



01.4IB.51051B Electric Remote Racking Device (51899G10)

for use with PowIVac[®] CDR Circuit Breakers

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Signal Words

As stated in ANSI Z535.4-2007, the signal word is a word that calls attention to the safety sign and designates a degree or level of hazard seriousness. The signal words for product safety signs are “**Danger**”, “**Warning**”, and “**Caution**”. These words are defined as:

**DANGER**

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION**

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**CAUTION**

CAUTION, used without the safety alert symbol, is used to address practices not related to personal injury.

**NOTICE**

NOTICE is used to address practices not related to personal injury.

Qualified Person

For the purposes of this manual, a qualified person, as stated in NFPA 70E®, is one who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved. In addition to the above qualifications, one must also be:

1. trained and authorized to energize, deenergize, clear, ground, and tag circuits and equipment in accordance with established safety practices.
2. trained in the proper care and use of personal protective equipment (PPE) such as rubber gloves, hard hat, safety glasses or face shields, flash clothing, etc., in accordance with established safety practices.
3. trained in rendering first aid if necessary.

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Ch 1 General Information

WARNING

The equipment described in this document may contain high voltages and currents which can cause serious injury or death.

The equipment is designed for use, installation, and maintenance by qualified users of such equipment having experience and training in the field of high voltage electricity. This document and all other documentation shall be fully read, understood, and all warnings and cautions shall be abided by. If there are any discrepancies or questions, the user shall contact Powell immediately at 1.800.480.7273.

WARNING

Before any adjustment, servicing, part replacement, or any other act is performed requiring physical contact with the electrical working components or wiring of this equipment, the power supply must be disconnected. Failure to follow this warning may result in injury or death.

NOTICE

The information in this instruction bulletin is not intended to explain all details or variations of the Powell equipment, nor to provide for every possible contingency or hazard to be met in connection with installation, testing, operation, and maintenance of the equipment. For additional information and instructions for particular problems, which are not presented sufficiently for the user's purposes, contact Powell at 1.800.480.7273.

NOTICE

Powell reserves the right to discontinue and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.

A. SCOPE

The information in this instruction bulletin describes the following PowIVac® Electric Remote Racking Device and components for use with PowIVac CDR vacuum circuit breakers:

- 51899G10 - Electric Remote Racking Device Motor Assembly
- 51895G01 - Motor Control Box

B. PURPOSE

The information in this instruction bulletin is intended to provide information required to properly operate and maintain the PowIVac Electric Racking Device and components described in **Ch 1 General Information, A. SCOPE**.

This instruction bulletin provides:

1. Safety guidelines
2. General descriptions of the operation and maintenance of the PowIVac Electric Racking Device and components
3. Instructions for installation
4. Illustrations, photographs, and description of the equipment described in **Ch 1 General Information, A. SCOPE**

The illustrations and photos in this document are provided as general information to aid in showing component locations only.

All illustrations and photos are shown using deenergized equipment.

⚠ WARNING

Be sure to follow the appropriate safety precaution while handling any of the equipment. Failure to do so may result in serious injury or death.

To the extent required, the products described herein meet the applicable ANSI, IEEE, and NEMA Standards; however, no such assurance is given with respect to local codes and ordinances which may vary greatly.

C. INSTRUCTION BULLETINS AVAILABLE ELECTRONICALLY**NOTICE**

Changes to the instruction bulletin may be implemented at any time and without notice. Goto www.powellind.com to ensure use of the current instruction bulletin for the Powell equipment.

To contact the Powell Service Division call 1.800.480.7273 or 713.944.6900, or email info@powellservice.com.

For specific questions or comments pertaining to this instruction bulletin email documents@powellind.com with the Instruction Bulletin number in the subject line.



Ch 2 Safety

A. SAFE WORK CONDITION

The information in Section A is quoted from *NFPA 70E 2004 - Article 120, 120.1 Establishing an Electrically Safe Work Condition*.

120.1 Process of Achieving an Electrically Safe Work Condition

1. Determine all possible sources of electrical supply to the specific equipment. Check applicable up-to-date drawings, diagrams, and identification tags.
2. After properly interrupting the load current, OPEN the disconnecting device(s) for each source.
3. Wherever possible, visually verify that all blades of the disconnecting devices are fully OPEN or that drawout type circuit breakers are withdrawn to the fully disconnected position.
4. Apply lockout/tagout devices in accordance with a documented and established policy.
5. Use an adequately rated voltage detector to test each phase conductor or circuit part to verify they are deenergized. Test each phase conductor or circuit part both phase-to-phase, and phase-to-ground. Before and after each test, determine that the voltage detector is operating satisfactorily.
6. Where the possibility of induced voltages or stored electrical energy exists, ground the phase conductors or circuit parts before touching them. Where it could be reasonably anticipated that the conductors or circuit parts being deenergized could contact other exposed energized conductors or circuit parts, apply ground connecting devices rated for the available fault duty.

