

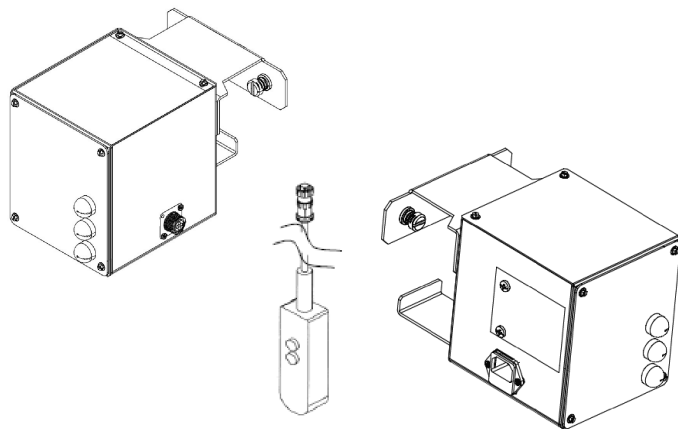


Cutler-Hammer

RotoTract™ Remote Racking Operating Manual

Instruction Leaflet IL04300001E

Effective July 2008



RotoTract Remote Racking Accessory for Use with FlashGard™ Motor Control Center Units

Introduction

RotoTract remote racking accessory allows the user of a FlashGard MCC unit to rack IN the unit retractable stabs into the CONNECTED position or rack OUT the unit retractable stabs into the WITHDRAWN position.

A unit test position is available with **IT** MCC units only; in this position, the unit stabs are disconnected and the unit's **IT** Cover Control is powered with 24 Vdc for diagnostic purposes.

Remote racking control is accomplished with a hand-held pendant station which is available with a 15-foot long cord that connects to the drive module. The drive module is powered with 120 Vac through a 4-foot cord.

Accessory Kit Contents

The kit (Catalog Number CHFG-RRS) comes completely contained in its own carrying case, with an installation and user manual booklet and contains:

- 1 – RotoTract accessory module
- 1 – Pendant station
- 1 – ac power cord (not shown)



CAUTIONS AND WARNINGS

PRIOR TO USING THIS ACCESSORY, ENSURE THAT ALL AND ANY POWER SOURCES ARE REMOVED FROM THE MCC INSTALLATION. REMOTE RACKING SHALL ONLY BE PERFORMED BY QUALIFIED PERSONNEL.

FlashGard Stabs Position Indicator Status

The MCC unit stabs position indicators window shows the status of the unit retractable stabs:

WITHDRAWN (GREEN) Indicator — MCC unit stabs are disconnected from the MCC vertical bus and are in the withdrawn position and the control power is switched OFF. See **Figure 1**.

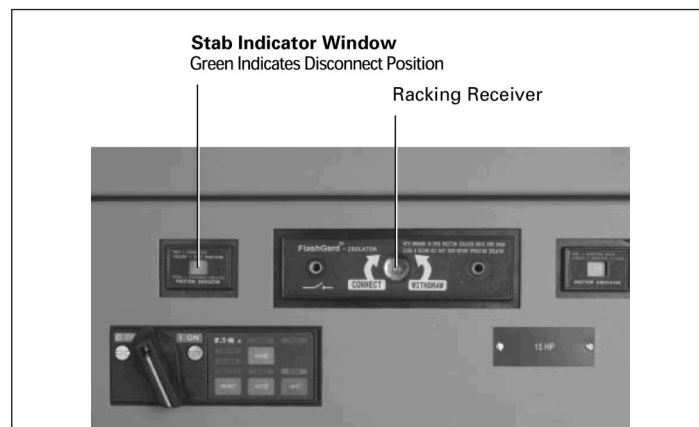


FIGURE 1.

CONNECTED (RED) Indicator — MCC unit stabs are connected to the MCC vertical bus. See **Figure 2**.

Notes:

- For **IT** MCC units only, the 24 Vdc control power supply is switched ON in this position.
- For Freedom 2100 MCC units, the control power is provided by a CPT source which is only switched ON when the unit disconnect is in an energized position and supply voltage is provided by a CPT.

