

Operation & Maintenance Manual
GEK-99986
Catalog # WPEGRLV
115 VAC, 60/50 Hz

Low Voltage WavePro™ and
EntelliGuard™ Circuit Breakers

Remote Racking Operator

For Small Frame Breakers 800A - 2000A
and Large Frame Breakers
3200A - 5000A



Section 1. Introduction

The remote racking operator allows the user to move a drawout circuit breaker between the connect and disconnect positions via an electric racking motor and gearbox attached to the front of the breaker. The remote racking operator requires 115Vac, 50/60Hz control power. A control box connected to the operator with a

thirty-foot cable permits control from a remote location.

The remote racking operator is portable and is designed for attachment to the WavePro & Entellisys Low Voltage Power Circuit Breaker in AKD-10 & Entellisys Switchgear, Powerbreak Switchboards, and OEM Substructures.

Section 2. Receiving, Handling and Storage

2-1 Receiving and Handling

Each Remote Racking device is carefully inspected and packed for shipment. Immediately upon receipt of the device an examination should be made for any damage sustained in transit. If injury or rough handling is evident, a damage claim should be filed immediately with the transportation company, and the nearest General Electric Sales Office should be notified.

The device should be removed from the shipping box with sufficient care so that no damage will result from rough handling. "Loose parts" associated with the apparatus may be included in the crate. Care should be taken to make certain that these parts are not overlooked.

2-2 Storage

The remote racking operator should be protected against condensation, preferably by storing it in a warm, dry environment at moderate temperatures such as 40 degrees F to 100 degrees F. The storage area should be clean and contain no corrosive gasses.

If the device is stored for any length of time, it should be inspected prior to use to insure its proper mechanical and electrical working condition.

Section 3.Description

3-1 Description – Small Frame remote racking Operator – 800- 2000A frame WavePro Breakers

The remote racking operator consists of a drive train, control switches, and attachment brackets. The drive train is made of a gear motor (1, fig. 1), And a square drive socket (2, fig. 1), which couples to the breaker drawout mechanism.

Two control switches and a circuit breaker are included with each remote racking operator. The Start switch (3, fig. 1) housed in the hand-held box (4, fig. 1) controls the power to the motor. Pushing the button closes the switch and in turn supplies power to the motor. This control switch is spring loaded; therefore, continuous pressure on the button is required to keep the motor running. The motor directional control switch (5, fig. 1) is mounted on the motor housing. Two positions are provided , “IN” and “OUT”. For racking toward the CONNECT position the switch should be set in “IN”. For racking toward the DISCONNECT position, the switch should be set to “OUT”. The circuit breaker (6, fig. 1) senses the motor stall current when the breaker reaches the end of its travel which causes the motor to stall. The higher motor stall current trips the circuit breaker to the OFF position and in turn shuts off the power to the motor. The sliding latch (7, fig. 1) is designed to provide the means for attaching the remote racking operator to the front of the Small Frame Breaker. The sliding latch (7, fig. 1) hooks into the breaker cover (8, fig. 1) for mounting the remote racker to the Breaker.

ATTACHMENT / REMOVING OF DEVICE

Attaching the Remote Racking Operator to the Small Frame WavePro circuit breaker.

Attach the Remote Racking Operator to the WavePro breaker by first depressing the OPEN button on the front of the breaker. While depressing the OPEN button, slide the Racking Screw Access Door, located below the OPEN button, to the right. Position the Remote Racking Operator so that the square drive coupling is aligned with the square shaft of drawout (racking) mechanism. Push the Remote Racking Operator toward the breaker to engage the square drive coupling with the shaft of the racking mechanism. If the coupling and the shaft are not in alignment, the motor shaft extension on the back of the motor housing can be rotated in either direction until the square drive aligns with the square racking shaft. When they are in alignment, the Remote Racking Operator will slide further into the breaker front cover and the Remote Racking Operator should latch into the cover. Check the latch on the left side of the Remote Racking Operator to make sure it is fully engaged into the breaker front cover (indicated by the label on the latch).

