreases a parameter/monitor number.
"▶": Moves the cursor to the right.

"S"   Parameter/monitor number (Only the set value can be referenced.)

[Reference parameter/monitor number selection]   Right side

```
Tbl - Br 2No 00
# 102
```

"▲", "▼": Increases/decreases a parameter/monitor number.
"▶": Moves the cursor to the right.

"S"   Parameter/monitor number (Only the set value can be referenced.)

Go to the first screen of the setup screen group common to the operation code

■ **Command**

[Command selection]

```
Tbl-CmdCd 00
0. OrgOffset
```

"▶" does not function.

"▲", "▼":
0. OrgOffset   Origin offset position setting
1. CoordiSet   Coordinate system setting
2. IlimSet   Integral limiter self adjustment

"S"   "S"

2. IlimSet   0. OrgOffset

```
Tbl-OrgOff 00
0. Near
```

"▲", "▼":
0. Near   Sets closer to the origin.
1. +   Sets so that the offset value is positive.
2. -   Sets so that the offset value is negative.

"S"   "▶" does not function.

! Unique values are set without regard to these settings when the linear coordinate system is used.

"S"

1. CoordiSet

```
Tbl-CoTyp 00
0. Direct
```

"▲", "▼":
0. Direct   Direct specification
1. Indirect   Indirect specification

"S"   "▶" does not function.

For direct specification   For indirect specification

```
Tbl-CoVal 00
+00000090000
```

```
Tbl-CoPrm 00
# 100
```

Parameter/ monitor number

Sign   Value

"▲", "▼": Increases/ decreases a sign switching value or parameter/monitor number.
"▶": Moves the cursor to the right.

"S"

Go to the first screen of the setup screen group common to the operation code

(4) Setup Screen Group Common to the Operation Code

Screen title

Table number being processed

Tbl-CoinE 00
0.Disable

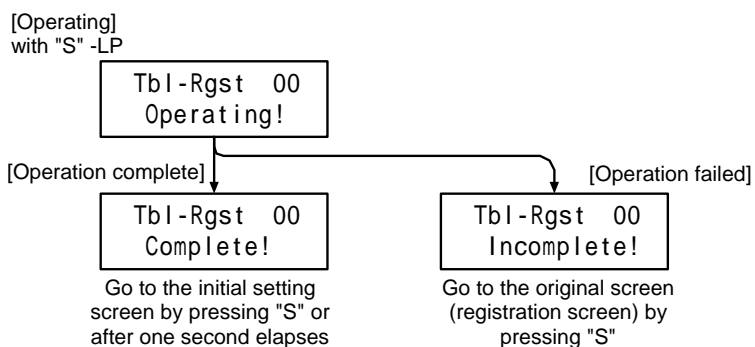Code being selected or set value

"S": Moves to the next screen.
"▲": Changes in the direction where the digit pointed by on the cursor increases or the digit of the code selected increases.
"▼": Changes in the direction where the digit pointed by the cursor decreases or the digit of the code selected decreases.
"▶": Moves the cursor to the right. This button may or may not function depending on the screen content.
"M"-LP: Displays the screen transition screen.

[Coin wait selection]

Tbl-CoinE 00
0.Disable

"▲", "▼":
0. Disable Disable
1. Enable Enable

"▶" does not function.

"S" ! The "S" button functions only when the operation code is "homing," "ABS move" or "INC move." For other codes, there is no coin wait function in operation itself.

[M function enable/disable selection]

Tbl-MFunc 00
0.Disable

"▲", "▼":
0. Disable Disable
1. Enable Enable

"▶" does not function.

"S"

When the M function is enabled

[M function type selection]

When the M function is disabled

Tbl-MPara 00
0.After

"▲", "▼":
0. After   Execute after operation
1. Para   Parallel execution

"▶" does not function.

"S"

[Post-execution continuation selection]

Tbl-Conti 00
0.Disable

"▲", "▼":
0. Disable Disable
1. Enable Enable

"▶" does not function.

