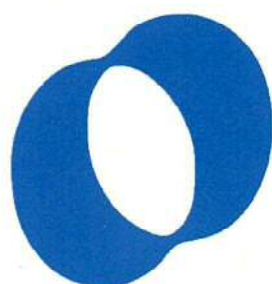


# **PROFESSIONAL 5**

## **OPERATION MANUAL**

**SCREEN EDITION**



# **MAKINO**

# Screens - Contents 1

<b>1. Basic Knowledge</b>	<b>1-1</b>
1.1 Outline .....	1-2
1.1.1 Screen Display Area.....	1-2
1.1.2 Common Information Display Area.....	1-3
1.1.3 Button Area .....	1-4
1.2 Outline of Operation Screens .....	1-5
1.3 Starting Up Controller .....	1-7
1.3.1 Splash Window.....	1-7
1.3.2 Message when Professional 5 is Started Up.....	1-9
1.3.3 Machine Parameter Check Dialog Box.....	1-10
1.4 Shutting Down Controller.....	1-11
1.5 Viewing Info Header .....	1-12
1.5.1 Execution Program Information.....	1-13
1.5.2 Machine Condition Lamps.....	1-14
1.5.3 Selected Screen Information .....	1-15
1.6 Viewing NC Status Bar .....	1-16
1.7 Changing Operation Screen .....	1-19
1.7.1 Using Screen Selection Buttons.....	1-19
1.7.2 Using MDI Keyboard Function Keys .....	1-20
1.8 Screen Operation Buttons .....	1-21
1.8.1 Active/Inactive Status of Screen Operation Buttons .....	1-21
1.8.2 Changing Screen Operation Buttons.....	1-21
1.9 Using Floating Function Buttons.....	1-24

<b>2. Main Screen</b>	<b>2-1</b>
2.1 Outline.....	2-2
2.2 Viewing Feed Axis Coordinates.....	2-3
2.2.1 Absolute Coordinates .....	2-3
2.2.2 Relative Coordinates .....	2-3
2.2.3 Machine Coordinates.....	2-4
2.2.4 All Coordinates .....	2-4
2.2.5 Handle Display .....	2-5
2.3 Viewing Program.....	2-6
2.4 Viewing Machine Information .....	2-7
2.5 Viewing Modal Information.....	2-8
2.6 Presetting Relative Coordinates.....	2-10
2.6.1 Using [Preset] Button.....	2-10
2.6.2 Touching Relative Coordinate Display .....	2-11
2.7 Resetting Relative Coordinates for Each Axis.....	2-12
2.7.1 Using [Origin] Button.....	2-12
2.7.2 Touching Relative Coordinate Display .....	2-13
2.8 Resetting Relative Coordinates for All Axes .....	2-14
2.9 Presetting Work Coordinate System .....	2-15
2.10 List of Screen Operation Buttons .....	2-16
<b>3. Program Edit Screen</b>	<b>3-1</b>
3.1 Outline.....	3-2
3.1.1 Program Edit Screen .....	3-2
3.1.2 Editing Two Programs at Same Time.....	3-7
3.1.3 Program List Screen(Standard Specification) .....	3-10

3.1.4	Program List Screen(File Name 32 Digit Specification).....	3-12
<b>3. 2</b>	<b>Manipulating Folder .....</b>	<b>3-14</b>
3.2.1	Creating New Folder .....	3-14
3.2.2	Delete Folder.....	3-16
3.2.3	Set Current Directory.....	3-17
<b>3. 3</b>	<b>Manipulating Programs in NC Memory</b>	
	(Standard Specification) .....	3-18
3.3.1	Creating New NC Programs.....	3-18
3.3.2	Selecting NC Programs.....	3-21
3.3.3	Changing NC Program Numbers .....	3-24
3.3.4	Deleting NC Programs .....	3-25
<b>3. 4</b>	<b>Manipulating Programs in NC Memory</b>	
	(File Name 32 Digit Specification) .....	3-27
3.4.1	Creating New NC Programs.....	3-27
3.4.2	Selecting NC Programs.....	3-30
3.4.3	Changing NC Program Name .....	3-33
3.4.4	Deleting NC Programs .....	3-34
<b>3. 5</b>	<b>Manipulating Programs Outside NC Memory .....</b>	<b>3-36</b>
3.5.1	Starting Editing of Programs.....	3-36
3.5.2	Ending Editing of Programs.....	3-37
<b>3. 6</b>	<b>Editing Programs .....</b>	<b>3-38</b>
3.6.1	Entering Programs .....	3-38
3.6.2	Moving Cursor.....	3-41
3.6.3	Selecting Program Range .....	3-42
3.6.4	Program Insertion.....	3-43
3.6.5	Changing Program Words.....	3-45
3.6.6	Deleting Data from Programs.....	3-47
3.6.7	Copying Program Data.....	3-51
3.6.8	Cutting Program Data.....	3-52
3.6.9	Pasting Program Data .....	3-53
3.6.10	Program Insertion 2.....	3-56
3.6.11	Restore before Editing.....	3-64
3.6.12	Searching for Words.....	3-65
3.6.13	Program Rewind.....	3-66

