



Toshiba HCV-5HA Instruction Manual

7.2kv, 400a-7.0ka (4.5ka@7.2kv)

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Document: VF00W103 Rev. 7

INSTRUCTION MANUAL

INSTALLATION - OPERATION - MAINTENANCE

HCV-5HA 7.2kV, 400A-7.0kA (4.5kA@7.2kV)

HCV-5HAL 7.2kV, 400A-7.0kA (4.5kA@7.2kV)

Manufactured in the USA

MAY 2008

Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com

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Related Manuals for Toshiba HCV-5HA

[Industrial Electrical Toshiba HCV-5HA Manual](#)

Instruction manual medium-voltage vacuum contactor (26 pages)

[Toshiba VK-6M32A Installation Operation & Maintenance](#)

Vk series: hvk series. vacuum circuit breakers 5-15kv (59 pages)

Summary of Contents for Toshiba HCV-5HA

[Page 1](#) Document: VF00W103 Rev. 7 INSTRUCTION MANUAL INSTALLATION - OPERATION - MAINTENANCE HCV-5HA 7.2kV, 400A-7.0kA (4.5kA@7.2kV) HCV-5HAL 7.2kV, 400A-7.0kA (4.5kA@7.2kV) Manufactured in the USA MAY 2008 Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com...

[Page 2](#) MAY 2008 Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com...

[Page 3](#) These instructions are not intended to cover all details, combinations, or variations of the equipment, storage, or installation. Use only Toshiba-authorized replacement parts. This equipment is designed and built in accordance with applicable safety standards in effect on the date of manufacture.

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TABLE OF CONTENTS Page 3 Page Page SAFETY DATA MAINTENANCE Safety Data Information General Inspection Vacuum Interrupter Bearing GENERAL Closing Coils Latch Mechanism Recommended Procedure Auxiliary Switch RECEIVING & HANDLING VACUUM INTERRUPTER Receiving Replacement Procedure Handling Removing Storage Mounting Adjustment of Contacts Operation Check GENERAL DESCRIPTION Application...

[Page 5](#) Be trained in rendering first aid. SAFETY CODES Toshiba medium voltage controllers are general purpose, Class E, magnetic controllers designed and built in accordance with the latest applicable provisions of NEMA ICS 3 Part 2, UL 347 and the National Electrical Code.

[Page 6: Safety Data Information](#)

SAFETY DATA Page 5 IMPORTANT MESSAGES Read this manual and follow its instructions. Signal words such as DANGER, WARNING, CAUTION, and NOTE will be followed by important safety information that must be carefully reviewed. Indicates a situation which will result in death, serious injury, and severe property damage if you do not follow instructions.

[Page 7: General](#)

These instructions are not intended to cover all details, combinations or variations of the equipment, storage or installation. Toshiba medium voltage open vacuum type magnetic motor controllers are UL recognized and built in accordance with the latest applicable provisions of NEMA ICS 3 Part 2, UL 347 and the National Electrical Code.

[Page 8](#) KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com...

[Page 9: Receiving & Handling](#)

If any parts are damaged or missing, file a claim immediately with the carrier and notify the Toshiba sales office. Try to give as much information as possible when filing a claim.

[Page 10: General Description](#)

20 Hz - 1G or less -Shock -Weight 43 lbs. Latched type 44 lbs. If the contactor is to be used in conditions other than those specified above, please consult Toshiba International Corporation. Table 2 General Application and Load Data System 0.8PF Ind/Syn...

[Page 11: Ratings](#)

GENERAL DESCRIPTION Page 9 CONTACTOR RATINGS HCV-5HA Rated Voltage 7200 Volts Rated Current 400 Amps Interrupting Capacity 7000A RMS Symmetrical @5000V Max. 4500A RMS Symmetrical @7200V Max. Permissible Switching Frequency 1200/Hour Mechanical Life 2,500,000 Operations Electrical Life 250,000 Operations Closing Time...

[Page 12: Construction](#)

Page 10 STRUCTURE Fig. 1 Construction of HCV-5HA & HCV-5HAL Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com...

[Page 13: Pre-Operation Set-Up](#)

PRE-OPERATION SET-UP Page 11 APPLICATION PRECAUTIONS Verify that the voltage and current applied is within the specified ratings. (See application table, page 5). When the contactor is used with an induction heater facility, the switching life of the vacuum interrupter is approximately 250,000 operations. The vacuum interrupter should be replaced after 250,000 operations.