B. SAFETY GUIDELINES

Each user has the responsibility to instruct and supervise all personnel associated with usage, installation, operation, and maintenance of this equipment on all safety procedures. Furthermore, each user has the responsibility of establishing a safety program for each type of equipment encountered.

The safety rules in this instruction bulletin are not intended to be a complete safety program. The rules are intended to cover only some of the important aspects of personnel safety related to PowlVac® Electric Racking Device.

C. GENERAL

1. Only supervised and qualified personnel trained in the usage, installation, operation, and maintenance of the circuit breaker shall be allowed to work on this equipment. It is mandatory that this instruction bulletin, any supplements, and service advisories be studied, understood, and followed.
2. Maintenance programs must be consistent with both customer experience and manufacturer's recommendations, including service advisories and instruction bulletin(s). A well planned and executed routine maintenance program is essential for reliability and safety.
3. Service conditions and applications shall also be considered in the development of safety programs. Variables include ambient temperature; humidity; actual continuous current; thermal cycling; number of operations; interrupting duty; and any adverse local conditions including excessive dust, ash, corrosive atmosphere, vermin and insect infestations.

D. SAFETY LABELS

NOTICE

Warning and Caution labels are located in various places in and on the switchgear and on the circuit breaker removable element. Always observe these warnings and caution labels. Do NOT remove or deface any of these warning/caution labels.



Ch 3 Equipment Description

A. GENERAL

The PowIVac® Electric Racking Device is an accessory which enables circuit breakers to be racked into and out of switchgear from a distance. The accessory consists of a motor control box (Figure 1, a) and electric racking device assemblies (Figure 2).

Figure 1 Electric Racking Device

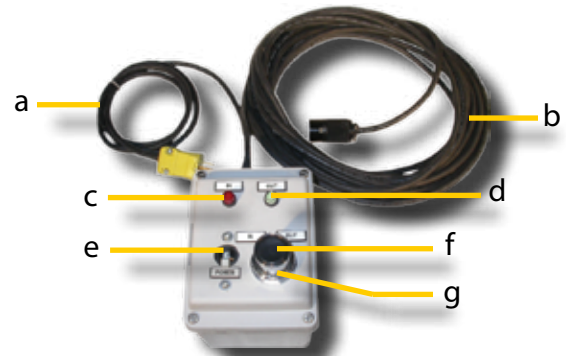


- a. Motor Control Box
- b. Electric Racking Device

B. MOTOR CONTROL BOX

The motor control box (Figure 2) supplies power enables the selection of operating modes for the electric racking device. The motor control box has a 50 foot long cord (Figure 2, b) with a plug that is inserted into the electric racking device twist lock receptacle (Figure 3, f). The length of cord enables the user to move to a safe distance from the circuit breaker during racking in and racking out procedures. The motor control box power supply cord is 6' long and plugs into a 110VAC 15A outlet (Figure 2, a).

Figure 2 Motor Control Box



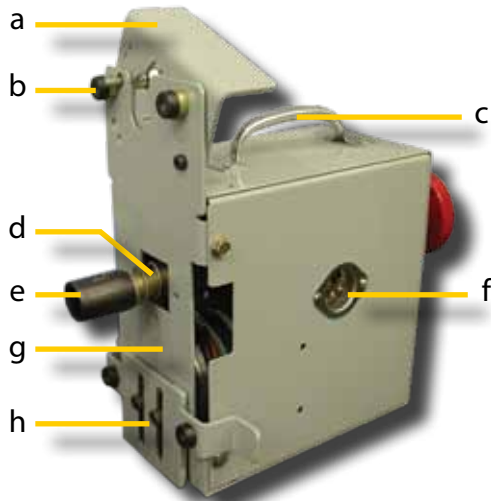
- a. Power Supply Cord
- b. Control Box Cord
- c. "IN" Indicator Light
- d. "OUT" Indicator Light
- e. Power Switch
- f. Push Button
- g. IN/OUT Selector Switch

C. ELECTRIC RACKING DEVICE

The electric racking device (Figure 1, b) installs on the switchgear compartment door. The racking device support latch (Figure 3, a) attaches to a lock pin (Figure 10, b) installed on the compartment door. The racking device drive socket (Figure 3, e) engages the circuit breaker racking mechanism through the compartment door racking shaft access opening (Figure 5, d). After the racking device is installed, the adjustment knob (Figure 4, b) must be turned until the racking device drive socket engages with the circuit breaker racking shaft.