3.6.14	Moving to End of Program .....	3-67
3.6.15	Searching for Sequence No.....	3-68
3.6.16	Jumping to Specified Line .....	3-69
3.6.17	Replacing Words in Programs .....	3-70
3.6.18	Copying All Content to New Program .....	3-73
3.6.19	Copying Specified Range to New Program.....	3-75
3.6.20	Moving Specified Range to New Program .....	3-79
<b>3. 7</b>	<b>Using Fixed Programs.....</b>	<b>3-83</b>
3.7.1	Creating fixed Program Groups .....	3-84
3.7.2	Renaming Fixed Program Groups .....	3-85
3.7.3	Deleting Fixed Program Groups .....	3-85
3.7.4	Creating Fixed Programs .....	3-86
3.7.5	Renaming Fixed Programs .....	3-87
3.7.6	Deleting Fixed Programs .....	3-87
3.7.7	Copying Fixed Programs .....	3-88
<b>3. 8</b>	<b>Manipulating Program List Screen .....</b>	<b>3-89</b>
3.8.1	Selecting Folder for Program Table.....	3-89
3.8.2	Selecting Multiple NC Programs .....	3-90
3.8.3	Changing Order on Program List Screen.....	3-92
3.8.4	Displaying Groups According to Comments.....	3-94
<b>3. 9</b>	<b>Using Program Restart.....</b>	<b>3-96</b>
3.9.1	Displaying Program Restart Information .....	3-96
3.9.2	Program Restart .....	3-97
<b>3. 10</b>	<b>Displaying Machine Information .....</b>	<b>3-100</b>
3.10.1	Displaying Current Coordinates .....	3-100
3.10.2	Displaying Modal Information.....	3-101
3.10.3	Displaying Machine Information.....	3-102
<b>3. 11</b>	<b>Making Display Settings.....</b>	<b>3-103</b>
3.11.1	Setting Program Display .....	3-103
3.11.2	Changing Program Text Font Size .....	3-106
3.11.3	Changing Program Table Size .....	3-107
<b>3. 12</b>	<b>Set Screen Setting .....</b>	<b>3-108</b>
3.12.1	Clear Input Line by NC Reset.....	3-108

3.12.2	Display [O Search] Button at Input Key .....	3-108
3.12.3	Search Function by Cursor.....	3-108
<b>3. 13</b>	<b>List of Screen Operation Buttons.....</b>	<b>3-109</b>
3.13.1	Program Edit Screen .....	3-109
3.13.2	Program List Screen.....	3-113

## 4. Makino Data Center Screen 4-1

4. 1	Outline .....	4-2
4.1.1	Function Outline .....	4-2
4.1.2	Screen Outline.....	4-4
4.1.3	Definition of Terms.....	4-5
4. 2	Viewing Folder/File Information .....	4-6
4.2.1	Viewing Folder Tree .....	4-8
4.2.2	Viewing Folder List.....	4-10
4.2.3	Viewing Used Space/Free Space .....	4-12
4.2.4	Relationship of Machine Data Types and File Names .....	4-13
4. 3	Manipulating Folder Tree .....	4-15
4. 4	Changing File List Order.....	4-16
4. 5	Refreshing File/Folder Information .....	4-18
4. 6	Copying & Pasting of Files/Folders.....	4-19
4.6.1	Viewing Paste Dialog Box .....	4-23
4.6.2	Manipulating Paste Dialog Box.....	4-24
4.6.3	Viewing Copy Progress Bar.....	4-25
4. 7	Editing NC Programs .....	4-27
4. 8	Creating New O Numbers .....	4-29
4. 9	Creating New NC Program Files .....	4-30
4. 10	Creating New Folders.....	4-31