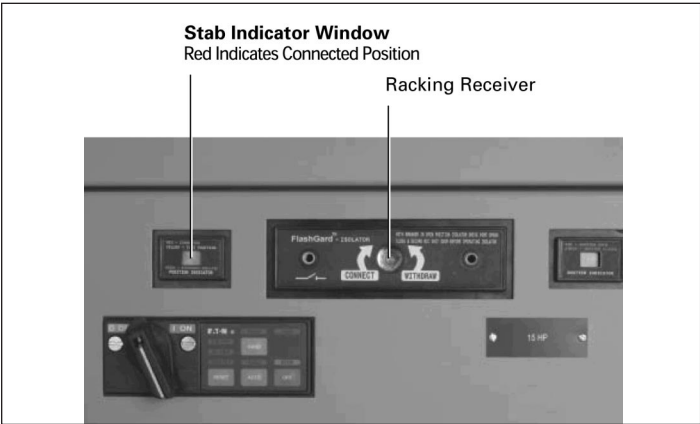


FIGURE 2.

TEST (YELLOW) INDICATOR — MCC unit stabs are disconnected and are withdrawn in this position. See **Figure 3**.

Notes:

- IT** MCC units only, the 24 Vdc control power supply remains switched ON and the **IT** unit cover controls are operational.
- The test position is not available with Freedom 2100 MCC units.
- IT** MCC Feeder units only, with optional programmable cover controls with 24 Vdc control power.

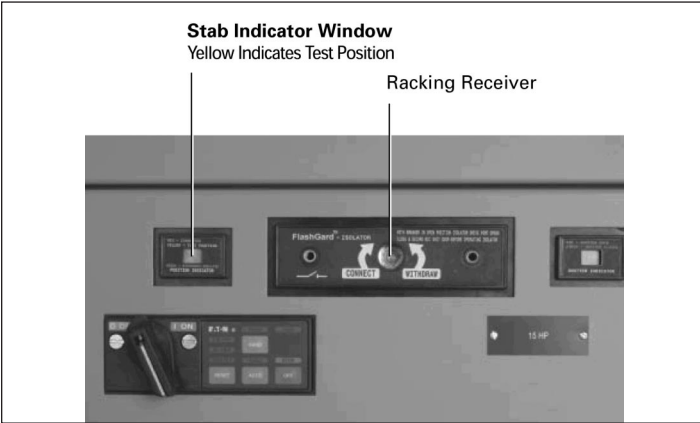


FIGURE 3.

FlashGard Unit Interlocking Features

The MCC unit disconnect-operating handle is interlocked in the OFF position when the FlashGard is in the WITHDRAWN – GREEN or TEST – YELLOW stab position indicator window; with access to the racking portal open ready to receive this remote racking accessory.

Close and securely latch the MCC unit door prior to mounting the remote racking accessory to the MCC unit.

With the door closed and the unit in the disconnect in the OFF position, the retractable stabs are free to be racked into the CONNECTED position. In the CONNECTED position, the disconnect interlock is disengaged, enabling the disconnect-operating handle to be turned ON to energize the unit power circuitry.

FlashGard — Positive Shutter indication

The FlashGard retractable stab mechanism mounted in the MCC unit has an integral second shutter system that operates independently to the MCC vertical bus shutter mechanism.

The integral unit shutter is provided with an indicator window on the front on the unit that shows:

Shutter Open — RED Indicator — shows that the retractable stabs are CONNECTED to the MCC vertical bus.

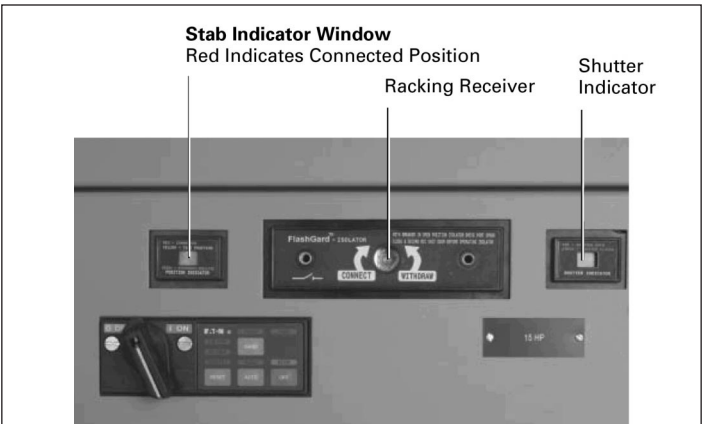


FIGURE 4.

Shutter Closed — GREEN Indicator — providing positive indication that the stabs are retracted from the MCC vertical bus and are WITHDRAWN.