Removing the Remote Racking Operator from the Small Frame WavePro circuit breaker.

Hold the Remote Racking Operator securely and press the latch release (located on the left side of the Remote Racking Operator) to the right. This should allow the Remote Racking Operator to be pulled from the breaker front cover. If the breaker is in the CONNECT or TEST position, the OPEN button must be depressed to allow the Racking Screw Access Door to close.

Remote Racking Operator for AKD-10

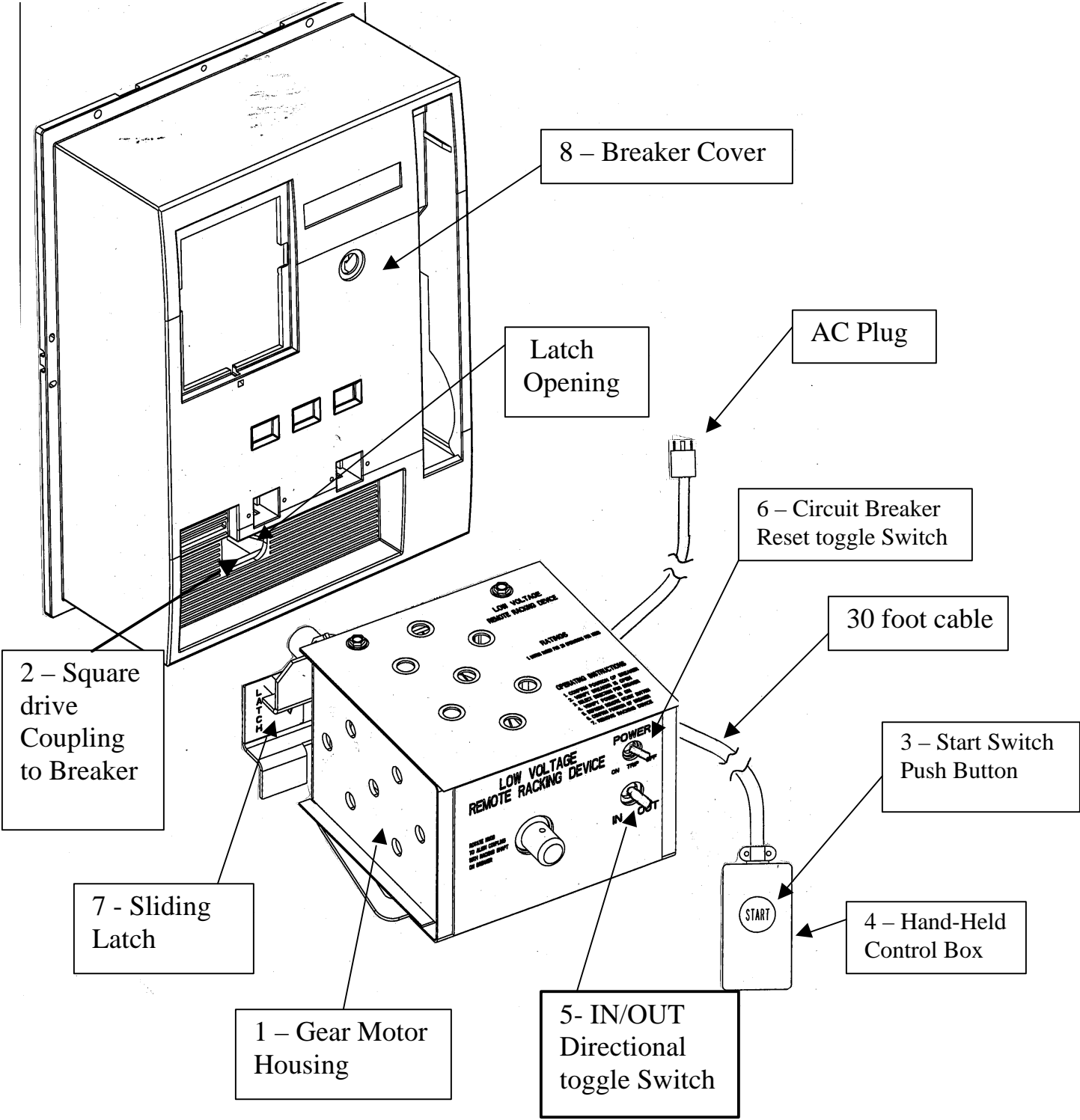


Figure 1

3-2 Description Large Frame Remote Racking operator – 3200-5000A Frame WavePro Breakers

