

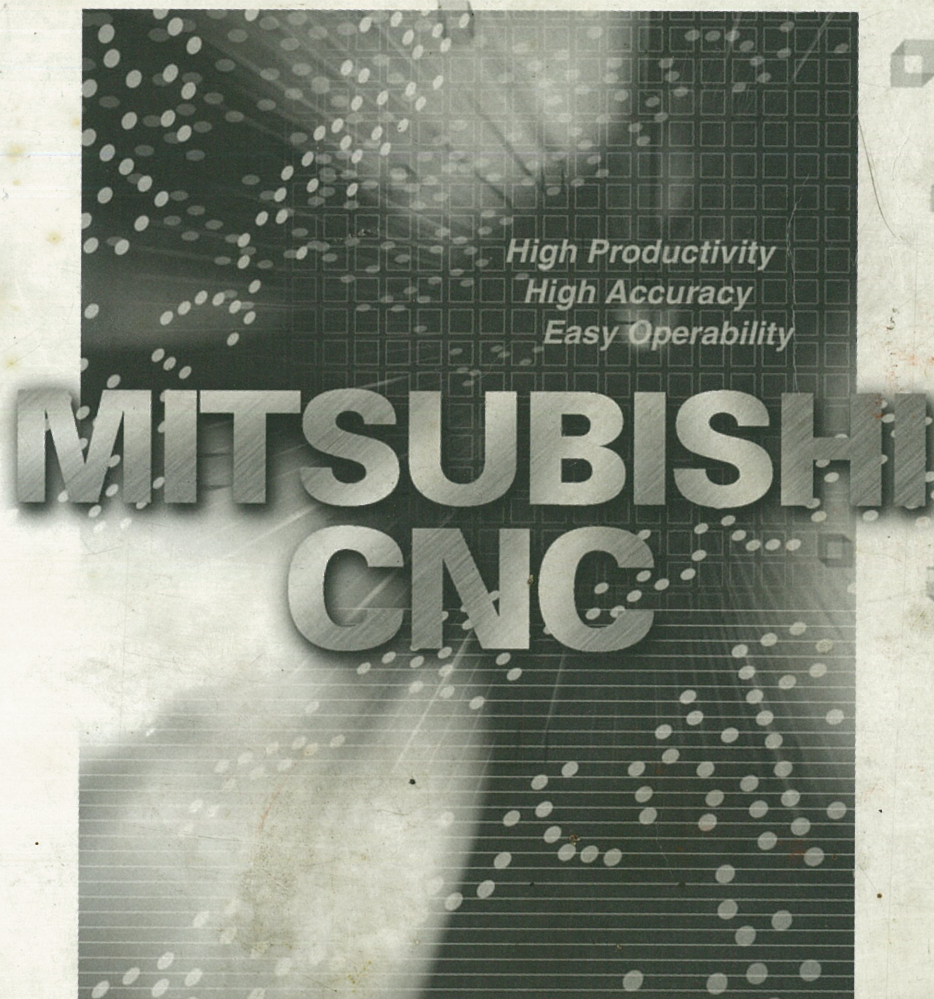


Changes for the Better

MITSUBISHI CNC

70 Series

Setup Manual



CONTENTS

1 Setup Outline	1
1.1 Device Configuration	2
1.2 Hardware Configuration	3
1.3 Flow of Initial Setup	4
2 Connecting and Setting the Hardware	5
2.1 Connecting the Drive Unit and Setting its Rotary Switch/ DIP Switch	6
2.1.1 Connecting the Drive Unit	6
2.1.2 Setting the MDS-D/DH Series Rotary Switch and DIP Switch	7
2.1.3 Setting the MDS-D-SVJ3/SPJ3 Series Rotary Switch	8
2.2 Connecting the Batteries	9
2.2.1 Connecting a Battery to the Control Unit	9
2.2.2 Connecting a Battery to the Servo/Spindle Drive Unit	9
2.3 Connecting and Setting the Remote I/O Unit	11
2.4 Initializing the NC Internal Data (SRAM)	13
3 Setting Up with M70 SETUP INSTALLER	15
3.1 Compatible Data and Folder Configuration in the Compact Flash Card	16
3.2 Operation Procedure	18
3.2.1 Starting Up M70 SETUP INSTALLER	18
3.2.2 Installing Language Data	18
3.2.3 Installing Custom Data	20
3.2.4 Uninstalling Custom Data	21
3.2.5 Installing Custom Startup Screen	22
3.2.6 Uninstalling Custom Startup Screen	23
3.3 List of Error Messages	24
4 Setting Parameters and Date/Time	25
4.1 Selecting the NC System Type	26
4.2 Setting on the System Setup Screen	27
4.3 Setting the Parameters for the Machine Specifications	31
4.4 Setting Date and Time	33
5 PLC Program Writing	35
5.1 Connecting the Control Unit and a Personal Computer	36
5.2 Setting the Ethernet Communication	36
5.3 Setting the Communication with GX Developer	38
5.4 Setting the Parameters on GX Developer	40
5.5 Writing a PLC Program with GX Developer	42
5.6 Writing a PLC Program to ROM with GX Developer	43
5.7 Setting PLC Parameters	45