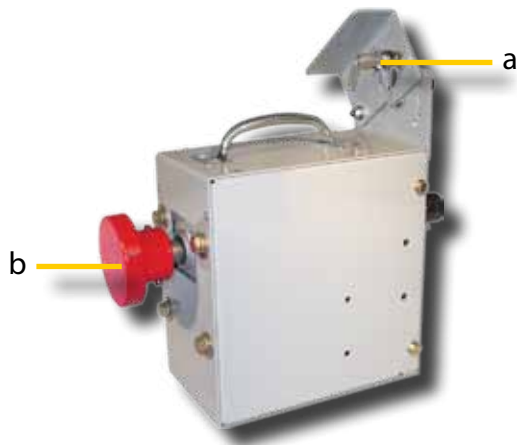
When the racking device is connected to the motor control box and energized, the drive socket operates the circuit breaker racking mechanism (Figure 6, b) during racking in and racking out procedures.

Figure 3 *Electric Racking Device (Receptacle Side)*



- a. Support Latch
- b. Recessed Bumpers
- c. Handle
- d. Drive Shaft and Spring
- e. Drive Socket
- f. Twist-Lock Receptacle
- g. Front Plate
- h. Slide Assembly

Figure 4 *Electric Racking Device (Lock Pin Side)*



- a. Latch Pin Lock
- b. Adjustment Knob

D. ELECTRIC RACKING DEVICE TYPES

Separate electric racking devices are designed for use with specific types of circuit breakers. Contact Powell Service Division to acquire the correct racking devices for specific circuit breakers.

E. ELECTRIC RACKING OPERATION


WARNING

Do NOT work on an energized circuit breaker. Follow circuit breaker safety guidelines and operating instructions provided in the specific circuit breaker instruction bulletin.

Attaching and operating the electric racking device can be accomplished by one person. When circuit breaker racking is required, the electric racking device engages the circuit breaker racking mechanism through the compartment door racking shaft access opening (Figure 5, d). The racking device is operated by the motor control box.

When racking in a circuit breaker, move the circuit breaker to the required switchgear location. Push the circuit breaker into the switchgear compartment until the anti-rollout latch (Figure 6, d) engages the switchgear rollout stop block.

For complete information on circuit breaker handling, insertion, and removal see the instruction bulletin for the circuit breaker in use.



Ch 4 Installation

A. RECEIVING

Upon receipt, remove any shipping material and inspect the electric racking device for damage that may have occurred during shipment. Check the equipment received against the shipping documents to ensure receipt of the complete shipment.

B. HANDLING

The electric racking device weighs 20 lbs. and the motor control box assembly weighs 5 lbs. The preferred method for moving the electric racking device and motor control box is to place them securely on a hand operated shop cart. When handling the electric racking device, personnel should securely grasp the device by its handle during movement and installation to avoid possible personal injury or damage to the electric racking device. Avoid dropping or hitting the electric racking device with hard objects.

Protect the motor control box and electric racking device motor assembly from contact with moisture. The device's electric components can be damaged and electric shock can occur if the devices are contaminated with moisture.

WARNING

Do not attempt to work with an electric racking device and motor control box if the electrical cords are damaged or if the devices have become wet. Using electrical equipment in or around water may cause electric shock and may result in injury to personnel and/or damage to equipment.

CAUTION

Protect the motor control box and the racking device from moisture. Failure to do so may cause damage to the equipment.

CAUTION

Do NOT handle or carry the racking device by the power cords. Damage to the power connections may cause an electrical short. The power cords should be inspected for any signs of damage before each use.

Figure 5 *Switchgear Compartment Door*



- a. *Compartment Door*
- b. *Support Lock Pin*
- c. *Circuit Breaker Racking Shaft Access Cover (Teardrop)*
- d. *Circuit Breaker Racking Shaft*



Figure 6 *Circuit Breaker Inside Switchgear Compartment*



- a. *Circuit Breaker in Compartment*
- b. *Circuit Breaker Racking Shaft*
- c. *Secondary Disconnect Receptacle*
- d. *Anti-Rollout Latch*
- e. *Compartment Floor*

C. STORAGE

Shipping and storage of electrical equipment requires measures to prevent the deterioration of the apparatus over a long unused period. The mechanical and dielectric integrity must be protected. Electrical equipment is designed for use in a variety of environments. When the equipment is in transit and storage, these design considerations are not fully functional. In general, the following measures must be considered.