[Page 14: Controls](#)

Page 12 PRE-OPERATION SET-UP CONTROLS The drive unit for the closing coil assembly is installed in a cavity in the molded frame housing. The closing circuit can be operated by applying either AC or DC to this drive unit. The optional latch trip circuit uses DC as standard.

[Page 15](#) PRE-OPERATION SET-UP Page 13 CONNECTION OF CONTROL POWER SUPPLY Figures 3 and 4 show the internal connections of the magnetically held (normally energized) type and the latched type respectively. Connect control power and open/close control signals according to these connection diagrams. Note: Connections are the same for 100V and 200V class.

[Page 16](#) Page 14 ONTRO CONTROLS Page 14 Contacts or Jumper Wire Fig. 5 Internal Configuration of Drive Unit. STANDARD OPERATION CIRCUIT The following figures illustrate the vacuum contactor and its auxiliary circuits (control and monitoring). Fig. 6 represents the standard operation circuit diagram of the normally energized type and Fig.

[Page 17: Latched Circuit Diagrams](#)

LATCHED CIRCUIT Page 15 Fig. 7a Standard Operation Circuit Diagram of Latched Type Using Shunt Trip REMOTE OPERATION SWITCH LOCAL REMOTE VCTT START INTERLOCK CONTROL RELAY Fig. 7b Standard Operation Circuit Diagram of Latched Type Using Capacitor Trip Device REMOTE OPERATION SWITCH LOCAL REMOTE...

[Page 18: Trial Operation](#)

For latch kit adjustment and maintenance please refer to manual no. 6F9G0132 - Installation Instructions of Latch Kits for HCV-5HA. Phone: 800.894.0412 - Fax: 888.723.4773 - Web: www.clrwtr.com - Email: info@clrwtr.com...

[Page 19: Maintenance](#)

MAINTENANCE Page 17 GENERAL INSPECTION MAINTENANCE AND INSPECTION The following maintenance and inspections are recommended to maintain the performance level and extend the operational life of the vacuum contactor. BEFORE CONDUCTING MAINTENANCE AND INSPECTIONS, MAKE SURE THAT ALL POWER IS TURNED OFF. ITEMS FOR INSPECTION Table 3 INSPECTION...

[Page 20: Vacuum Interrupter](#)

Page 18 MAINTENANCE Make Sure Power Is Turned Off. MAINTENANCE Location Maintenance Procedure Vacuum Check the upper and lower flanges and interrupter shaft to see if they are Interrupter contaminated or corroded. UPPER FLANGE If contaminated...use a clean cloth and rubbing alcohol. If corroded..replace with a new interrupter.

[Page 21](#) Closing Coil Dark Brown or Black replace with new coil. If the closing coil is overheating, contact Toshiba. * Check that the holding latch reliably engages. Note: To manually close the latch, hold the central area of the rotating shaft with a wrench and operate it.

[Page 22: Removing](#)

Page 20 MAINTENANCE PROCEDURE FOR REPLACING VACUUM INTERRUPTERS When a vacuum interrupter has reached a specified life (250,000 operations) or when it is damaged, it is recommended that it be replaced in the following sequence: "B" Removing (M8 BOLT) CONDUCTIVE 1) Hold the insulating flange with one hand and COLLAR loosen nut "A"...

[Page 23: Mounting](#)

MAINTENANCE Page 21 MOUNTING 1) Remove the conductive nut from the vacuum interrupter being replaced and attach it to the new vacuum interrupter as shown in Fig. 10. 2) Put the conductive collar on the upper part of the vacuum interrupter (stationary terminal) and assemble the vacuum interrupter.

[Page 24: Troubleshooting](#)

SOLUTION TROUBLE/PROBLEM If inspection and/or Conduct investigation with countermeasure is difficult, main power "OFF". inform Toshiba immediately. Lower the voltage drop to Control power supply is low. increase the voltage to 90% or more of the rating. Incorrect control voltage.

[Page 25](#) OUTLINE Page 23 MOUNTING HOLE LAYOUT Fig. 12 Types HCV-5HA, HCV-5HAL
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[Page 26: Warranty And Limitation Of Liability](#)

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This manual is also suitable for:

[Hcv-5hal](#)