6	Confirming the Basic Operation	47
6.1	Checking Inputs/Outputs and Alarms	48
6.2	Confirming the manual operation	49
6.2.1	Using the Manual Pulse Generator	49
6.2.2	Using the JOG Feed	49
6.2.3	First Measure Against Vibration	50
7	Setting the Position Detection System	51
7.1	Marked Point Alignment Method II	52
8	Setting the Stored Stroke Limit	55
8.1	Outline	56
8.2	Detailed Explanation.....	58
8.2.1	Stored Stroke Limit I.....	59
8.2.2	Stored Stroke Limit II.....	60
8.2.3	Stored Stroke Limit IB	62
8.2.4	Stored Stroke Limit IC	63
8.2.5	Movable Range during Inclined Axis Control	64
8.2.6	Stored Stroke Limit for Rotation Axis	65
8.2.7	Precautions	65
9	Confirming the Spindle Operation	67
9.1	In Manual Operation (with Manual Numerical Command).....	68
9.2	In MDI Operation	69
9.3	Confirming the Rotation Speed	69
10	Setting the Deceleration Check	71
10.1	Functions of Deceleration Check.....	72
10.2	Deceleration Check Method	73
10.3	Deceleration Check When Opposite Direction Movement is Reserved	75
10.4	Parameters	76
10.5	Precautions.....	78
11	Data Backup and Restoration	79
11.1	Data Backup	80
11.2	Data Restoration.....	83
12	Hardware Replacement Methods	85
12.1	Durable Parts.....	86
12.1.1	Control Unit Battery	86
12.1.2	Backlight.....	88
12.2	Unit	90

12.2.1 Control Unit	90
12.2.2 Display Unit	92
12.2.3 Keyboard Unit	93
12.2.4 DX Unit	95
12.3 Compact Flash	96
12.3.1 Front Compact Flash	96

13 Cable 97

Appendix1 Explanation of Parameters A - 1

1.1 Outline	A - 2
1.1.1 Screen Transition Chart	A - 2
1.1.2 Unit	A - 2
1.2 User Parameters	A - 3
1.2.1 Process Parameters	A - 3
1.2.2 Control Parameters	A - 16
1.2.3 Axis Parameters	A - 20
1.2.4 Operation Parameters	A - 23
1.2.5 Barrier Data (For L system only)	A - 28
1.2.6 I/O Parameters	A - 31
1.2.7 Ethernet Parameters	A - 50
1.2.8 Computer Link Parameters	A - 57
1.2.9 Subprogram Storage Destination Parameters	A - 60
1.2.10 Anshin-net Parameter 1	A - 64
1.2.11 Machine Tool Builder Network System (MTB-net) Parameter 1	A - 65
1.3 Setting the Machine Parameters	A - 66
1.4 Base Specifications Parameters	A - 67
1.5 Axis Specifications Parameters	A - 124
1.5.1 Axis Specifications Parameters	A - 124
1.5.2 Zero Point Return Parameters	A - 130
1.5.3 Absolute Position Parameters	A - 135
1.5.4 Axis Specifications Parameters 2	A - 137
1.6 Servo Parameters	A - 149
1.6.1 Details for servo parameters	A - 149
1.6.2 List of standard parameters for each servomotor	A - 167
1.6.3 Supplement	A - 175
1.6.3.1 D/A Output No.	A - 175
1.6.3.2 Electronic Gears	A - 181
1.6.3.3 Lost Motion Compensation	A - 182
1.7 Spindle Parameters	A - 183
1.7.1 Spindle Base Specifications Parameters	A - 183
1.7.2 Spindle Parameters	A - 199
1.7.3 Supplement	A - 222
1.7.3.1 D/A Output Numbers	A - 222
1.8 Rotary Axis Configuration Parameters	A - 230
1.9 Machine Error Compensation	A - 236
1.9.1 Function Outline	A - 236
1.9.2 Setting Compensation Data	A - 240
1.9.3 Example in Using a Linear Axis as the Base Axis	A - 242
1.9.4 Example in Using a Rotary Axis as the Base Axis	A - 246

2.2.18 Anshin-net-related Operation Messages	A - 391
2.2.19 Messages Related to Machine Tool Builder Network System	A - 396
2.2.20 Other Operation Messages	A - 398
2.3 Program Error	A - 399
2.4 Troubleshooting	A - 419
2.4.1 Drive System Troubleshooting	A - 419
2.4.1.1 Troubleshooting at Power ON	A - 419
2.4.1.2 Troubleshooting for each alarm No.	A - 420
2.4.1.3 Troubleshooting for each warning No.....	A - 445
2.4.1.4 Parameter numbers during initial parameter error.....	A - 447
2.4.1.5 Troubleshooting the spindle system when there is no alarm or warning	A - 448