4. 11	Changing O Numbers .....	4-32
4. 12	Renaming Files .....	4-34
4. 13	Renaming Folders.....	4-36
4. 14	Deleting O Numbers .....	4-38
4. 15	Deleting Folders/Files .....	4-40
4.15.1	Deleting Folders from Folder Tree .....	4-40
4.15.2	Deleting Folders/Files from File List.....	4-41
4. 16	Changing Attributes of Folders/Files .....	4-43
4. 17	Using M198 to Perform DNC Operation.....	4-45
4.17.1	Function Specifications .....	4-45
4.17.2	Viewing M198 Folder Information .....	4-46
4.17.3	Setting M198 Folder .....	4-47
4.17.4	Releasing M198 Folder.....	4-49
4.17.5	Using M198 Sub Program Call to Perform DNC Operation .....	4-50
4.17.6	Viewing M198 Progress Bar .....	4-52
4. 18	Using DNC Schedule to Perform DNC Operation...	4-53
4.18.1	Viewing DNC Schedule List.....	4-53
4.18.2	Adding Files .....	4-55
4.18.3	Deleting DNC Files .....	4-57
4.18.4	Changing DNC File Order.....	4-58
4.18.5	Setting M00 Insertion .....	4-59
4.18.6	Editing DNC Files .....	4-60
4.18.7	Changing DNC Schedule Start Position.....	4-61
4.18.8	Executing DNC Schedule .....	4-62
4.18.9	Viewing DNC Progress Bar.....	4-64
4.18.10	Changing DNC Schedule List Display Size.....	4-65
4.18.11	Saving DNC Schedule in File.....	4-66
4.18.12	Reading DNC Schedule File .....	4-68
4. 19	Connection with Host Computer .....	4-69
4.19.1	Making Connection .....	4-69

4.19.2	Host Computer Settings .....	4-72
4.19.3	Ethernet Settings .....	4-74
4.19.4	Host Computer Side Share Folder Settings .....	4-82
4.19.5	Precautions on Direct Connection .....	4-83
<b>4. 20</b>	<b>Selecting Multiple Files/Folders .....</b>	<b>4-85</b>
4.20.1	Selection from File List .....	4-85
4.20.2	Using Keyboard .....	4-86
4.20.3	Select All Screen Operation Button .....	4-87
<b>4. 21</b>	<b>Changing Settings .....</b>	<b>4-88</b>
4.21.1	Changing Operation Settings .....	4-88
4.21.2	Changing Data File Settings .....	4-89
4.21.3	Changing View Settings .....	4-90
4.21.4	Changing Copy Settings .....	4-92
4.21.5	Changing M198 Settings .....	4-94
4.21.6	Changing DNC Settings .....	4-96
4.21.7	Changing Maintenance Settings .....	4-97
<b>4. 22</b>	<b>List of Screen Operation Buttons .....</b>	<b>4-98</b>
<b>5.</b>	<b>Tool Offset Screen</b>	<b>5-1</b>
<b>5. 1</b>	<b>Outline .....</b>	<b>5-2</b>
<b>5. 2</b>	<b>Confirming Tool Offset Values .....</b>	<b>5-3</b>
5.2.1	Tool Offset Memory A .....	5-3
5.2.2	Tool Offset Memory B .....	5-3
5.2.3	Tool Offset Memory C .....	5-4
5.2.4	Changing Pages .....	5-4
<b>5. 3</b>	<b>Confirming Machine Information .....</b>	<b>5-5</b>
5.3.1	Viewing Feed Axis Coordinates .....	5-6
5.3.2	Viewing Programs .....	5-7
5.3.3	Viewing G Code Status .....	5-8
5.3.4	Viewing Modal Information .....	5-9
5.3.5	Viewing Machine Information .....	5-10

