MAKINO

EDGE3 / EDGE3S
Installation & Maintenance Manual

24ED1-MC-07-0712(E)

Chapter 1
General

Contents

1.1 General 1-1

1.2 Machine Configuration 1-1

1.3 Unit Identification (EDGE3) 1-2

1.3.1 Name and Function of Each Unit 1-4

1.3.2 HQSF Unit 1-5

Chapter 2
Safety Precautions

Contents

2.1 Fire Prevention Regulation 2-1
2.1.1 Kind of Dielectric Fluid and Fluid Level 2-1
2.1.2 Safety Devices 2-1
2.1.3 Working Environment 2-2
2.1.4 Safety Precautions 2-2
2.2 Automatic Fire Extinguisher 2-3
2.2.1 Operation Testing Procedure of Automatic Fire Extinguisher 2-5
2.3 Precaution on Machining 2-6
2.3.1 Inhibition of Blow Machining 2-6
2.3.2 Machining Near Fluid Level 2-6
2.3.3 Supervising During Automatic Operation 2-6
2.3.4 Fire Accident Cases 2-7

Chapter 3
Specifications

Contents

3.1 Machine Main Unit 3-1

3.2 Dielectric Fluid Supply Unit 3-2

3.3 Automatic Fire Extinguisher 3-2

3.4 Dielectric Fluid Cooler 3-3

3.5 Dimensional Drawings 3-4

3.5.1 EDGE3(S) General View (Without Sludge Separator) 3-5

3.5.2 EDGE3S General View (With Sludge Separator) 3-6

3.5.3 Table and Work Tank 3-7

3.5.4 Electrode Attachment Plate 3-8

Chapter 4
Transportation and Relocation

Contents

4.1 Precautions on Packing and Unpacking 4-1

4.2 Preparation for Lifting and Transportation.....4-1

4.3 Lifting the machine 4-6

Chapter 5
Machine Installations

Contents

5.1 Installation Environment 5-1
5.2 Necessary Facilities 5-1
5.3 How to Install the Machine 5-2
5.4 Leveling 5-3
5.5 Layout 5-4
5.6 Piping 5-6
5.7 Electric Wiring 5-6
5.8 Preparation for Operation 5-6
5.8.1 Wipe of the Rust Preventive Oil 5-6
5.8.2 Removing the Lifting Fixture 5-7
5.8.3 Removing Clamping Devices 5-8
5.8.4 Setting and Adjustment 5-9
5.8.5 Supplying Dielectirc Fluid 5-10

Chapter 6
Operations

Contents

6.1 Operations of Main Units 6-1
6.1.1 Generator 6-1
6.1.2 LCD Operation Panel 6-3
6.1.3 Portable Operation Panel 6-5
6.2 Dielectric Fluid Control Unit 6-9
6.3 Dielectric Fluid Supply Unit 6-11
6.3.1 Valve Adjustment 6-15
6.4 HQSF 6-16
6.4.1 General 6-16
6.4.2 Additives 6-16
6.4.3 Density Control of Additive μSC 6-17
6.4.4 Description of Each Mode 6-18
6.4.5 Operational Description 6-19
6.4.6 Description of Messages 6-21
6.4.7 Sludge Separator 6-22

Chapter 7
Inspections

Contents

7.1 Inspection Before Operation 7-1

7.2 Half-Yearly Inspection 7-4
7.2.1 Dielectric Fluid Temperature Sensor 7-4
7.2.2 Automatic Fire Extinguisher 7-5
7.2.3 Inspection of Machine Leveling 7-7
7.2.4 Machining Start Point Retract Function 7-7
7.2.5 Dielectric Level Low Monitoring Stop Function 7-8

7.3 Yearly Inspection 7-9
7.3.1 Automatic Fire Extinguisher 7-9
7.3.2 Dielectric Fluid Supply Unit 7-9
7.3.3 Greasing 7-9

Chapter 8
Maintenance

Contents

8.1 Dielectric Fluid Supply Unit 8-1
8.1.1 Replacing Filters 8-1
8.2 Dielectric Fluid Control Unit 8-3
8.2.1 Cleaning Aspirator 8-3
8.3 Filter Regulator 8-4
8.3.1 Draining Filter Regulator 8-4
8.3.2 Cleaning Filter Regulator 8-5
8.4 Dielectric Fluid Cooling Unit 8-6
8.4.1 Cleaning Air Filter 8-6
8.5 Automatic Fire Extinguisher 8-7
8.5.1 Container Replacement 8-7