"S"

When post-execution continuation is enabled

[Next table number selection]

When post-execution continuation is disabled

Tbl-NxtTb 00
01 Branch

"▲", "▼": Increases/decreases a table number.
"▶":   Moves the cursor to the left.

Operation code of the next table number selected

"S"

Go to the registration screen

Next table number

(5) Registration Screen

Screen title   Number of the table being processed

```
┌─────────────────────┐
│   Tbl-Rgst   00     │
│   Regist OK?        │
└─────────────────────┘
```
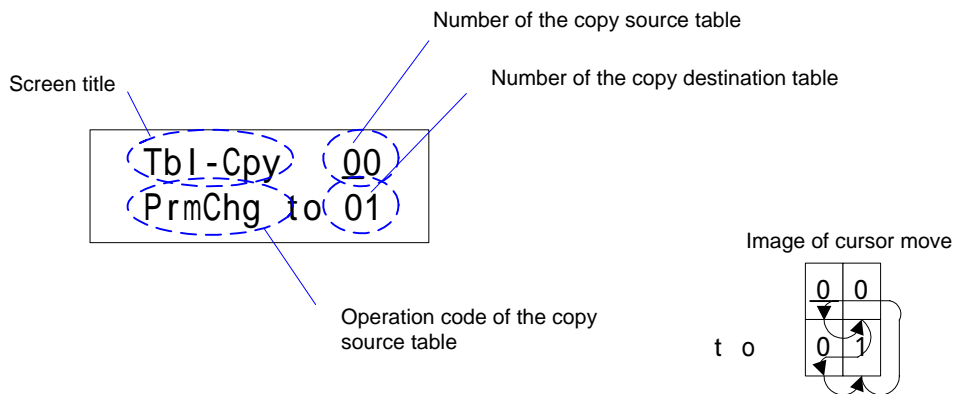
"S" -LP: Registers the content being edited in the drive.
"▶":   Returns to the first screen of the setup screen group corresponding to the operation code.
              The content being edited is retained as edited data.
"▲":   (Does not function.)
"▼":   (Does not function.)
"M" -LP: Displays the screen transition screen.

[Operating]
with "S" -LP

```
┌─────────────────────┐
│   Tbl-Rgst   00     │
│   Operating!        │
└─────────────────────┘
```

[Operation complete]   [Operation failed]

```
┌─────────────────────┐          ┌─────────────────────┐
│   Tbl-Rgst   00     │          │   Tbl-Rgst   00     │
│   Complete!         │          │   Incomplete!       │
└─────────────────────┘          └─────────────────────┘
```

Go to the initial setting   Go to the original screen
screen by pressing "S" or   (registration screen) by
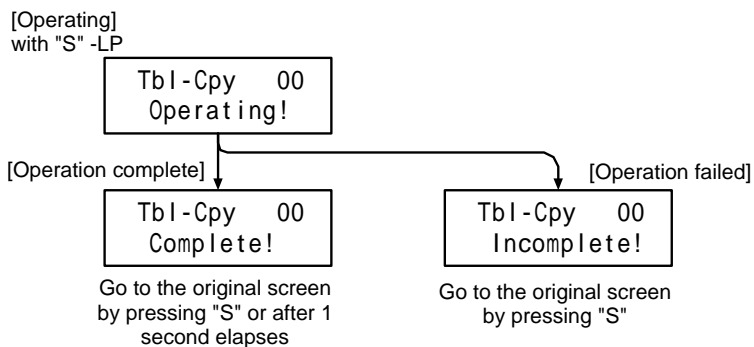after one second elapses   pressing "S"