The remote racking operator consists of a drive train, control switches, and attachment brackets. The drive train is made of a gear motor (1, fig 2), a square drive socket (2, fig 2), which couples the breaker.

Two control switches and a circuit breaker are included with each remote racking operator. The START switch (3, fig 2) housed in the hand-held box (4, fig 2) controls the power to the motor. Pushing the button closes the switch and in turn supplies power to the motor. This control switch is spring loaded; therefore, continuous pressure on the button is required to keep the motor running. The motor directional control switch (5, fig 2) is mounted on the motor housing. Two positions are provided, “IN” and “OUT”. For racking toward the CONNECT position the switch should be set in “IN”. For racking toward the DISCONNECT position, the switch should be set to “OUT”. The circuit breaker (6, fig 2) senses the motor stall current when the breaker reaches the end of its travel which causes the motor to stall. The higher motor stall current trips the circuit breaker to the OFF position and in turn shuts off the power to the motor.

The ¼ turn shaft (item 7) is designed to provide the means for attaching the remote racking operator to the front of the Large Frame Breaker

Attaching the Remote Racking Operator to the Large Frame WavePro or Entellisys circuit breaker

The circuit breaker must be in the OPEN position before attempting to attach the Remote Racking Operator to the breaker. Slide either the upper or lower Racking Screw Access Cover (located on the upper right corner of the breaker cubicle door) to the left. This will expose two openings in the breaker cubicle door. The upper opening is for the ¼-turn latch rod and the lower opening is for the square drive coupling. Position the Remote Racking Operator so that the square drive coupling and ¼-turn latch rod are aligned with the openings in the breaker cubicle door. Push the Remote Racking Operator toward the breaker so that the square drive coupling engages the square racking shaft and the ¼-turn latch rod engages the breaker frame. If the coupling and the shaft are not in alignment, the motor shaft extension on the back of the motor housing can be rotated in either direction until the square drive aligns with the square racking shaft. When they are in alignment, the Remote Racking Operator will slide further through the breaker cubicle door. Rotate the ¼-turn latch rod counter-clockwise to lock the Remote Racking Operator to the breaker.

Removing the Remote Racking Operator from the Large Frame WavePro circuit breaker

Hold the Remote Racking Operator securely and rotate the ¼-turn latch rod clockwise to release the Remote Racking Operator from the breaker. Pull the Remote Racking Operator away from the breaker cubicle door. The Racking Screw Access Covers will close automatically.