<b>5. 4</b>	<b>Searching for Tool Offset Numbers .....</b>	<b>5-11</b>
5.4.1	Entering Tool Offset Number in Search Dialog Box .....	5-11
5.4.2	Directly Entering Tool Offset Number in Input Area .....	5-12
<b>5. 5</b>	<b>Setting Tool Offset Values .....</b>	<b>5-13</b>
5.5.1	Changing to Input Mode.....	5-13
5.5.2	Using Entered Value as Setting .....	5-14
5.5.3	Adding Entered Value to Existing Tool Offset.....	5-15
5.5.4	Entering Feed Axis Relative Coordinate Values.....	5-20
5.5.5	Deleting Tool Offset Values .....	5-23
<b>5. 6</b>	<b>Calculation Function.....</b>	<b>5-26</b>
<b>5. 7</b>	<b>Preset Function .....</b>	<b>5-27</b>
<b>5. 8</b>	<b>Indexing Specified Pot Tool to Spindle .....</b>	<b>5-28</b>
<b>5. 9</b>	<b>Screen Display Settings .....</b>	<b>5-30</b>
<b>5. 10</b>	<b>List of Screen Operation Buttons .....</b>	<b>5-32</b>
<b>6.</b>	<b>Work Offset Screen</b>	<b>6-1</b>
6. 1	Outline.....	6-2
6. 2	Confirming Work Zero Point Offset Values.....	6-3
6. 3	Confirming Machine Information .....	6-4
6.3.1	Viewing Feed Axis Coordinates .....	6-5
6.3.2	Viewing Programs.....	6-6
6.3.3	Viewing G Code Status .....	6-7
6.3.4	Viewing Modal Information.....	6-8
6.3.5	Viewing Machine Information .....	6-9
<b>6. 4</b>	<b>Searching for Work Coordinate System .....</b>	<b>6-10</b>
6.4.1	Using Search Dialog Box .....	6-10
6.4.2	Directly Entering Search Conditions in Input Area .....	6-11

6.5	Setting Work Zero Point Offset Values .....	6-12
6.5.1	Changing to Input Mode .....	6-12
6.5.2	Using Entered Value as Setting .....	6-13
6.5.3	Adding Entered Value to Existing Work Zero Point Offset .....	6-14
6.5.4	Using Machine Position as Setting .....	6-19
6.5.5	Using Machine Position and Tool Offset Value as Setting .....	6-25
6.6	Calculation Function .....	6-31
6.7	Screen Display Settings .....	6-32
6.8	List of Screen Operation Buttons.....	6-34
<b>7.</b>	<b>Tool Data Screen</b>	<b>7-1</b>
7.1	Outline .....	7-2
7.2	Display Content .....	7-4
7.2.1	Text Color .....	7-4
7.2.2	Background Color.....	7-4
7.2.3	Display Items.....	7-4
7.3	Selecting ATC Magazine to be Displayed .....	7-19
7.4	Entering Data.....	7-20
7.5	Expand/Fold Multiple Cutters.....	7-21
7.5.1	[Expand All Cutter] Screen Operation Button .....	7-21
7.5.2	Expand Cutter in Tool Data Display Area.....	7-21
7.5.3	[Fold Cutter] Screen Operation Button .....	7-22
7.5.4	Fold Cutter in Tool Data Display Area.....	7-22
7.6	Resetting Alarms/Warnings .....	7-23
7.7	Searching for Tools .....	7-25

7. 8	Changing Order.....	7-26
7. 9	Displaying Specified Tools.....	7-28
7. 10	Copying Tool Data.....	7-30
7. 11	Moving Tool Data .....	7-32
7. 12	Deleting Tool Data.....	7-34
7. 13	Adjusting Data Display Area Split Position.....	7-35
7.13.1	Moving Split Position.....	7-35
7.13.2	Automatically Adjusting Split Position .....	7-35
7. 14	Automatically Adjusting Header Width .....	7-37
7. 15	Setting Display Items .....	7-38
7.15.1	Add Items to Display.....	7-39
7.15.2	Deleting Items from Display .....	7-40
7.15.3	Changing Item Display Order.....	7-41
7. 16	Setting Direction of Cursor Movement After Input... 7-42	
7. 17	Changing Font Size in Data Display Area .....	7-43
7. 18	Indexing Specified Pot Tool to Spindle .....	7-44
7. 19	List of Screen Operation Buttons .....	7-46
<b>8.</b>	<b>Tool Monitor Screen</b>	<b>8-1</b>
8. 1	Outline.....	8-2
8. 2	Machine Condition Display Content.....	8-5
8. 3	Spindle Tool Data Display Content.....	8-6
8.3.1	Tool Life .....	8-6