A.8.2 Copy

The copy screen is used to copy the table data registered in the drive.
If the "SET" button is held down, table data is copied. To stop copying, hold down the "MODE'" button and go to the screen transition screen.
Upon powering on, issue an enable setup/registration command on the special command setup screen, and then copy table data after entering the setup/registration enable state.
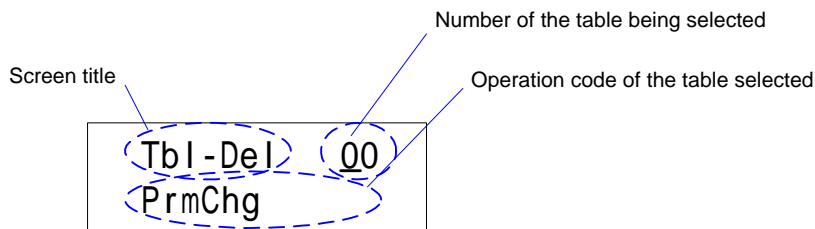
Number of the copy source table

Number of the copy destination table

Screen title

```
Tbl-Cpy    00
PrmChg to 01
```

Operation code of the copy source table

Image of cursor move

t o

"S" -LP: Copies using the screen content.
"▲":   Increases the numeric value pointed by the cursor.
"▼":   Decreases the numeric value pointed by the cursor.
"▶":   Moves the cursor to the right.
"M" -LP: Displays the screen transition screen.

[Operating]
with "S" -LP

```
Tbl-Cpy    00
Operating!
```

[Operation complete]

```
Tbl-Cpy    00
Complete!
```

Go to the original screen by pressing "S" or after 1 second elapses

[Operation failed]

```
Tbl-Cpy    00
Incomplete!
```

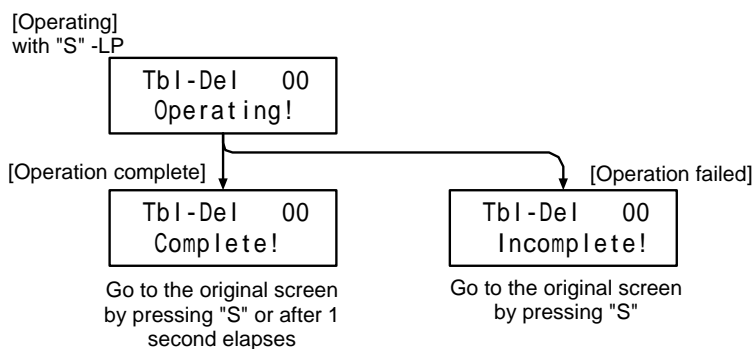Go to the original screen by pressing "S"

A.8.3 Delete

The delete screen is used to delete the table data that is registered in the drive.
If the "SET" button is pressed, table data is deleted. The deleted table is registered by the dwell (0 msec wait time).
Upon powering on, issue an enable setup/registration command on the special command setup screen, and then delete table data after entering the setup/registration enable state.
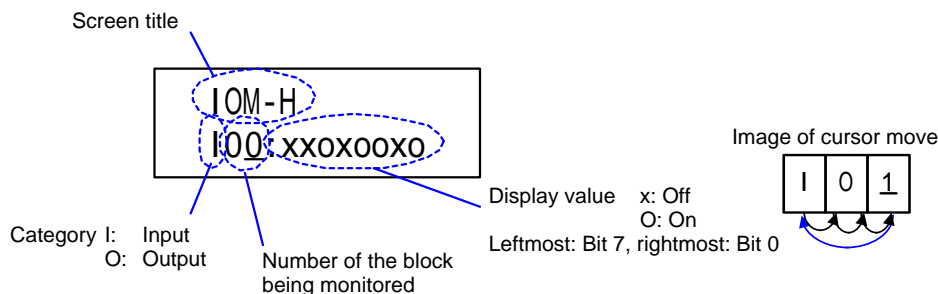To stop deleting, hold down the "MODE" button and go to the screen transition screen.