1. Equipment designed for indoor installation must be stored indoors in a climate controlled environment to prevent condensation of moisture. Exposure to rain and the elements, even for a short period, can permanently damage the equipment. Space heaters within the equipment should be energized, if so equipped. Humidity controlling desiccant materials should be utilized when space heaters are not provided or cannot be energized. The temperature should be kept above 33°F/1°C and below 140°F/60°C. The relative humidity should be kept below 60% or a dew point of 15°C/59°F. The equipment should be stored in such a manner as to leave all doors and panels accessible for inspection. The equipment must be inspected on a routine basis to assure operational integrity.
2. Equipment designed for outdoor exposure may be stored either in indoor or outdoor storage locations. The equipment must be protected from airborne external contaminants if stored outdoors. Outdoor storage will also require additional care to maintain temporary covers over the openings and shipping splits. The equipment must be provided with control power to facilitate the energization of space heaters, as well as other temperature and humidity controlling equipment. The

temperature should be kept above freezing (>33°F/1°C) and below (<140°F/60°C). The relative humidity should be kept below 60% or a dew point of 15°C/59°F. The equipment should be stored in such a manner as to leave all doors and panels accessible for inspection. The equipment must be inspected on a routine basis to assure its integrity.

3. The auxiliary control devices, ship loose material and protective relays must also be protected. This includes items such as battery chargers, UPS systems, lighting, installation hardware and air conditioning. If prolonged storage is anticipated, humidity controlling desiccant materials should be utilized. Desiccant packets should be installed in all compartments and packing containers. from moisture and cement dust, as this combination has a very corrosive effect on many parts.

D. PREPARATION

CAUTION

Prior to using the Remote Racking Device, refer to the Instruction Bulletin supplied with the circuit breaker for complete instructions on inserting and removing the circuit breaker in to or out of the compartment.

- 1) *Support Lock Pin, Support Hanger, and Installation Template*

Note: *The circuit breaker must be removed from service when the support lock pin is installed.*

The lock pin and support hanger must be installed to support the electric racking device on the compartment door.



A template for placing the support hanger in the correct location is available. Refer to *Table A, Renewal Parts*.

When installed, the racking device support latch fastens onto the support lock pin, and the slide assembly engages the support hanger. The position of the racking device enables the drive socket to engage the circuit breaker racking shaft through the access door to perform racking procedures.

To install the lock pin and support hanger, follow directions accompanying the parts order. For information on ordering the support lock pin, support hanger, and template, See **Ch 7 Renewal Parts**.

2) *Testing and Inspection*

a. Electrical Operation Check

To pretest the equipment, insert the 50' cord from the box into the racking device locking receptacle. Then insert the motor control box power supply cord into a 110VAC 15A receptacle, and operate the box on the racking in and racking out settings while the device is not installed on the circuit breaker or compartment door.

3) *Electric Racking Device Inspection*

1. Inspect the electric racking device for proper lubrication, signs of wear, or damage. If plugs and wiring are damaged, return the equipment to Powell for repair.
2. Inspect the switchgear compartment to ensure that it is clean and clear of debris that might interfere with circuit breaker racking and travel within the compartment.

Ch 5 Operation

The instructions in this section are intended to explain procedures for using the electric racking device and the motor control box. For circuit breaker handling, insertion, and removal procedures, review the specific instruction bulletin for the specific circuit breaker in use.

⚠ WARNING

Do NOT work on an energized circuit breaker. Follow circuit breaker safety guidelines and operating instructions provided in the specific circuit breaker instruction bulletin.

A. INSTALLING AND OPERATING THE ELECTRIC RACKING DEVICE FOR RACKING IN

CAUTION

Before installing any circuit breaker into a compartment, the user MUST verify that the circuit breaker rating meets the metal-clad switchgear rating.

This section describes procedures for installing and operating the electric racking device for racking **IN**. For racking **OUT** procedures, refer to **Ch 5 Operation, B. INSTALLING AND OPERATING THE ELECTRIC RACKING DEVICE FOR RACKING OUT**.

- 1) *Installing the Electric Racking Device for Circuit Breaker Racking In*

CAUTION

Prior to inserting the circuit breaker into the circuit breaker compartment, ensure that the control circuits are deenergized.

CAUTION

Prior to inserting the circuit breaker into the circuit breaker compartment, ensure that the circuit breaker is OPEN and the mechanism is discharged.

1. Ensure the electric racking device support lock pin (Figure 10, b) and the support hanger (Figure 9, d) are installed on the switchgear compartment door. See **Ch 4 Installation, D. PREPARATION, 1) Electric Racking Device Support Lock Pin**.
2. Ensure the switchgear compartment control circuit is deenergized.
3. Move the circuit breaker to the required switchgear location. Open the compartment door and push the circuit breaker into the compartment until the anti-rollout latch engages the switchgear anti-rollout latch (Figure 6, d).
4. Insert the switchgear secondary disconnect device into the circuit breaker secondary disconnect receptacle (Figure 6, c).
- 5a. For non-arc resistant switchgear, perform the following steps:
 - Assemble the racking mechanism retainer assembly to the circuit breaker compartment.
 - Secure the racking drive shaft extension in place by placing the shaft retainer holder into the shaft retainer anchor, then lock the racking drive shaft extension in place using the wing nut.
- 5b. For arc resistant switchgear, close and latch the compartment door.

