

MAINTENANCE MANUAL

for

QUICK TURN NEXUS 300/350

MANUAL No. : H331MA0012E

Serial No. :

Before using this machine and equipment, fully understand the contents of this manual to ensure proper operation. Should any questions arise, please ask the nearest Technical/Service Center.

IMPORTANT NOTICE

1. Be sure to observe the safety precautions described in this manual and the contents of the safety plates on the machine and equipment. Failure may cause serious personal injury or material damage. Please replace any missing safety plates as soon as possible.
2. No modifications are to be performed that will affect operation safety. If such modifications are required, please contact the nearest Technical/Service Center.
3. For the purpose of explaining the operation of the machine and equipment, some illustrations may not include safety features such as covers, doors, etc. Before operation, make sure all such items are in place.
4. This manual was considered complete and accurate at the time of publication, however, due to our desire to constantly improve the quality and specification of all our products, it is subject to change or modification. If you have any questions, please contact the nearest Technical/Service Center.
5. Always keep this manual near the machinery for immediate use.
6. If a new manual is required, please order from the nearest Technical/Service Center with the manual No. or the machine name, serial No. and manual name.

Issued by *Manual Publication Section, Yamazaki Mazak Corporation, Japan*

CONTENTS

Page

1	INTRODUCTION	1-1
1-1	List of Manuals to Be Used.....	1-1
1-2	Numbering System for Pages.....	1-1
1-3	Numbering System for Figures and Tables	1-1
1-4	Distinction between Standard and Optional Specifications.....	1-2
2	SAFETY PRECAUTIONS	2-1
2-1	Rule.....	2-1
2-2	Basic Safety Items.....	2-1
2-3	Clothing and Personal Safety	2-3
2-4	Safety Items Related to Operation	2-4
2-5	Safety Items Related to Gripping Workpiece and Tooling	2-6
2-6	Safety Items Related to Maintenance.....	2-7
2-7	Safety Items Related to Workplace	2-8
2-8	Safety Items Related to Chip Conveyor.....	2-8
2-9	Safety Equipment	2-9
2-10	Remarks on the Cutting Conditions Recommended by the NC.....	2-9
2-11	Safety Nameplates	2-9
3	OUTLINE OF THE MACHINE	3-1
3-1	Major Components	3-1
4	INSPECTION AND MAINTENANCE	4-1

4-1	General.....	4-1
4-2	MAINTENANCE CHECK Display	4-2
4-3	Regular Maintenance Inspection	4-4
4-4	Supplying Oil and Coolant.....	4-6
5	MAINTENANCE OF MAJOR MACHINE UNITS	5-1
5-1	Headstock	5-1
5-1-1	Construction and operation	5-1
5-1-2	Greasing and lubrication	5-3
5-1-3	Checking the headstock for disturbed accuracy in the event of collision.....	5-6
5-1-4	Cleaning.....	5-7
5-2	Turret.....	5-8
5-2-1	Construction and operation	5-8
5-2-2	Adjustment.....	5-11
5-3	TOOL EYE (★).....	5-13
5-3-1	Construction and operation	5-13
5-3-2	Checking and adjustment.....	5-14
5-4	X- and Z-Axes	5-17
5-4-1	Construction and operation	5-17
5-4-2	Lubrication	5-19
5-4-3	Adjustment.....	5-19
5-5	Tailstock	5-21
5-5-1	Construction and operation	5-21
5-5-2	Disassembly.....	5-22
5-5-3	Adjustment.....	5-23

5-5-4	Lubrication	5-26
5-5-5	Maintenance and check of the ball screw guide bushing (650U, 1200U)	5-27
5-6	Hydraulic Unit and Hydraulic Circuit	5-29
5-6-1	Construction and operation	5-29
5-6-2	Checkups before starting hydraulic unit.....	5-32
5-6-3	Inspection when starting hydraulic unit.....	5-32
5-6-4	Inspection and maintenance of hydraulic unit.....	5-32
5-7	Lubrication Unit and Lubrication Circuit	5-35
5-7-1	Construction and operation (grease lubrication)	5-35
5-7-2	Maintenance and check of the grease-lubricating pump.....	5-38
5-7-3	Construction and operation (oil lubrication)	5-39
5-8	Coolant System	5-40
5-8-1	Construction and operation	5-40
5-8-2	Supplying coolant.....	5-40
5-8-3	Cleaning.....	5-43
5-9	Air Unit (★).....	5-45
5-9-1	Construction and operation	5-45
5-9-2	Replacement and adjustment.....	5-48
5-10	Headstock Cooling Unit and Headstock Cooling System	5-50
5-10-1	Construction and operation	5-50
5-10-2	Replenishing and replacement of coolant.....	5-51
5-11	Others.....	5-54
5-11-1	CNC unit	5-54
5-11-2	Electrical control cabinet	5-55

5-11-3	Procedure for replacing the proximity sensor	5-58
5-11-4	Replacing the bulbs of the fluorescent lamp	5-59
5-11-5	Wipers.....	5-66
5-11-6	Front door glass	5-66
6	INSTALLATION	6-1
6-1	Preparation for Installation.....	6-1
6-1-1	Environmental requirements.....	6-1
6-1-2	Power requirements	6-2
6-1-3	Air source requirements (★).....	6-3
6-1-4	Foundation work.....	6-3
6-1-5	Foundation parts	6-4
6-1-6	Delivering the machine.....	6-5
6-2	Machine Installation.....	6-6
6-2-1	Precautions for machine installation	6-6
6-2-2	Unpacking, inspection and cleaning	6-12
6-2-3	Location of transit clamps.....	6-13
6-2-4	Installation procedure	6-15
6-3	Connecting the Power Supply Cable and Air Supply Hose	6-17
6-3-1	Connecting the power supply cable.....	6-17
6-3-2	Grounding	6-19
6-3-3	Connecting the air hose	6-20
6-4	Trial Operation.....	6-20
7	TROUBLESHOOTING	7-1
7-1	Headstock	7-1

7-2	Troubleshooting Procedures	7-2
7-2-1	If the tool has come into contact with the workpiece, chucks or other sections.....	7-2
7-2-2	If the source of the trouble cannot be located.....	7-2
7-2-3	GRAPHIC MAINTENANCE display	7-3
7-3	Troubleshooting for Each Unit	7-5
7-3-1	Chuck (★).....	7-5
7-3-2	Turret	7-6
7-3-3	TOOL EYE (★)	7-6
7-3-4	X-axis.....	7-7
7-3-5	Z-axis	7-7
7-3-6	Tailstock.....	7-7
7-3-7	Hydraulic unit	7-8
7-3-8	Grease lubrication unit	7-9
7-3-9	Oil lubrication unit.....	7-10
7-3-10	Coolant unit.....	7-10
7-3-11	Air unit (★)	7-10
7-3-12	Headstock cooling unit	7-10