Number of the table being selected

Screen title

Operation code of the table selected

```
Tbl-Del     00
PrnChg
```

"S" -LP: Deletes the table selected.
"▲":   Increases the numeric value pointed by the cursor.
"▼":   Decreases the numeric value pointed by the cursor.
"▶":   Moves the cursor on a table number to the left. If this button is pressed when the cursor is at the number of units, the cursor moves to the number of tens.
"M" -LP: Displays the screen transition screen.

[Operating]
with "S" -LP

```
Tbl-Del     00
  Operating!
```

[Operation complete]

```
Tbl-Del     00
  Complete!
```

Go to the original screen by pressing "S" or after 1 second elapses

[Operation failed]

```
Tbl-Del     00
  Incomplete!
```

Go to the original screen by pressing "S"

A.9 I/O Monitor Screen

A.9.1 Physical (Hard) I/O

The physical (hard) I/O screen is used to obtain the current status of the hard I/O with the block number specified from the drive periodically (at approximately 200 msec), and display the status repeatedly.

Screen title

Image of cursor move

Display value   x: Off
O: On
Leftmost: Bit 7, rightmost: Bit 0

Category I: Input
O: Output

Number of the block being monitored

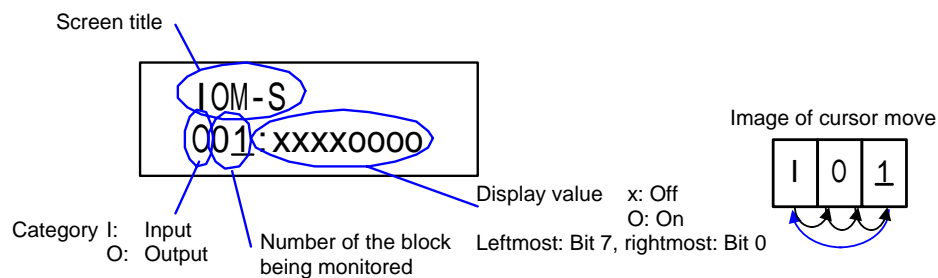| "S":	(Does not function.)
"▲":	Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
	The category changes if this button is pressed when the cursor is on a category.
"▼":	Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
"▶":	The category changes if this button is pressed when the cursor is on a category.
	Moves the cursor on a category or block number to the right.
"M" -LP:	Displays the screen transition screen.

The screen shown above displays the following contents:
   It is monitoring the status of hardware input block 0, bits 0, 2, 3 and 5 are on, and others are off.

A.9.2 Logic (Soft) I/O

The logic (soft) I/O screen is used to obtain the current status of logic I/O with the block number specified from the drive periodically (at approximately 200 msec), and display the status repeatedly.

Screen title

Image of cursor move

Display value   x: Off
O: On
Leftmost: Bit 7, rightmost: Bit 0

Category I: Input
O: Output

Number of the block being monitored

"S":	(Does not function.)
"▲":	Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
	The category changes if this button is pressed when the cursor is on a category.
"▼":	Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
"▶":	The category changes if this button is pressed when the cursor is on a category.
	Moves the cursor on a category or block number to the right.
"M" -LP:	Displays the screen transition screen.

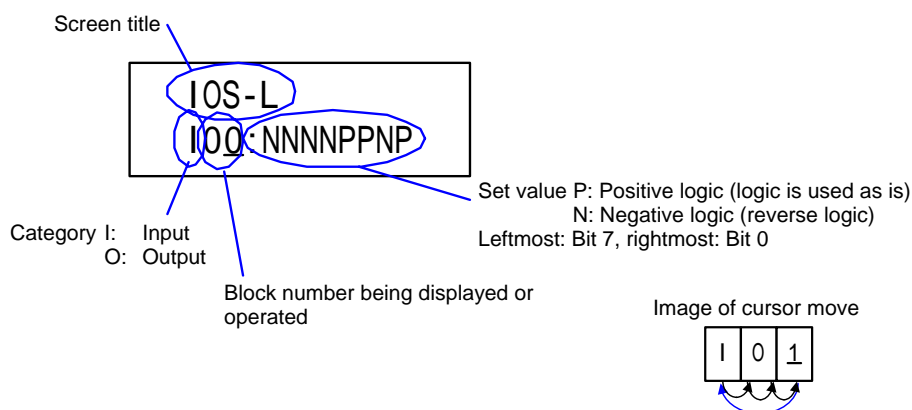The screen shown above displays the following contents:
   It is monitoring the status of software output block 1, bits 0, 1, 2 and 3 are on, and others are off.