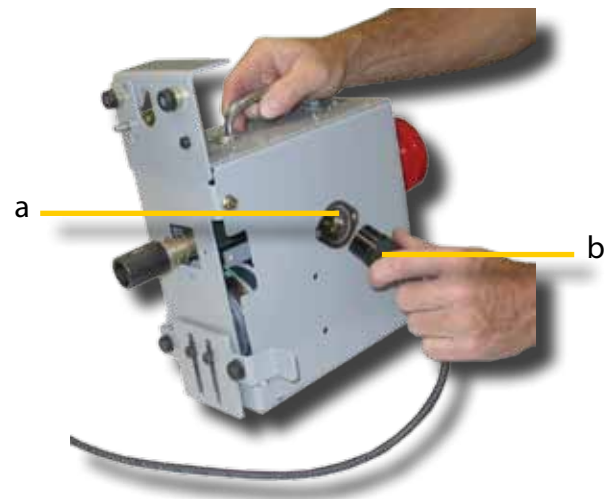


6. On the compartment door, rotate the teardrop shaped racking shaft access cover (Figure 5, c) clockwise to access the opening.
7. To prepare the electric racking device for operation, insert the plug of the motor control box cord into the electric racking device twist-lock receptacle (Figure 7). Turn the plug 1/4 turn clockwise to lock the plug in the receptacle.
8. Unlatch the racking device spring lock pin (Figure 8).
9. Grasp the electric racking device by the top handle with the drive socket toward the circuit breaker (Figure 9, a). Insert the drive socket into the racking shaft access opening until the socket engages the circuit breaker racking shaft. With the drive socket in place, position the racking device support latch onto the support lock pin (Figure 9, d).
10. Push down the top of the racking device support latch to close the latch (Figure 10, a).
11. Turn the spring lock pin to the lock position to secure the electric racking device to the support lock pin (Figure 11, a).

12. With the racking device locked onto the support lock pin, raise the racking device slide assembly. Position the racking device close to the cell door, and lower the slide assembly to engage the racking device support hanger (Figure 9, d).
13. With the racking device installed on the compartment door, turn the adjustment knob until it engages the drive socket with the circuit breaker racking shaft (Figure 13, a).
14. Physically move the motor control box to a distant area to operate the electric racking device.

The electric racking device is positioned and ready to be energized for racking the circuit breaker into the switchgear.

Figure 7 *Insert the Motor Control Box Cable Plug*



- a. Locking Receptacle
- b. Motor Control Box Power Cable Plug

CAUTION

To avoid damage to equipment, and ensure proper racking operation, the circuit breaker racking mechanism must be engaged by the racking socket before the electric racking device is operated. For proper operation, the racking device must be held securely by the support lock pin and the hanger support.

Figure 8 Unlatch the Racking Device Spring Lock Pin

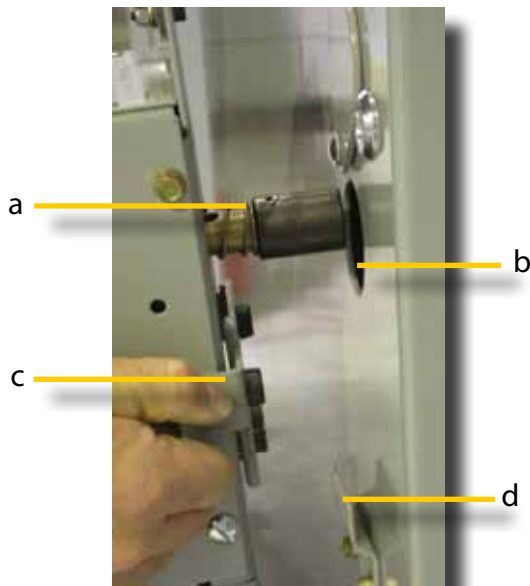


Figure 10 Push Down the Support Latch



- a. Support Latch
- b. Support Lock Pin

Figure 9 Insert the Drive Socket into the Racking Shaft Access Opening



- a. Drive Socket
- b. Circuit Breaker Racking Shaft Access
- c. Sliding Support
- d. Support Hanger

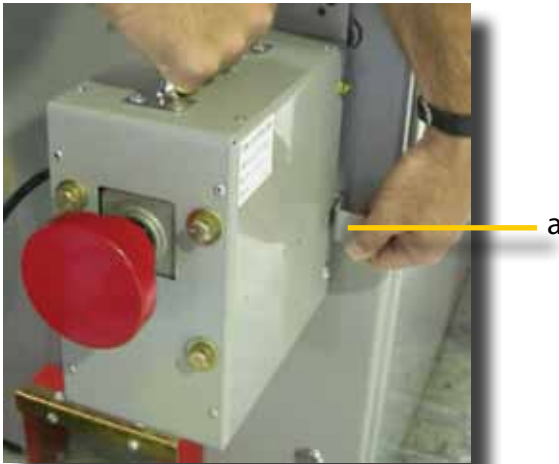
Figure 11 Turn the Spring Lock Pin to Secure the Racking Device on the Support Lock Pin