Remote Racking Operator for AKD-10

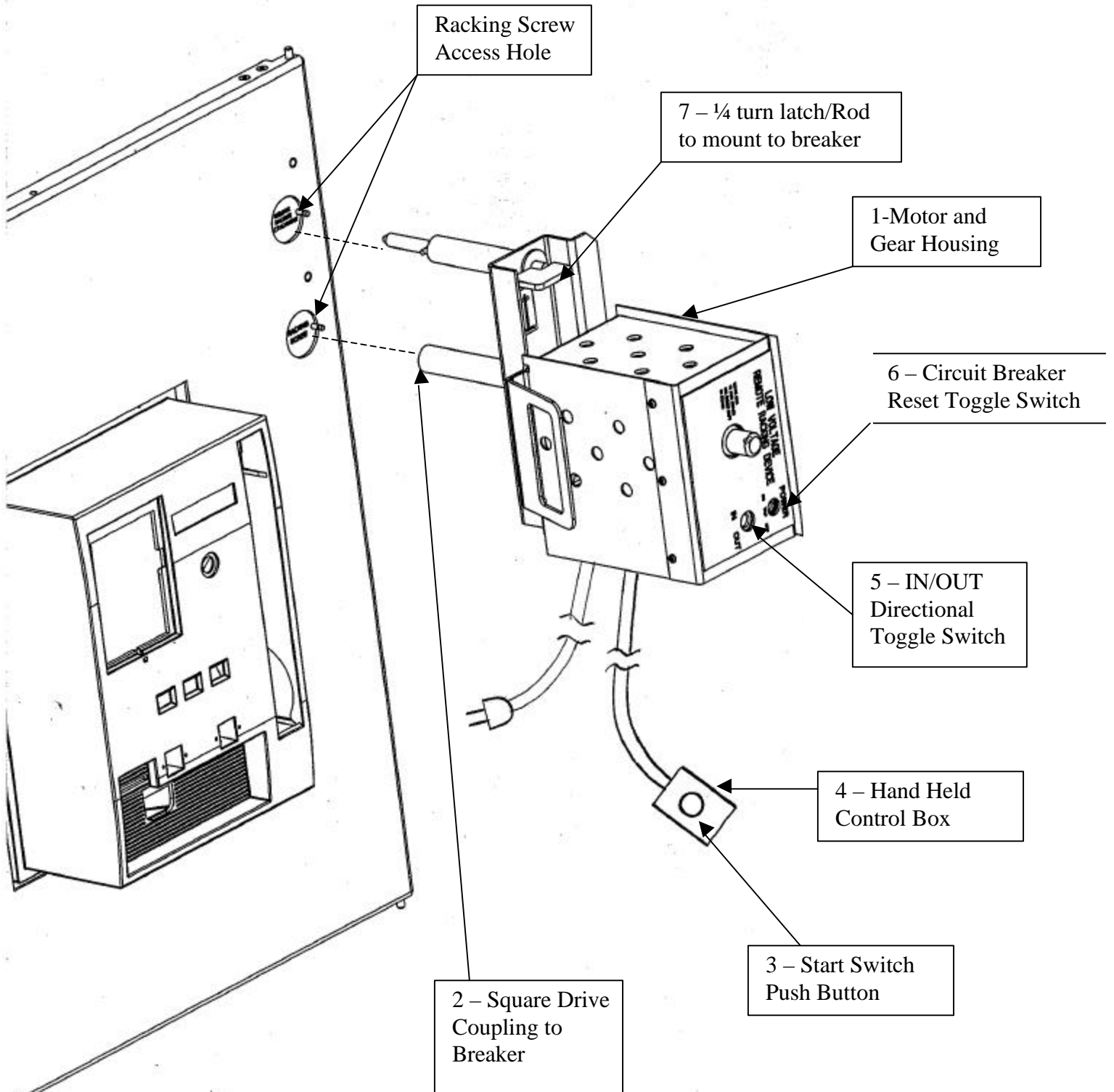
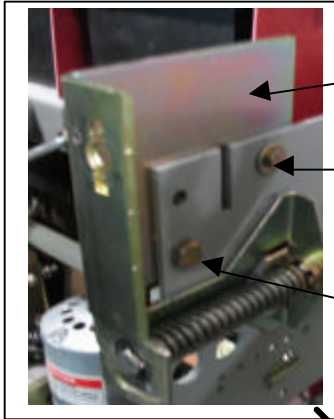


