Table of Content

Chapter 1 General Description **1**

1.1 Model Expression and Example 2

1.1.1 Model Expression 2

1.1.2 Example 2

1.2 The outline diagram of the system and example of combination 3

1.2.1 The outline diagram 3

1.2.2 The example of combination 5

1.3 Operation principle and system diagram 6

1.4 Installation space of the system 8

1.4.1 Installation requirements 8

1.4.2 Installation location and combination 10

1.4.3 Connection of cooling water piping 10

1.4.4 Water quality control 12

1.4.5 Remarks for installation 12

1.5 Types and technical specifications of the system 13

1.5.1 List of performance parameters of the system 13

1.5.2 Cooling capacity correction 14

1.5.3 Heating capacity correction 14

Chapter 2 Electric and Control Section **15**

2.1 Strong power section 15

2.1.1 Circuit diagram 15

2.1.2 List of connection lines 19

2.2 Weak power section 19

2.2.1 Running mode 19

2.2.2 Description of hand controller and the operation instruction 19

2.4 Connection distribution 26

2.5 Key setting 29

Chapter 3 Operation Check and Trouble Shooting **31**

3.1 List of check items for the system operation conditions 31

3.1.1 Check the record prior to adjustment 31

3.1.2 Debug and trial operation record 31

3.2 List of parameter variation for system operation 33
3.2.1 List of parameter variation for cooling operation 33
3.2.2 The trend of parameter variation for heating operation 33
3.3 List of trouble shooting 33
3.4 Common failures of the project 36

Chapter 4 Maintenance 40

4.1 Unit profile and list of parts 40
4.1.1 Unit profile 40
4.1.2 Spare parts list 48
4.2 Part disassembly process 55
4.3 Maintenance 63
4.3.1 Cleaning of refrigerated water system 63
4.3.2 Cleaning of condenser fin 64
4.4 Important maintenance operation 64
4.4.1 On-site leak detection 64
4.4.2 Evacuation and filling of refrigerant 65
4.4.3 Air discharge method in the system 66
4.4.4 Replacement of compressor 66
4.4.5 Replacement of four-way valve 68
4.4.6 Replacement of thermostatic expansion valve 68
4.4.7 Treatment of the leak of the system pipe 69
4.4.8 Vacuumizing the system pipe after the maintenance 75