

# **Cincom A20**

**(2F7PL)**

## **Maintenance Manual**

**CITIZEN MACHINERY CO., LTD.**

# Maintenance Manual

## 0. Table of Contents

This contents does not go into details.

Please refer to the table of contents for detailed headline listed on the top of each chapter.

0. Table of Contents .....	0-1
1. Outline .....	1-1
1.1 Outline of This Manual .....	1-3
1.2 Target Reader .....	1-4
2. Safety Precautions .....	2-1
2.1 Safety Signs .....	2-3
2.2 Emergency Stop Button .....	2-7
2.3 Safety Devices .....	2-8
2.4 Specifications for Safe Operation .....	2-13
2.5 General Precautions During Operation .....	2-14
2.6 Safety During Installing the Machine .....	2-15
2.7 Before Starting the Machine .....	2-16
2.8 Safety During Setup .....	2-17
2.9 Safety During Automatic Operation .....	2-18
2.10 Safety During Maintenance .....	2-19
2.11 Safety After Everyday Operation .....	2-19
2.12 Fire Prevention Practices .....	2-20
2.13 Handling Emergency Situations .....	2-22
2.13.1 Machine operation at occurrence of an accident .....	2-22
2.13.2 Emergency situations requiring evacuation .....	2-22
2.13.3 Power failure .....	2-22
2.13.4 Resuming work .....	2-22
2.14 Notes for prevention of machine damage .....	2-23

Code No.	C-A220PL VII 3E1-0003	MFG No.	A220/0007 ~	Issue Date	2008.7
----------	--------------------------	---------	-------------	------------	--------

<b>3. Machine Structure .....</b>	<b>3-1</b>
3.1 Machine Components .....	3-4
3.2 Spindle Unit .....	3-6
3.3 Guide Bushing .....	3-7
3.4 Tool Post .....	3-8
3.5 Back Spindle Device .....	3-9
3.6 Z1 Axis Feed Structure .....	3-10
3.7 X, Y Axes Feed Structure .....	3-11
3.8 Z2, X2 Axes Feed Structure.....	3-12
3.9 Lubrication Device .....	3-13
3.10 Coolant Device .....	3-15
3.11 Pneumatic Device.....	3-16
<b>4. Periodical Check .....</b>	<b>4-1</b>
4.1 Periodical Check.....	4-3
4.1.1 Daily Check.....	4-4
4.1.2 Monthly Check .....	4-6
4.1.3 Semi-Annual Check .....	4-8
4.1.4 Removing Chips.....	4-10
4.2 Oil and Grease Supply.....	4-13
4.2.1 Lubrication list.....	4-13
4.2.2 Precautions on Lubrication and Replacement of Lubricant .....	4-14
4.2.3 Coolant .....	4-16
4.3 Consumable Parts .....	4-18
<b>5. Troubleshooting.....</b>	<b>5-1</b>
5.1 Procedure for Detecting Trouble.....	5-3
5.1.1 Overview.....	5-3
5.1.2 Procedure for Detecting Trouble.....	5-3
5.2 Status Screen .....	5-6
5.2.1 Operation in Status Screen.....	5-6
5.2.2 Reading Addresses and Data on Status Screen .....	5-7
5.3 Alarms .....	5-8
5.3.1 Alarms and Messages .....	5-8
5.3.2 Alarm Messages List.....	5-9
5.3.3 Operator Messages .....	5-18
5.4 Warning Messages .....	5-20
5.4.1 Warnings and messages .....	5-20
5.4.2 Warning Messages List.....	5-20
5.5 Troubleshooting .....	5-25
5.5.1 Resetting "1000 Emergency button pushed" Alarm.....	5-25
5.5.2 Resetting Power Circuit Overcurrent Trip.....	5-26
5.5.3 Resetting Thermal Trip .....	5-30
5.5.4 Resetting External Device Alarm.....	5-32
5.5.5 Resetting Interference Area Alarm.....	5-34

5.5.6	Resetting Invalid Main Spindle Chuck Operation .....	5-36
5.5.7	Resetting Invalid Back Spindle Chuck Operation.....	5-37
5.5.8	Resetting Main Spindle Orient Alarm .....	5-38
5.5.9	Resetting Back Spindle Orient Alarm .....	5-38
5.5.10	Resetting "2017 Device Battery Low Level" Alarm .....	5-39
5.5.11	Restoration from Other Alarms .....	5-41
5.6	Machine Part Faults .....	5-55
5.6.1	Machine Start Failure.....	5-55
5.6.2	Main Spindle Rotation Failure .....	5-56
5.6.3	Failure of Tool Spindle Rotation .....	5-56
5.6.4	Back Spindle Rotation Failure .....	5-57
5.6.5	Abnormal Condition around Guide Bushing .....	5-58
5.7	Appendix.....	5-62
5.7.1	Timer Setup .....	5-62
5.7.2	Specifying Keep Relay.....	5-64
5.7.3	Setting the Data Table .....	5-66
5.7.4	Setting the P-CODE Variables .....	5-69
5.7.5	Zero Return.....	5-73
5.7.6	Mechanical Adjustment.....	5-75
5.7.7	Software Version.....	5-76
5.7.8	Electrical Device Layout.....	5-77
5.7.9	Terminal Layout .....	5-79
5.7.10	Relay Board Component Layout .....	5-80
5.7.11	Control Box Component Layout .....	5-81
6.	Parts List .....	6-1
7.	Wiring Diagram .....	7-1
8.	Ladder I/O List.....	8-1
9.	Relocating the NC Machine.....	9-1
9.1	Selecting the Installation Site .....	9-3
9.2	Preparation for Transporting.....	9-8
9.3	Transportation .....	9-11
9.3.1	Hoist sling .....	9-11
9.3.2	Forklift truck.....	9-13
9.4	Installing the NC Machine .....	9-14
9.5	Pre-operation Check.....	9-19
9.6	Disposal.....	9-19