- a. Spring Lock Pin



Figure 12 Lift the Slide Assembly and Engage the Racking Device Support Hanger



a. Slide Assembly Support

Figure 13 Turn the Adjustment Knob to Engage the Racking Shaft with the Drive Socket



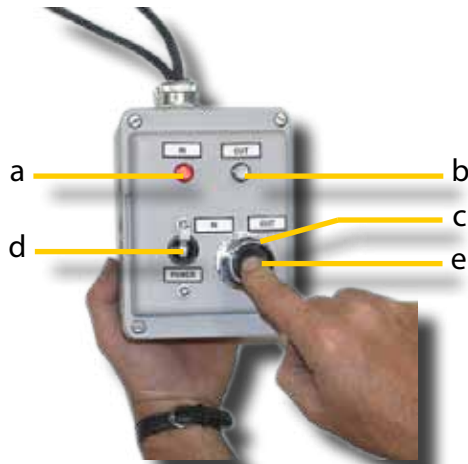
a. Adjustment Knob

2) Performing Circuit Breaker Racking In

Before racking in a circuit breaker, ensure the electric racking device is installed properly, refer to **Ch 5 Operation, A. INSTALLING AND OPERATING THE ELECTRIC RACKING DEVICE FOR RACKING IN, 1) Installing the Electric Racking Device for Racking In.**

1. Plug the motor control box power cord into a 110VAC 15A receptacle.
2. On the motor control box, move the power switch to the **ON** position (Figure 14, d).
3. On the motor control box, turn the selector switch to **IN** (Figure 14, c).
4. Depress the black push button on the selector switch (Figure 14, e). The red **IN** indicator lamp will illuminate. The electric racking device will begin to rack in the circuit breaker and will vibrate slightly.
5. When the circuit breaker is fully racked in, the remote racking device's torque limiter will begin to slip and there will be a clear clicking sound along with a vibration of the racking device. At this point, release the push button.
6. On the motor control box, move the power switch to the **OFF** position.
7. Unplug the motor control box power cord from the 110VAC 15A electric receptacle when the racking in procedure is successfully completed.

Note: To uninstall the electric racking device, see **Ch 5 Operation, C. UNINSTALLING THE ELECTRIC RACKING DEVICE.**

Figure 14 Operate Motor Control Box


- a. Racking IN Indicator Lamp
- b. Racking OUT Indicator Lamp
- c. IN/OUT Selector Switch
- d. Power Switch (ON) Position
- e. Push Button

B. INSTALLING AND OPERATING THE ELECTRIC RACKING DEVICE FOR RACKING OUT
1) Installing the Electric Racking Device for Racking Out

Note: The electric racking device drive socket is installed through the compartment door racking shaft access cover.

CAUTION

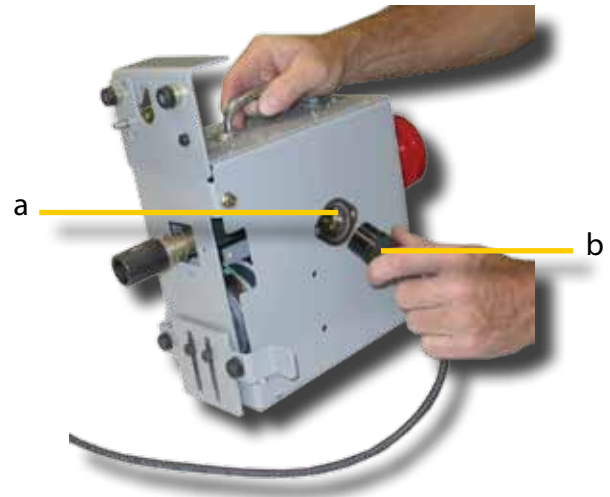
Before installing the electric racking device, ensure the circuit breaker contacts are in the open (tripped) position. This should be done by remotely sending a trip signal to the circuit breaker. The manual trip function on the circuit breaker and/or switchgear door should only be used if the remote electrical signal cannot be used.

