User's Manual

BH504

Coordinate Measuring Machine

Mitutoyo

CONTENTS

PRECAUTIONS i

WARRANTY ii

1. INTRODUCTION **52**

1.1 Outline 52

1.2 Features 53

1.2.1 Features of coordinate measuring machines 53

1.2.2 Features of the BH504 series 53

2. SITE PLANNING AND INSTALLATION **54**

2.1 Site Planning-Environmental and Facility Requirements 54

2.1.1 Temperature 54

2.1.2 Humidity 54

2.1.3 Vibration 54

2.1.4 Dust 54

2.1.5 Air source 55

2.1.6 Grounding 55

2.1.7 Floor space requirements 56

3. NAME AND FUNCTION OF EACH PART **58**

3.1 Nomenclature 58

3.2 Description of Components 59

3.2.1 Machine stand 59

3.2.2 Base 60

3.2.3 Air regulator unit 61

3.2.4 Carriage 62

3.2.5 X-axis slider 63

3.2.6 Z-axis spindle and balance unit 64

3.2.7 Fine feed and clamp knobs 66

3.2.8 Name and function of buttons and switches 67

CONTENTS

4. OPERATION 70

4.1 Setup 70

4.2 Loading a Workpiece 70

4.3 Attaching a Probe and Balance Adjustment 71

4.3.1 Attaching a probe 71

4.3.2 Measuring range 72

4.3.3 Balance adjustment 74

4.4 Measurements 75

4.4.1 Measurement with a 3D touch signal probe 75

4.4.2 Measurement with a ball probe 75

4.4.3 Measurement with a centering microscope 75

4.5 Clamping and Fine Feeding 75

5. INSPECTION AND MAINTENANCE 76

5.1 Inspection and Maintenance 76

5.1.1 Supplied air pressure 76

5.1.2 Air filter and mist separator 76

5.1.3 X- and Y-axis guide faces, and Z-axis spindle 78

5.1.4 Measuring table 78

5.1.5 Scales 78

5.1.6 Removing the covers 79

5.1.7 Setting the DIP switches on the counter 80

5.2 Common Repair Parts 82

5.3 Accuracy Control 82

6. SPECIFICATIONS 84

6.1 Main Unit 84

6.2 External View, Dimensions and Mass 85

6.3 Standard and Optional Accessories 86

6.4 Optional Accessories 87

SERVICE NETWORK 89