A.10 I/O Setup Confirmation Screen

A.10.1 Physical (Hard) I/O Logic Confirmation Screen

The physical (hard) I/O logic confirmation screen is used to verify the logic settings of hard I/O of the drive.

Hard I/O logic setting cannot be performed on the operation display panel. To perform hard I/O logic setting, use utility software and operation display pendant (optional).
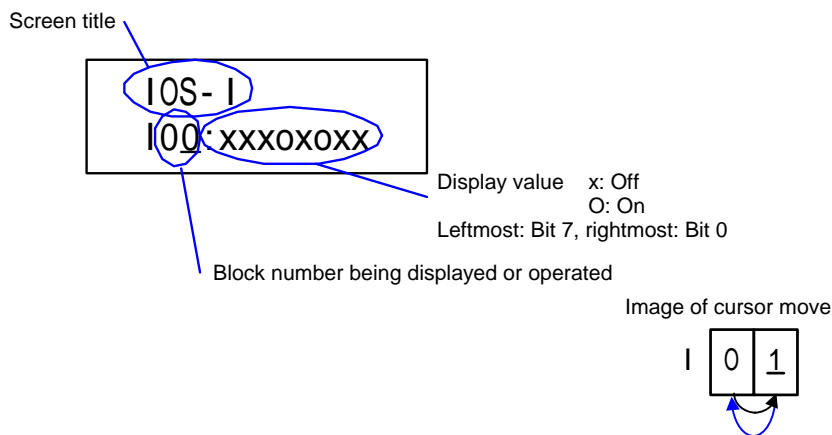
Screen title

I OS-L
I 00 NNNNPPNP

Set value P: Positive logic (logic is used as is)
N: Negative logic (reverse logic)
Leftmost: Bit 7, rightmost: Bit 0

Category I: Input
O: Output

Block number being displayed or operated

Image of cursor move

I O 1

"S":	(Does not function.)
"▲":	Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
	The category or value changes if this button is pressed when the cursor is on a category or value.
"▼":	Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
"▶":	The category or value changes if this button is pressed when the cursor is on a category or value.
	Move the cursor on a category, block number or value to the right.
"M" -LP:	Displays the screen transition screen.

A.10.2 Logic (Soft) I/O Input Initial Value Confirmation Screen

The logic (soft) I/O input initial value confirmation screen is used to verify the initial value settings of the logic I/O of the drive.
Logic I/O input initial value setting cannot be performed on the operation display panel. To perform Logic I/O input initial value setting, use utility software and operation display pendant (optional).