1. Ensure the switchgear compartment is deenergized.
2. Ensure the electric racking device support lock pin (Figure 18, b) and the support hanger (Figure 17, d) are installed on the compartment door. See **Ch 4 Installation, D. PREPARATION, 1) Electric Racking Device Support Lock Pin.**
3. Move the electric racking device to the location where the circuit breaker is to be racked out of a compartment.
4. On the compartment door, rotate the teardrop shaped racking shaft access cover clockwise to access the opening (Figure 17, b).
5. To prepare the electric racking device for operation, insert the plug of the box cord into the electric racking device twist lock receptacle (Figure 15). Turn the plug 1/4 turn clockwise to lock in the plug in the receptacle.
6. Unlatch the racking device spring lock pin (Figure 16).
7. Grasp the electric racking device by the top handle with the drive socket toward the circuit breaker (Figure 17). Insert the drive socket into the racking shaft access opening until it engages the circuit breaker racking shaft. With the drive socket in place, position the racking device support latch onto the support lock pin (Figure 18).
8. Push down the top of the racking device support latch to close the latch (Figure 18, a).
9. Turn the spring lock pin to the lock position to secure the electric racking device to the support lock pin (Figure 19, a).



- With the racking device locked onto the support lock pin (Figure 18, b), raise the racking device slide assembly (Figure 20, a). Position the racking device close to the cell door, and lower the slide assembly to engage the racking device support hanger.

Figure 15 *Insert the Motor Control Box Cable Plug*



- Locking Receptacle
- Motor Control Box Power Cable Plug

CAUTION

To avoid damage to equipment, and ensure proper racking operation, the circuit breaker racking mechanism must be engaged by the racking socket before the electric racking device is operated.

- With the racking device installed on the compartment door, turn the adjustment knob until it engages the drive socket with the circuit breaker racking shaft (Figure 21, a).
- Physically move the motor control box to a distant area to operate the electric racking device.

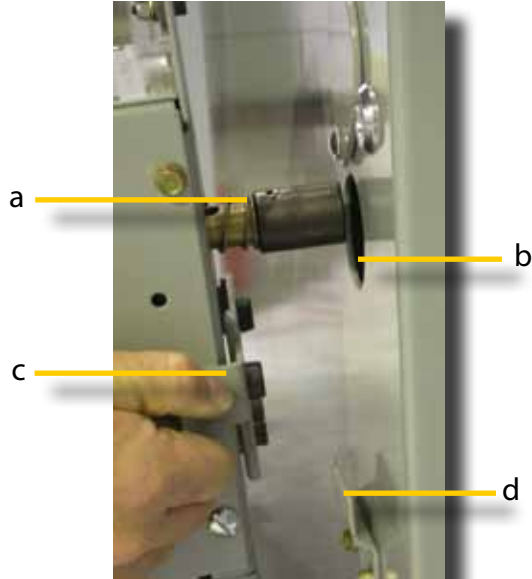
Figure 16 *Unlatch the Racking Device Spring Lock Pin*



The electric racking device is positioned on the switchgear compartment door (Figure 21) for racking out the circuit breaker.

Note: For racking out procedures, see **Ch 5 Operation, B. INSTALLING AND OPERATING THE ELECTRIC RACKING DEVICE FOR RACKING OUT, 3) Performing Circuit Breaker Racking Out.**

Figure 17 Insert the Drive Socket into the Racking Shaft Access Opening (Top View)



- a. Drive Socket
- b. Circuit Breaker Racking Shaft Access
- c. Sliding Support
- d. Support Hanger

Figure 18 Push Down the Support Latch



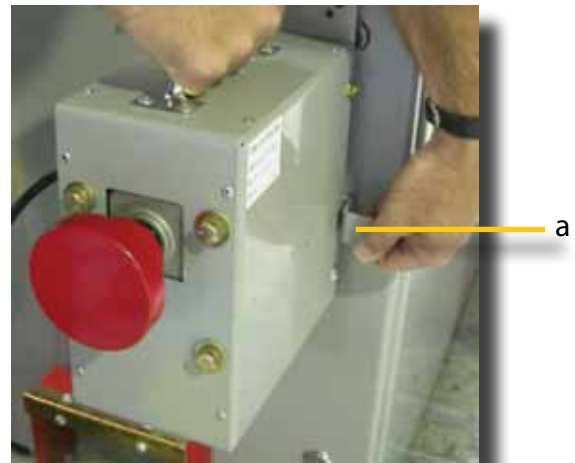
- a. Support Latch
- b. Support Lock Pin

Figure 19 Turn the Spring Lock Pin to Secure the Racking Device on the Support Lock Pin



- a. Spring Lock Pin

Figure 20 Lift the Slide Assembly and Engage the Racking Device Support Hanger



- a. Slide Assembly Support



Figure 21 Turn the Adjustment Knob to Engage the Racking Shaft with the Drive Socket



a. Adjustment Knob

Figure 22 Circuit Breaker Inside Switchgear Compartment (Door Open)



a. Circuit Breaker in Compartment
 b. Racking Mechanism
 c. Secondary Disconnect
 d. Anti-Rollout Latch
 e. Compartment Floor

2) Performing Circuit Breaker Racking Out

CAUTION

Do not work on an energized circuit breaker. Follow circuit breaker safety guidelines and operating instructions provided in the specific circuit breaker instruction bulletin.