8.3.2	SL Upper Value .....	8-7
8.3.3	SL Lower Value .....	8-7
8.3.4	AC (Option) .....	8-8
8.3.5	Study Coefficient .....	8-8
<b>8. 4</b>	<b>Turning TL Mode On/Off .....</b>	<b>8-9</b>
8.4.1	TL Mode ON.....	8-9
8.4.2	TL Mode OFF .....	8-9
<b>8. 5</b>	<b>Turning SL Upper Mode On/Off .....</b>	<b>8-10</b>
8.5.1	SL Upper Mode ON.....	8-10
8.5.2	SL Upper Mode OFF .....	8-10
<b>8. 6</b>	<b>Turning SL Lower Mode On/Off .....</b>	<b>8-11</b>
8.6.1	SL Lower Mode ON.....	8-11
8.6.2	SL Lower Mode OFF .....	8-11
<b>8. 7</b>	<b>Turning AC Mode On/Off .....</b>	<b>8-12</b>
8.7.1	AC Mode ON.....	8-12
8.7.2	AC Mode OFF .....	8-12
<b>8. 8</b>	<b>Turning Study Mode On/Off .....</b>	<b>8-13</b>
8.8.1	Study Mode ON.....	8-13
8.8.2	Study Mode OFF .....	8-13
<b>8. 9</b>	<b>Spindle Load Graph Display Content .....</b>	<b>8-14</b>
<b>8. 10</b>	<b>Feed Axis Load Graph Display Content .....</b>	<b>8-15</b>
<b>8. 11</b>	<b>Display for Tool Monitor Alarms .....</b>	<b>8-16</b>
8.11.1	SL or AC Alarms .....	8-16
8.11.2	TL or BTS Alarms .....	8-16
<b>8. 12</b>	<b>Displaying Past Alarm Status.....</b>	<b>8-17</b>
<b>8. 13</b>	<b>Displaying Spindle Monitor Screen (Only MAG3/MAG3EX) .....</b>	<b>8-18</b>
<b>8. 14</b>	<b>Spindle Monitoring Data (Only MAG3/MAG3EX) ...</b>	<b>8-19</b>

8.14.1	Temperature data.....	8-19
8.14.2	Vibration data.....	8-19
<b>8.15</b>	<b>Temperature and Vibration Graph</b>	
	(Only MAG3/MAG3EX).....	8-20
8.15.1	Setting Bearing Temperature Graph .....	8-20
<b>8.16</b>	<b>List of Screen Operation Buttons .....</b>	<b>8-22</b>

## **9. Function Screen 9-1**

9.1	Outline.....	9-2
9.2	Turning Functions On/Off.....	9-3
9.2.1	Turning Functions On .....	9-3
9.2.2	Turning Functions Off .....	9-3
9.3	Changing Pages.....	9-4
9.3.1	Changing to Previous Page .....	9-4
9.3.2	Changing to Next Page.....	9-4
9.4	Function Display Settings.....	9-5
9.4.1	Changing Function Display Order.....	9-6
9.4.2	Setting Function Display/Non-Display Setting.....	9-6
9.4.3	Setting Enable/Disable for On/Off Buttons.....	9-7
9.5	List of Screen Operation Buttons .....	9-8
9.5.1	Function List Operation Buttons.....	9-8
9.5.2	Display Setting Operation Buttons .....	9-8

## **10. Product Counter Screen 10-1**

10.1	Outline.....	10-2
10.1.1	Product Counter Screen .....	10-2
10.1.2	Run Time Screen .....	10-3
10.1.3	Service Counter Screen.....	10-4

<b>10. 2</b>	<b>Viewing Product Counters .....</b>	<b>10-5</b>
10.2.1	Product Counter Display Procedure .....	10-5
10.2.2	Details of Display Content .....	10-5
<b>10. 3</b>	<b>Setting Product Counter Functions.....</b>	<b>10-7</b>
10.3.1	Property Setting Dialog Box .....	10-7
10.3.2	Assigning Name .....	10-9
10.3.3	Setting Counter Value.....	10-9
10.3.4	Setting Count Conditions.....	10-10
10.3.5	Setting Target Value .....	10-12
10.3.6	Setting Operation when Target Value is Reached .....	10-13
10.3.7	Enabling/Disabling Counters .....	10-13
<b>10. 4</b>	<b>Resetting Product Counters .....</b>	<b>10-14</b>
<b>10. 5</b>	<b>Changing Product Counter Screen Display .....</b>	<b>10-15</b>
10.5.1	Screen Setting Dialog Box.....	10-15
10.5.2	Changing Text Font Size .....	10-16
10.5.3	Changing Counter Display Method.....	10-16
<b>10. 6</b>	<b>Manipulating Run Time Counters .....</b>	<b>10-17</b>
10.6.1	Displaying Run Time Counters .....	10-17
10.6.2	Resetting Run Time Counters .....	10-17
<b>10. 7</b>	<b>Manipulating Service Counters.....</b>	<b>10-19</b>
10.7.1	Displaying Service Counters .....	10-19
10.7.2	Saving Service Counter Record in File.....	10-19
<b>10. 8</b>	<b>Viewing NC Information.....</b>	<b>10-21</b>
10.8.1	Viewing Feed Axis Coordinates .....	10-22
10.8.2	Viewing Programs .....	10-23
10.8.3	Viewing G Code Status.....	10-23
10.8.4	Viewing Modal Information .....	10-24
10.8.5	Viewing Machine Information .....	10-25
<b>10. 9</b>	<b>List of Screen Operation Buttons.....</b>	<b>10-26</b>