Screen title

I OS- I
I OQ xxxOxOxx

Display value   x: Off
O: On
Leftmost: Bit 7, rightmost: Bit 0

Block number being displayed or operated

Image of cursor move

I O 1

"S":   (Does not function.)
"▲":   Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
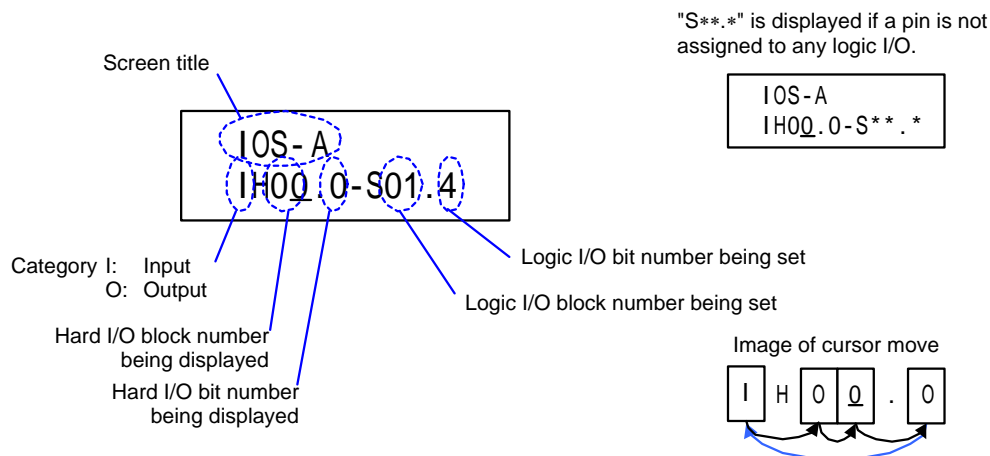   The value changes if this button is pressed when the cursor is on a value.
"▼":   Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a block number.
"►":   The value changes if this button is pressed when the cursor is on a value.
            Moves the cursor on a block number or value to the right.
"M" -LP: Displays the screen transition screen.

A.10.3 Pin Assignment Confirmation Screen

The pin assignment confirmation screen is used to verify the pin assignment settings of the drive.
Pin assignment setting cannot be performed on the operation display panel. To perform pin assignment setting, use utility software and operation display pendant (optional).

"S∗.∗" is displayed if a pin is not assigned to any logic I/O.

Screen title

Category I: Input
O: Output

Hard I/O block number being displayed

Hard I/O bit number being displayed

Logic I/O bit number being set

Logic I/O block number being set

Image of cursor move

"S": (Does not function.)
"▲": Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a hard I/O block number or hard I/O bit number.
The category changes if this button is pressed when the cursor is on a category.
"▼": Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a hard I/O block number or hard I/O bit number.
The category changes if this button is pressed when the cursor is on a category.
"▶": Moves the cursor on a category, hard I/O block or hard I/O bit number to the right.
"M" -LP: Displays the screen transition screen.

The screen shown above displays the following contents:
Bit 0 of hard I/O input block 0 is assigned to bit 4 of Logic I/O input block 1.

A.11 Absolute Encoder Maintenance Screen

The absolute encoder skew value is data that does not require changing by the customer. Do not change this data.

* This screen does not exist for an increment type.
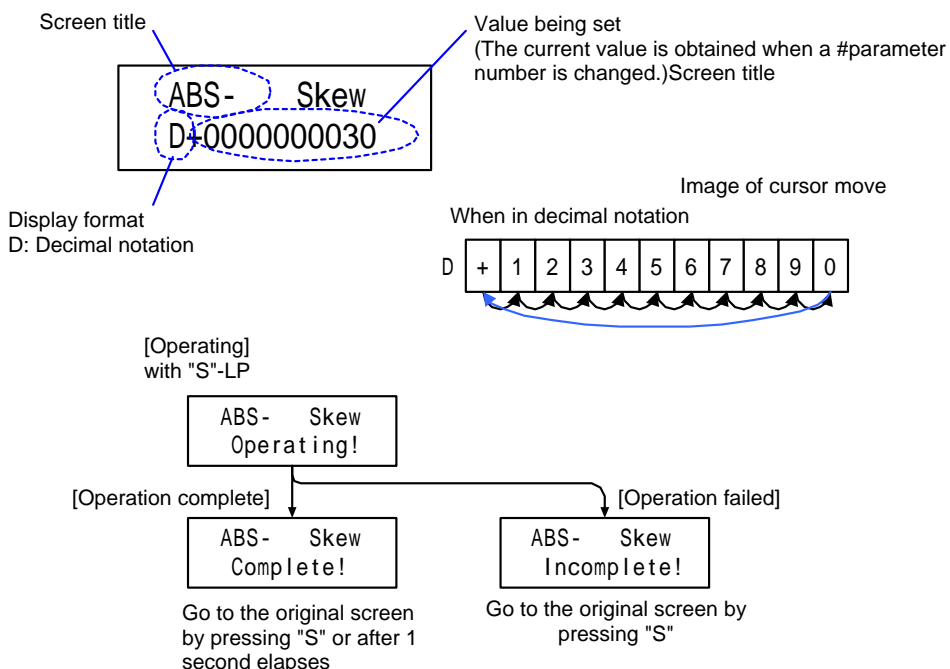
![WARNING icon] WARNING

