



EATON

Universal Remote Power Racking System (RPR-2)

For Low and Medium Voltage Power Circuit Breakers

- Finger-Touch Vertical Adjustment
- Corrosive Resistant Structure
- Easy Cell Positioning
- Balanced Weight Distribution
- Universal Design

Arc Flash and Personal Injury

Electric arcs result from thermal ionization that occurs when current flow is interrupted by the separation of conductors. Thermal ionization can generate temperatures as high as 35,000° F. Conductor materials melt into metal vapor and the surrounding air is ionized. If the arc is outside the interrupting chamber of a circuit breaker, then a violent explosion occurs resulting in an inferno of ionized gases, molten debris, metal shrapnel, and a flash of light (Arc Flash). When arc flash initiates in a switchgear cabinet, the rapidly escalating pressure will dislodge compartment doors and side sheets of the switchgear and turn hardware into high-speed projectiles.

Arc Flash levels are a function of circuit voltage, maximum available short circuit current at the point of flashover, conditions of confinement and the distance between the point of flashover and the point of measurement. Many Arc Flash incidences with LV and MV switchgear occur during the process of inserting and removing (racking) Power Circuit Breakers in switchgear cubicles. Personnel are typically within two feet of the front of the circuit breaker during the racking process and this close proximity to an arc flash can cause serious injury. Published records



Personal Protective Equipment Required for ARC Flash Exposure

indicate over 2000 people are treated annually in burn centers from exposure to arc flash and some result in death. A company's financial exposure is rarely less than \$100,000 for medical care and insurance claims per incident. NFPA 70E provides guidance for the requirements of personal protective equipment (PPE) to protect personnel from arc flash exposure. PPE for high levels of Arc Flash can be bulky, hot and uncomfortable. This may dissuade personnel from wearing proper protection. An arc flash occurrence is definitely a time when you want to be "dressed for the occasion".

The best way to limit exposure to Arc Flash during the process of racking power circuit breakers is to put more distance between the person and the possible point of exposure.



Universal Remote Power Racking System (RPR-2)

Safety Solution

Eaton's RPR-2 provides a means of remotely racking most power circuit breakers that utilize the rotation of a shaft for insertion and removal. The person can be 25 feet or more away from the switchgear door during the racking process. This allows personnel to wear



Racking 50-DHP-VR

a lower level of PPE (increased worker comfort and mobility) while operating the RPR-2 from an increased distance from the breaker. Since personnel can be outside the flash protection boundary while operating the RPR-2, the circuit breaker door does not have to be closed during the racking process. Closed door racking is possible with many designs, however structure modifications may be necessary.

Customer surveys have shown that any remote racking device must:

- Be easily and quickly setup
- Require minimum programming
- Be portable and easy to maneuver
- Be capable of racking numerous manufacturers' models of circuit breakers

The RPR-2 system is the solution that provides the value customers requested. Contact your nearest Eaton representative and see the system built from customers' ideas.



Close Up of Lower Portion of Base

■ **Easy Cell Positioning**

Unlike an awkward "hand truck" positioning system, the Universal Remote Power Racking System (RPR-2) simply rolls down the switchgear aisle.

■ **Balanced Weight Distribution**

The RPR-2 has a consistent center of gravity. This is important when racking breakers located in the higher positions of switchgear structures.

■ **Small Footprint**

Allows the system to be easily moved through openings as narrow as 30 inches and can make a full 360° rotation in 36 inches.



Easy Power Module Adjustment

■ **Finger-Touch Vertical Adjustment**

Vertical height adjustment is achieved without any motors, gear drives or winches; simply lift up or push down on the Power Module and the unit responds.

■ **Locking Base and Power Module**
A brake prevents movement during the racking process. The Power Module can also be locked for transport.



U-Joint

■ **Semi-Rigid Universal Joint**

The Semi-rigid universal joint allows racking with horizontal misalignment of approximately one inch.



Eaton Stack Light

■ **Status Indicator Lights**

A three-color Eaton Stack Light is mounted on the Power Module as a status indicator for the operator or as a warning for others during the racking process.

■ **Corrosive Resistant Structure**

Materials are selected to be corrosive resistant when applied in usual service conditions as defined in IEEE/ANSI C37 standards.

■ **Horizontal Racking Pressure**

The RPR-2 can apply up to 10 pounds of positive pressure while racking breakers.



Racking 50-DHP-VR

■ **Universal Design**

The RPR-2 is capable of racking most two-high medium voltage and four-high low voltage power circuit breakers. Breakers must have a screw-type racking system that requires rotary motion to rack the breakers.



Remote Operators Pendant & Cable

■ **Removable Pendant and Cable**

Each system comes standard with a remote operators pendant (1-insert push-button, 1-remove push-button and 1-indicating light) and a 25 ft. control cable. Control cable extenders are available.

■ **Automatic Horizontal Traversing**

The Universal Remote Power Racking System can traverse horizontally up to 15 inches.



Power Module Display

■ **Power Module**

The Power Module has adjustable speed control with a jog function and can deliver racking torque up to 100 ft-lbs. Each standard control system can handle up to eight pre-selected breakers and does not require complex programming for operation. Simply select the breaker type and start racking. More complex control systems are available to increase the number of breakers and for more complex torque monitoring.

■ **Electrical & Mechanical Torque Limit**

Selecting the breaker type determines the maximum torque delivered to the breaker during insertion to prevent damage to the breaker and cell. The torque output delivered to the racking shaft is monitored electrically. A built-in mechanical torque-limiting device serves as a back-up to prevent damage to the breaker's racking system.

■ **Power Requirements**

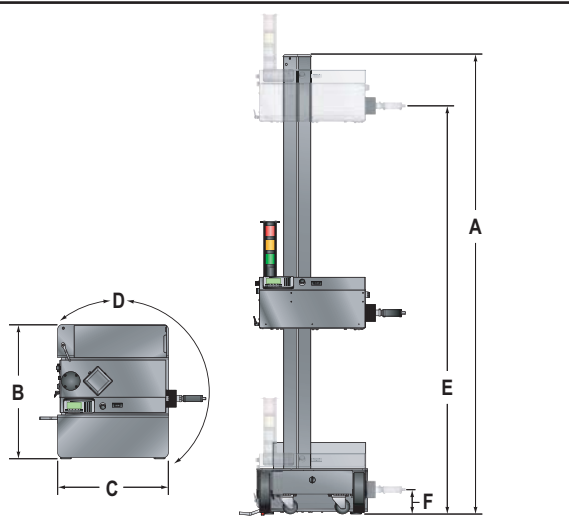
The Power Module is fed by an integrated PowerWare Uninterruptible Power Supply (UPS), which connects to a standard 120 VAC, 15 Amp receptacle.

■ **Quality Management System**

Every RPR-2 is designed, manufactured and tested in an ISO9001:2000 certified facility.

RPR-2 Dimensional Data	
Height**	A = 92"
Width	B = 26"
Depth	C = 24"
360° Rotational Clearance	D = 36"
Max. Racking Height**	E = 78"
Min. Racking Height	F = 4.5"
Weight	300 lbs*
* Includes On-Board UPS System	
** Maximum Height Shown (Shorter Models Available)	

Remote Power Racking Dimensions



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