---

<b>11. Setting Screen</b>	<b>11-1</b>
11.1 Outline.....	11-2
11.2 Confirming Parameter Settings.....	11-4
11.3 Changing Parameter Settings.....	11-6
11.3.1 Changing Parameter Settings.....	11-6
11.3.2 Undoing Parameter Changes.....	11-7
11.4 List of Screen Operation Buttons.....	11-8
<b>12. Alarm Screen</b>	<b>12-1</b>
12.1 Outline.....	12-2
12.1.1 Alarm List Screen.....	12-2
12.1.2 Alarm Details Screen.....	12-3
12.2 Viewing Alarm History.....	12-4
12.3 Confirming Alarm Details.....	12-5
12.3.1 Displaying Alarm Details Screen.....	12-5
12.3.2 Checking Alarm Details.....	12-6
12.3.3 Changing Alarm Information Display Settings.....	12-10
12.3.4 Changing Displayed Alarm Data.....	12-12
12.3.5 Displaying Alarm List Screen.....	12-13
12.4 Resetting Alarms.....	12-14
12.4.1 Alarm Reset from Alarm List Screen.....	12-14
12.4.2 Alarm Reset from Alarm Details Screen.....	12-14
12.5 Retrying Alarm Operation.....	12-15
12.5.1 Retry Operation from Alarm List Screen.....	12-15
12.5.2 Retry Operation from Alarm Details Screen.....	12-15
12.6 Checking Alarm Filter.....	12-17
12.7 List of Screen Operation Buttons.....	12-19

12.7.1	Alarm List Screen .....	12-19
12.7.2	Alarm Details Screen.....	12-20

## 13. Machine Condition Screen 13-1

13.1	Outline .....	13-2
13.2	Confirming Cause of Abnormal Condition .....	13-3
13.3	Confirming Machine Condition .....	13-5
13.3.1	Confirming Selected Spindle Range.....	13-5
13.3.2	Confirming ATC Arm Standby Status .....	13-5
13.3.3	Confirming ATC Magazine Manual Intervention Status.....	13-5
13.3.4	Confirming Table Pallet Number .....	13-6
13.3.5	Confirming APC Arm Standby Status.....	13-6
13.3.6	Confirming APC Manual Intervention Status.....	13-6
13.4	Confirming Auto Grease Lubrication Status.....	13-7
13.4.1	Confirming Condition .....	13-8
13.4.2	Changing Grease Cartridge Count Setting .....	13-9
13.4.3	Confirming Auto Grease Pump Operation .....	13-11
13.5	Confirming Marposs Signal Condition .....	13-12
13.6	Confirming Optical Renishaw Signal Condition ....	13-14
13.7	List of Screen Operation Buttons.....	13-16
13.7.1	Machine Condition Display Screen Buttons .....	13-16
13.7.2	Grease Lubrication Screen Buttons.....	13-16
13.7.3	Marposs Condition Screen Button.....	13-16
13.7.4	Optical Renishaw Condition Screen Button.....	13-1

## 14. Input/Output Screen 14-1

14.1	Outline .....	14-2
------	---------------	------

14. 2	Display Content.....	14-4
14. 3	Searching for Signals with Address.....	14-6
14. 4	Searching for Signals with Signal Name .....	14-7
14. 5	Changing Display Mode .....	14-8
14.5.1	Selecting One Screen Display.....	14-8
14.5.2	Selecting Two Screen Display .....	14-8
14.5.3	Displaying Signal Content.....	14-8
14. 6	Converting Address Data to Value .....	14-9
14. 7	List of Screen Operation Buttons .....	14-11
15.	Maintenance Screen	15-1
16.	Macro Variable Screen	16-1
16. 1	Outline.....	16-2
16. 2	Confirming Custom Macro Variable Values.....	16-4
16.2.1	Selecting Displayed Custom Macro Variables .....	16-5
16.2.2	Changing Between One Screen/Two Screen Display.....	16-6
16. 3	Confirming Machine Information .....	16-7
16.3.1	Viewing Feed Axis Coordinates .....	16-8
16.3.2	Viewing Programs.....	16-9
16.3.3	Viewing G Code Status .....	16-10
16.3.4	Viewing Modal Information.....	16-10
16.3.5	Viewing Machine Information.....	16-11
16. 4	Searching for Custom Macro Variables.....	16-12
16.4.1	Using Search Dialog Box.....	16-12
16.4.2	Directly Entering Search Conditions in Input Area .....	16-13