Do not change the data. Registering wrong data may cause malfunctions such as the motor being unable to move or the position being recognized incorrectly.

The maintenance targets are absolute encoder skew values of an absolute position detector. This screen, when activated, displays the value currently registered in the drive. The value is registered in the drive by keeping the S button pressed for a while.
Setting and registration are allowed only in the setup/registration enabled state.

"S"-LP: Performs registration using the data displayed on the screen.
"▲":   Increases the numeric value pointed by the cursor if this button is pressed when the cursor is on a value.
             Switches the sign if this button is pressed when the cursor in on a sign.
"▼":   Decreases the numeric value pointed by the cursor if this button is pressed when the cursor is on a value.
             Switches the sign if this button is pressed when the cursor in on a sign.
"▶":   Moves the cursor on a #parameter number or value to the right.
"M"-LP: Displays the screen transition screen.

Screen title

Value being set
(The current value is obtained when a #parameter number is changed.)Screen title

```
ABS-    Skew
D+0000000030
```

Display format
D: Decimal notation

Image of cursor move
When in decimal notation

```
D | + | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
```

[Operating]
with "S"-LP

```
ABS-    Skew
  Operating!
```

[Operation complete]

```
ABS-    Skew
  Complete!
```

Go to the original screen by pressing "S" or after 1 second elapses

[Operation failed]

```
ABS-    Skew
  Incomplete!
```

Go to the original screen by pressing "S"

A.12 Version Display Screen

The version display screen displays the design version and model name of the drive.

Screen title

Firmware code

```
Ver.-R7040CA:
M$:  UR5CG3-0
```
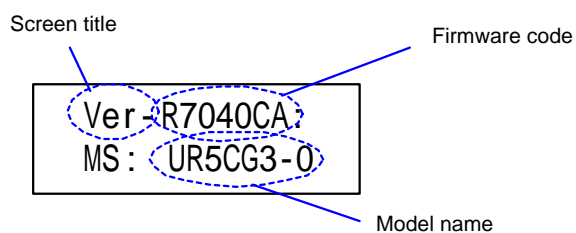
Model name

"S":   (Does not function.)
"▲":   (Does not function.)
"▼":   (Does not function.)
"▶":   Scrolls the firmware code and model name display to the left.
           Returns to the first display if this button is pressed while up to the end is displayed (displaying "∗" at the end).
           "M" -LP: Displays the screen transition screen.

The screen shown above displays the following contents:
    First eight characters of the firmware code: "R7040CA:"
    First eight characters of the model name: "UR5CG3-0"

◆ Revision Record

Document name: Operation Display Panel PC100G3 Function Guide

Document number: TI 71M07B00-01E

October, 2003 1st Edition
        New issuance

May, 2004 2nd Edition

        Formats and wording of the entire manual were modified.
        A-1   Description of ABS was added.
        A-2   The external appearance drawing was updated.
        A-3   Description of ABS was added.
        A-11   The title of (2) "Operation Code Selection Screen" was corrected.
        A-12   Description of INC was corrected.
        A-13   A page for ABS description was added, the page numbers of previous
                   A-13 and onward were changed accordingly.
        A-21   "copy" on the first line was corrected to "delete."
        A-26   A page for "A.11   Absolute Encoder Maintenance Screen" was added.
                   The page numbers and header numbers of previous A-26 and onward
                   were changed accordingly.