Figure 2

Section 4. Modifications

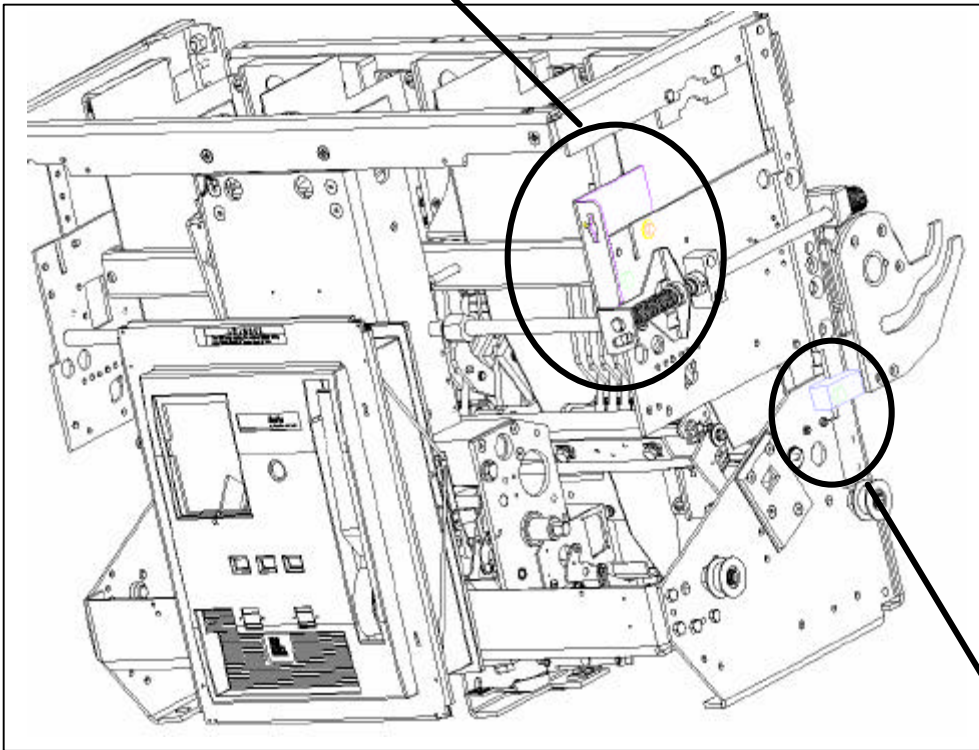
4-1 Converting Large Frame Breaker to work with Remote Racker



1- Connecting Bracket – Align 1st to existing holes in breaker frame.

2,3,4,5 – ¼ -20 Bolt, Nut and Washers – Add ¼ in ch hardware to existing hole of bracket 1 and frame in upper position as shown.

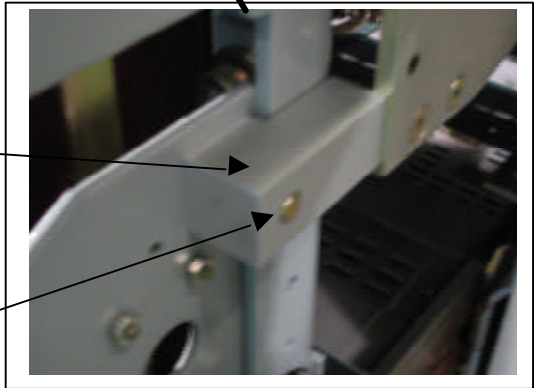
6,7,8,10 – 3/8-16 Bolt, Nut and Washer – Add 3/8 hardware to existing hole in bracket 1 and breaker frame in lower position as shown.



WPEGRRMODLF
Modification Kit for
32, 40, 50 Large Frame
Wave Pro Breakers

9 – Racking Stop – Align racking stop 9 with existing hole in breaker frame as shown.

10 – 3/8-16 Bolt – Add 3/8 hardware from inside frame of breaker as shown.



4-2 Changing to Large Frame Breaker Door to work with Remote Racker



Remote Racking
Attachment Access holes

Kit **WPEGRRLFDR** - 3200/4000A Wave Pro Door

Kit **WPEGRRLFDRDI**- 3200/4000A Wave Pro Door with Defeatable Interlock

Kit **WPEGRR50DR** – 5000A Wave Pro Door

Kit **WPEGRR50DRDI**- 5000A Wave Pro Door with Defeatable Interlock

These instructions do not cover all details or variations in equipment nor do they provide for every possible contingency that may be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser's purposes, the matter should be referred to the ABB Inc.

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