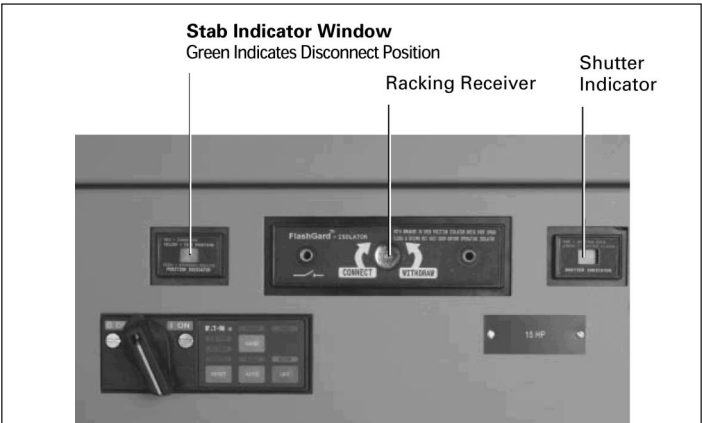


FIGURE 5.

TABLE 1. FLASHGARD INDICATOR STATUS

	POSITION INDICATOR	SHUTTER INDICATOR
WITHDRAWN	GREEN	GREEN
TEST	YELLOW	GREEN
CONNECTED	RED	RED

Instruction and Training Material

Prior to any action using this accessory, ensure that all and any power sources are removed from the MCC installation. Remote racking shall only be performed by qualified personnel.

Mount Racking System to MCC Unit

1. Mounting the RotoTract module directly to the MCC unit front panel as shown in **Figures 6 and 7**.
2. There are two mounting points that need to be fastened to securely attach the module to the unit, hand tighten as shown in **Figure 7**.
3. Connect the pendant station to the drive module, see **Figure 9**.
4. Connect 120 Vac cord to the drive module and then to a 120 Vac power socket, see **Figure 10**.

It is recommended to use this accessory with an ac power socket that is protected by a Class A, ground fault circuit interrupter.

Note: ac connector on drive module is fused with a Bussmann® type GMA – 1 amp fuse.

The AMBER – POWER indicator will illuminate when connected to the ac power and indicate the drive module is energized and ready to begin racking operations.

Basic Operating Procedures

The basic operating parameter of the racking system drive module which is controlled by the hand-held pendant station with IN and OUT push-buttons.

Drive module indication:

- RED – Pendant station IN push-button active.
- AMBER – 120 Vac powered.
- GREEN – Pendant station OUT push-button active.

Installing a unit by operating the IN push-button operator, on the pendant station; racks the MCC unit retractable stabs into the CONNECTED position indicated by the RED flag in the window on the left side of the front panel.

Racking time is approximately 12 seconds.

Removing a unit by operating the OUT push-button operator, on the pendant station; racks the MCC unit retractable stabs into the WITHDRAWN position indicated by the GREEN flag in the window on the left side of the front panel.

Racking time is approximately 12 seconds.

Best practice for locating the TEST position is to rack out by using the OUT push-button operator on the pendant station to the WITHDRAWN position indicated by the GREEN flag in the window on the left side of the front panel.

Then, by inching the IN operator until the TEST position is indicated by the YELLOW flag in the window on the left side of the front panel.

Units with 24 Vdc cover control - device island, see **Figure 13**; all the lights on the control panel will be illuminated when in the TEST position, indicating control power is engaged.



FIGURE 6.



FIGURE 7.



FIGURE 8.



FIGURE 9.



FIGURE 10.

Freewheeling Drive System Feature

This feature automatically controls and limits the retractable stab moving carriage drive torque with a clutch mechanism in both the CONNECTED and WITHDRAWN position. When in freewheeling condition, the clutch mechanism makes a clicking sound.

FAQ

1. The unit disconnect cannot be closed and turned ON?
 - Removing this accessory releases an interlock that blocks the disconnect operation.
 - The retractable stabs must be in the CONNECTED position to release the interlock blocking the disconnect operation.
 - 1/4 turn latch and unit interlock must be fully rotated counterclockwise, see **Figure 11**, insert bottom left.

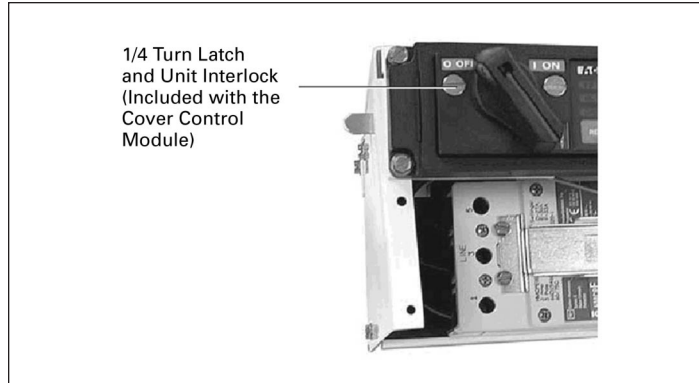


FIGURE 11.