16.5	Setting Custom Macro Variable Values .....	16-14
16.5.1	Changing to Input Mode .....	16-14
16.5.2	Setting Entered Values .....	16-14
16.5.3	Setting to <Blank> .....	16-16
16.5.4	Retrieving and Setting Axis Coordinate Values .....	16-16
16.6	Using User Setting List .....	16-22
16.6.1	Displaying User Setting List .....	16-22
16.6.2	Registering Arbitrary Macro Variable to User Setting List .....	16-23
16.6.3	Writing User Setting List Content to File .....	16-28
16.6.4	Reading User Setting List Content from File .....	16-29
16.7	Screen Display Settings .....	16-31
16.8	List of Screen Operation Buttons .....	16-34
17.	Machining Result Screen	17-1
17.1	Outline .....	17-2
17.1.1	List Display Screen .....	17-2
17.1.2	Graph Display Screen .....	17-3
17.2	Changing Screen Display .....	17-4
17.3	Viewing List of Machining Result Data .....	17-5
17.3.1	Display Items .....	17-5
17.4	Checking Machining Time Ratio .....	17-6
17.4.1	Display Items .....	17-6
17.5	Changing Order of Data .....	17-8
17.6	Checking Machining Result Data Filter .....	17-9
17.7	Machining Result List Settings .....	17-13
17.7.1	Setting Hide/Show for Display Items .....	17-13
17.7.2	Changing Item Display Order .....	17-14
17.7.3	Changing Font Size .....	17-15

---

## 17.8 List of Screen Operation Buttons ..... 17-16

# 18. Regular Maintenance Screen 18-1

## 18.1 Outline..... 18-2

18.1.1 Regular Maintenance Item List Screen ..... 18-2

18.1.2 User Setting Screen..... 18-3

## 18.2 Displaying List of Maintenance Items..... 18-5

18.2.1 Outline of Maintenance Item List ..... 18-5

18.2.2 Displaying Maintenance Items ..... 18-5

18.2.3 Changing Maintenance Item List Order ..... 18-6

## 18.3 Recording Completion of Maintenance ..... 18-7

18.3.1 When All Maintenance Items Have Been Completed ..... 18-7

18.3.2 When Part of Maintenance Items Have Been Completed..... 18-7

18.3.3 Selecting Multiple Items ..... 18-8

## 18.4 Displaying Regular Maintenance Log ..... 18-9

## 18.5 Setting User Maintenance Items ..... 18-10

18.5.1 Clearing User Setting Items ..... 18-12

18.5.2 Resetting Previous Maintenance Date..... 18-12

## 18.6 List of Screen Operation Buttons ..... 18-13

18.6.1 Maintenance Item List Operation Buttons..... 18-13

18.6.2 User Set Maintenance Item Operation Buttons..... 18-14

# 19. Parameter Screen 19-1

## 19.1 Outline..... 19-2

19.1.1 Parameter List Screen ..... 19-2

19.1.2 Parameter Check Screen..... 19-3

19.2	Confirming Parameter Settings .....	19-5
19.2.1	Confirming Parameter Settings .....	19-5
19.2.2	Filtering Parameter List Display.....	19-7
19.3	Displaying Parameters in Control Units.....	19-8
19.4	Changing Parameter Settings .....	19-10
19.4.1	Releasing Password Lock .....	19-10
19.4.2	Changing Parameter Settings .....	19-11
19.5	Using Function Number Help .....	19-13
19.6	Checking Difference with Original Parameter.....	19-14
19.6.1	Displaying Parameter Check Screen.....	19-14
19.6.2	Confirming Parameter Check Content.....	19-15
19.6.3	Displaying Parameter List Screen .....	19-17
19.7	Changing Setting for Different Parameters.....	19-18
19.8	Saving Original Parameters.....	19-19
19.9	Returning to Original Value.....	19-20
19.9.1	Returning Selected Parameter to Original Value .....	19-20
19.9.2	Returning All Parameters to Original Values.....	19-21
19.10	List of Screen Operation Buttons .....	19-23
19.10.1	Parameter List Screen.....	19-23
19.10.2	Parameter Check Screen .....	19-24
20.	Work Data Screen	20-1
20.1	Outline .....	20-2
20.2	Display Content .....	20-4
20.2.1	Text Color .....	20-4
20.2.2	Background Color.....	20-4
20.2.3	Display Items.....	20-4