CAUTION

Before installing the electric racking device, ensure the circuit breaker contacts are in the open (tripped) position. This should be done by remotely sending a trip signal to the circuit breaker. The manual trip function on the circuit breaker and/or switchgear door should only be used if the remote electrical signal cannot be used.

Before performing racking out procedures, ensure the electric racking device is installed properly, refer to **Ch 5 Operation, A. INSTALLING THE ELECTRIC RACKING DEVICE FOR RACKING OUT.**

1. Plug the motor control box power cord into a 110VAC 15A receptacle.
2. On the motor control box, move the power switch to the **ON** position (Figure 14, d).
3. On the motor control box, turn the racking direction selector to **OUT** position (Figure 14, c).
4. Depress the black push button on the racking direction selector and the green **OUT** indicator lamp comes on (Figure 14, b). The electric racking device proceeds to rack out the circuit breaker and will vibrate slightly.

5. When racking out of the circuit breaker is complete, electric racking device motor will clutch out. As clutch out occurs, there will be a loud popping noise, and the racking device will vibrate strongly. At this point, release the black push button.
 6. On the motor control box, move the power switch to the **OFF** position.
 7. Unplug the motor control box power cord from the 110VAC 15A electric outlet when the racking in procedure is successfully completed.
7. To disconnect the electric racking device plug, twist the plug 1/4 turn counterclockwise and pull the plug out of the racking device (Figure 15).

To uninstall the electric racking device, refer to **Ch 5 Operation, C. UNINSTALLING THE ELECTRIC RACKING DEVICE.**

C. UNINSTALLING THE ELECTRIC RACKING DEVICE

CAUTION

Prior to removing the electric racking device from the circuit breaker compartment, make sure that the control circuits are deenergized.

1. Ensure the racking device is deenergized by disconnecting the motor control box power cord from the 110VAC 15A receptacle.
2. Grasp the racking device handle to secure it while removing it from the compartment door.
3. On the racking device, release the spring lock pin by pulling it away from the latch and turning the pin to release it (Figure 19).
4. Lift the racking device support latch to release the circuit breaker support lock pin (Figure 18, a).
5. Raise the slide assembly to release it from the support hanger (Figure 20).
6. Pull the electric racking device straight out of the racking access hole to avoid damage to the circuit breaker or the racking device (Figure 17).



Ch 6 Maintenance

A. GENERAL

A regular maintenance schedule should be established to obtain the best service and reliability from the electric racking device.

Actual inspection and maintenance will depend on individual application conditions such as number of racking operations, time between uses, and storage conditions. When the electric racking device has been in storage for an extended period of time, it must be inspected and cleaned before being used. See **Ch 4 Installation, C. STORAGE and D. PREPARATION, 3) Electric Racking Device Inspection.**

A permanent record of maintenance work and inspections should be kept. The degree of record detail depends on the operating conditions. The record should include the dates and results starting from the date the device is first put into service. Dates and results of inspections and routine maintenance activities should be recorded.

B. INSPECTION AND CLEANING

Inspect the electric racking device for loose or damaged hardware or parts. Tighten any loose hardware, and replace missing or damaged hardware or parts.

When necessary, remove loose dust and dirt from the electric racking device with a vacuum cleaner, a clean, dry cloth, or an industrial type wiper. DO NOT use an air hose to clean the electric racking device. Dirt or grit may be blown into critical parts, including bearings, which will cause excessive wear of the parts.

C. LUBRICATION

Apply Rheolube grease on the drive shaft, under the spring, to prevent rusting and help ensure proper operation.

Ch 7 Recommended Renewal Parts

A. ORDERING INSTRUCTIONS

1. Order Renewal Parts from Powell at www.powellind.com or call 1.800.480.7273.
2. Always specify the complete nameplate information including:
 - Device Type
 - Serial Number
 - Rated Voltage
 - Rated Amps
3. Specify the quantity and description of the part and the instruction bulletin number. If the part is in any of the recommended renewal parts tables, specify the catalog number. If the part is not in any of the tables, a description should be accompanied by a marked illustration from this instruction bulletin, a photo or simply submit a sketch showing the part needed.

Table A Replacement Parts

Part Name	Part Number
Close Door Electric Racking Hanger Kit ¹	49492G00000043
Layout Template	49492P00000627
PowlVac® Lubrication Kit	Powlube-102

Note: 1) Each kit will need to be ordered separate for each breaker door.



01.4IB.51051B Electric Remote Racking Device (51899G10)

for use with PowlVac® CDR Circuit Breakers

January 2012