MCC Unit Removal and Installation Procedures

The removal and the installation of a MCC unit is described in the following sections.

Preparation to Remove Plug-in Units:

CAUTION

UNITS 18 INCHES OR MORE HIGH HAVE A RETAINING SCREW AT THE LOWER EDGE OF EACH SIDE OF THE UNIT FRAME TO ADD STABILITY IN SHIPPING. THE SHIPPING SCREWS MAY BE RETAINED AND REUSED OR REMOVED AFTER INSTALLATION: UNSCREW PRIOR TO UNIT WITHDRAWAL.

Removing a Unit

1. Turn unit operator OFF and keep unit door closed. At this point, the Stab Position indicator should show RED, indicating that the stabs are fully extended and connected to the vertical bus. The Shutter Indicator should show RED also indicating that the shutters are open.
2. To disconnect the stabs from the vertical bus, a 3/8-inch square drive should be inserted into the Racking Receiver. The 3/8-inch square drive can either be a manual tool or a remote racking device. Rotate the square drive counterclockwise to begin to remove the stabs. If you happen to rotate clockwise, the unit should spin freely and prevent the stabs from being forced any further on the vertical bus. The Stab Position Indicator flag and the Shutter Position Indicator flag should begin to rotate to show the position of the stabs and internal shutter. It takes approximately 22 full rotations to move the stabs from the connected to the disconnect position. The disconnect position will be illustrated when the Stab Position Indicator and Shutter Position Indicator are both GREEN.
3. Open the vertical wireway door to remove any plug-in terminal blocks that might be connected to the unit (**Figure 12**). Please look for any additional wiring that might be terminated inside the unit. These connections will need to be removed prior to removal of the unit from the structure.
4. Turn the Unit Latch, which is located left of the unit operator (**Figure 11**), counterclockwise approximately 1/4 turn.
5. Open unit door and remove an interconnection wiring between units, master terminal block or external point of the motor control center. For units that contain a motor load stab, disconnection of the motor leads is not required in order to remove the unit from the structure.
6. Inspect the unit for any other material, accessories or cable that might interfere with the removal of the unit.
7. Pull the unit toward you. Guide rails that assist in the removal of the bucket will support the bucket. Visually verify that the shutter in the structure for the bucket has closed over the opening to the vertical bus. If the shutter did not close, please shut down power to the motor control center prior to replacement or repair of the shutter.
8. Close unit door by securing the door 1/4 turn latches on the right side of the door to reduce access to the unit.

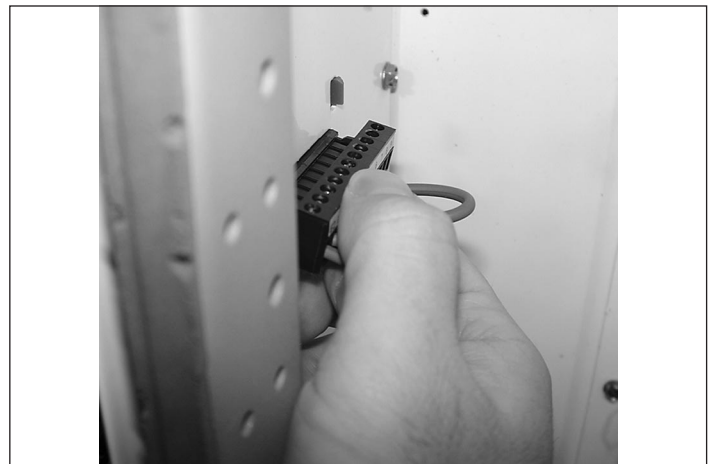


FIGURE 12. DISENGAGING PULL-APART TERMINAL BLOCKS

Installation of a Unit

1. Prior to installation of the unit, verify that the unit stabs are fully withdrawn and the internal shutters are closed (**Figure 14**). The Unit Latch at the top of the bucket needs to be flush with the top of the bucket to prevent interference with the divider pan when installing the bucket. The unit operator needs to be in the OFF position and the unit latch should be turned down so the metal tab on the left side of the unit is inside the unit. This will prevent any interference with the structure frame when installing in the structure.
2. Open the unit door and slide the bucket into the structure. The unit uses two guide rails that are located on the left and right side bottom of the divider pan. The top wrapper of the unit has grooves on the left and right side that sit into the guide rail (**Figure 17**).
3. Press the unit in the structure until the front of the unit is approximately flush with the divider pan. You might feel a little resistance when sliding in the structure. This is due to the physical connection between the motor load stabs and motor load terminal block on the lower right-hand side of the unit.
4. Open the vertical wireway door to install any plug-in terminal blocks or terminal and interconnection wiring inside of the unit. Close and secure the wireway door.
5. Turn the latch located to the left of the unit operator clockwise until it is horizontal.