---

20.3	Setting Ready On/Off Status .....	20-12
20.4	Setting Suspend On/Off Status.....	20-13
20.4.1	Cancelling Suspend Status for All Work Data .....	20-13
20.5	Setting Express On/Off Status.....	20-15
20.6	Entering Data .....	20-16
20.7	Resetting Alarms .....	20-17
20.8	Displaying Only Specified Pallets.....	20-19
20.9	Searching for Pallet(s).....	20-21
20.10	Changing Order .....	20-22
20.11	Selecting Type of Pallet to be Displayed.....	20-24
20.12	Expand/Fold Faces for Multiple Face Pallets.....	20-25
20.12.1	[Expand All Pallet] Screen Operation Button.....	20-25
20.12.2	Expanding Faces in Work Data Display Area.....	20-25
20.12.3	[Fold All Pallet] Screen Operation Button.....	20-26
20.12.4	Folding Faces in Work Data Display Area.....	20-26
20.13	Copying Work Data.....	20-27
20.14	Moving Work Data .....	20-29
20.15	Exchanging Work Data .....	20-31
20.16	Deleting Work Data.....	20-33
20.17	Adjusting Data Display Area Split Position.....	20-34
20.17.1	Moving Split Position.....	20-34
20.17.2	Automatically Adjusting Split Position .....	20-34
20.18	Automatically Adjusting Header Width .....	20-36

<b>20.19</b>	<b>Setting Display Items .....</b>	<b>20-37</b>
20.19.1	Adding Items to Display.....	20-38
20.19.2	Deleting Items from Display.....	20-39
20.19.3	Changing Item Display Order .....	20-40
<b>20.20</b>	<b>Display Face Released at Startup .....</b>	<b>20-41</b>
<b>20.21</b>	<b>Setting Direction of Cursor Movement After Input</b>	<b>20-42</b>
<b>20.22</b>	<b>Changing Font Size in Data Display Area .....</b>	<b>20-43</b>
<b>20.23</b>	<b>List of Screen Operation Buttons .....</b>	<b>20-44</b>
20.23.1	List of Screen Buttons .....	20-46
<b>21.</b>	<b>Help Screen</b>	<b>21-1</b>
21. 1	Outline .....	21-2
21. 2	Displaying M Code Details .....	21-4
21. 3	Displaying Version .....	21-5
21.3.1	Version Installed .....	21-5
21.3.2	Applicable Models for Software Installed .....	21-6
21.3.3	Language(s) Installed .....	21-6
21.3.4	List of Installed Files .....	21-6
21.3.5	Applying Mask to Installed File List .....	21-7
21. 4	List of Screen Operation Buttons.....	21-8
21.4.1	M Code Table Screen Operation Buttons .....	21-8
21.4.2	Version Screen Operation Buttons .....	21-8
<b>22.</b>	<b>Screen Customization</b>	<b>22-1</b>
22. 1	Outline .....	22-2
22. 2	Setting Screen Select Button Arrangement .....	22-4
22.2.1	Allocating Screen Select Buttons to Screen .....	22-5
22.2.2	Deleting Screen Select Buttons from Screen .....	22-7

---

22.2.3	Returning to Initial Settings .....	22-8
22.2.4	Deleting All Allocated Screens .....	22-8
22.2.5	Setting Operation Screen at Start Up.....	22-8
22.2.6	Setting Display of Last Operation Screen at Start Up .....	22-9
<b>22.3</b>	<b>Setting Floating Function Buttons .....</b>	<b>22-10</b>
22.3.1	Deleting Allocated Floating Function Buttons.....	22-12
22.3.2	Allocating Flexible Switches.....	22-12
22.3.3	Allocating One-Shot Functions .....	22-12
22.3.4	Allocating Execution Files .....	22-13
<b>22.4</b>	<b>Setting Keyboard .....</b>	<b>22-15</b>
22.4.1	Setting Keyboard .....	22-15
22.4.2	Setting Screen Displayed when Function Key is Pressed.....	22-16
22.4.3	Setting CNC Function Screen Displayed by Function Key.....	22-18
22.4.4	Deactivating Operation Screen Changes by Function Keys .....	22-19
<b>22.5</b>	<b>Setting Display Font.....</b>	<b>22-20</b>