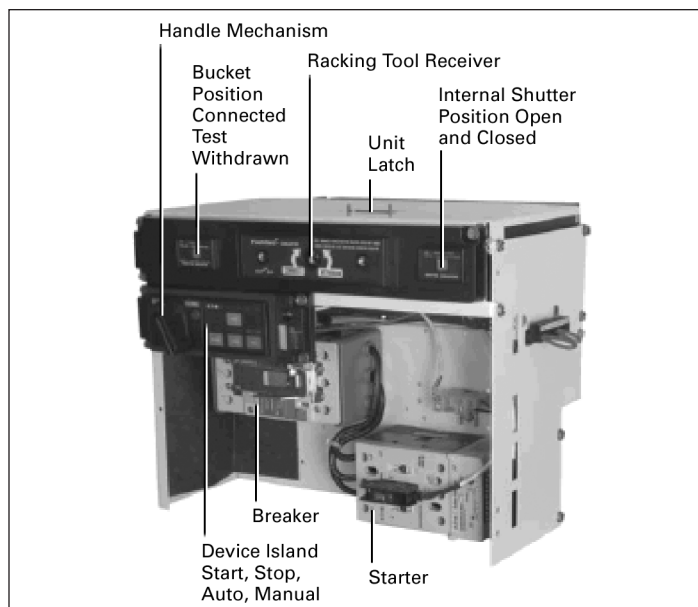


FIGURE 13. IT FLASHGARD COMPONENTS

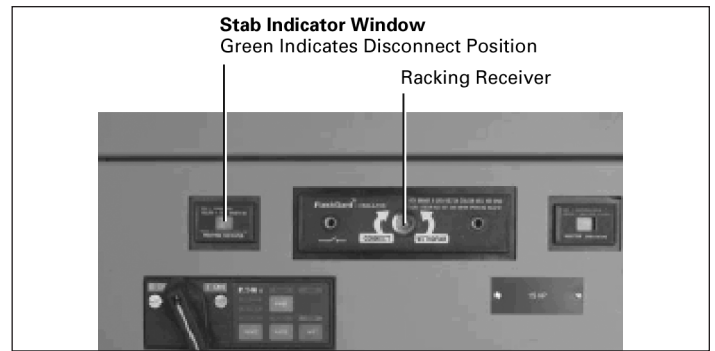


FIGURE 14. STABS IN DISCONNECT POSITION

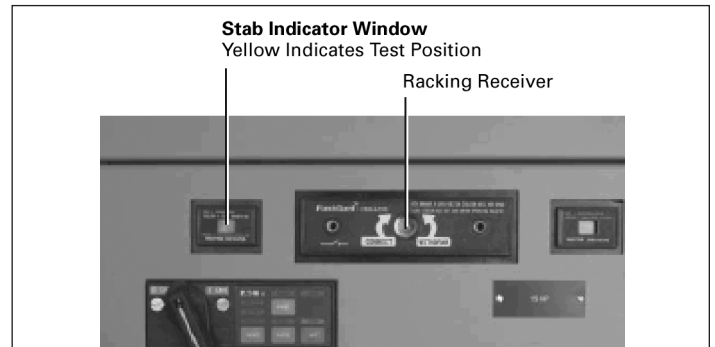


FIGURE 15. STABS IN TEST POSITION

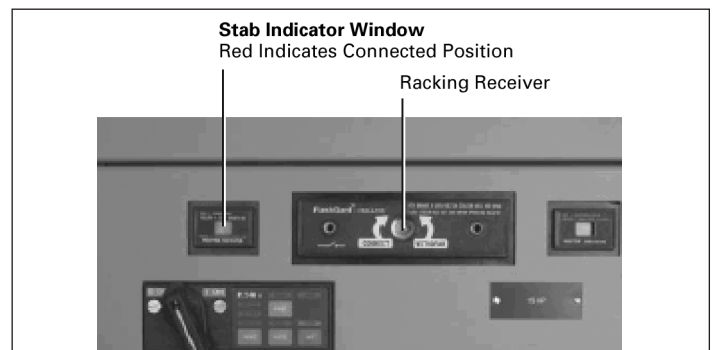


FIGURE 16. STABS IN CONNECTED POSITION



FIGURE 17. SHUTTER-ARM LINKAGE

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Publication No. IL04300001E / Z7161
July 2008