

# CBS ArcSafe®

*Distance Is Safety®*

A Group CBS Company

# Installation and Operation

## RSA-175E

For FPE M Frame 150-800A

Includes HM, HMN, NM



**Distance is Safety®**

WHAT STANDS  
BETWEEN YOU AND  
ARC-FLASH DANGER?

**WE  
DO.**

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Rev. 9/22/2017

## More Products by CBS ArcSafe®

### **RRS-1 – Universal Remote Racking System (Rotary)**

The CBS ArcSafe® RRS-1 is a universal remote racking system capable of remotely installing and removing rotary style draw out circuit breakers without requiring any modification to the existing switchgear. Operation of the simple to use RRS-1 is quite intuitive and requires only minimal setup. When used properly, the RRS-1 allows technicians to remain outside of the arc flash boundary during the potentially dangerous racking operation.

### **RRS-2 – Universal Remote Racking System (Non-Rotary)**

The CBS ArcSafe® RRS-2 is a universal remote racking system capable of remotely installing and removing non-rotary style draw out circuit breakers without requiring any modification to the existing switchgear. Operation of the simple to use RRS-2 is quite intuitive and requires only minimal setup. When used properly, the RRS-2 allows technicians to remain outside of the arc flash boundary during the potentially hazardous racking operation.

### **RRS-3 – Application Specific Remote Racking System (Rotary and Non-Rotary)**

The CBS ArcSafe® RRS-3 product line is made up of various application specific remote breaker racking devices. Each standalone system allows service personnel to remotely install and remove a particular type of circuit breaker safely while stationed safely outside of the arc flash boundary during the potentially dangerous operation. The lightweight and compact design of the RRS-3 systems makes them ideal for hard to access areas where space is at a premium.

### **RRS-4 – PLC Based Universal Remote Racking System (Rotary)**

The CBS ArcSafe® RRS-4 universal remote racking system is an updated PLC based version of the best selling RRS-1. The dual mode, source programmable, PLC based control system offers two different operating modes to choose from based on user preference or the application. The RRS-4 is capable of remotely installing and removing rotary style draw out circuit breakers without requiring any modification to the existing switchgear, allowing users to remain outside of the arc flash boundary during the potentially hazardous racking operation.

### **RSA – Remote Switch Actuator**

The CBS ArcSafe® Remote Switch Actuator (RSA) product line is made up of various application specific remote operating devices. These products allow service personnel to remotely perform all aspects of an operation for a particular type of electrical equipment from outside the arc flash boundary – reducing or eliminating the possibility of serious injury or death resulting from an arc flash.

### **RSO – Remote Switch Operator**

During a remote operation, the CBS ArcSafe® RSO functions as both the power supply and user interface for the device being remotely operated by the user. When paired with an applicable CBS ArcSafe® device, this portable standalone system allows service personnel to remotely perform a racking or switching procedure from outside the arc flash boundary – reducing or eliminating the possibility of injury or death resulting from an arc flash

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# 1 Installation

## DANGER!

Before servicing any breaker, make sure that it matches the breaker discussed. If the breaker does not match the breaker described above, please call CBS ArcSafe® for more information.

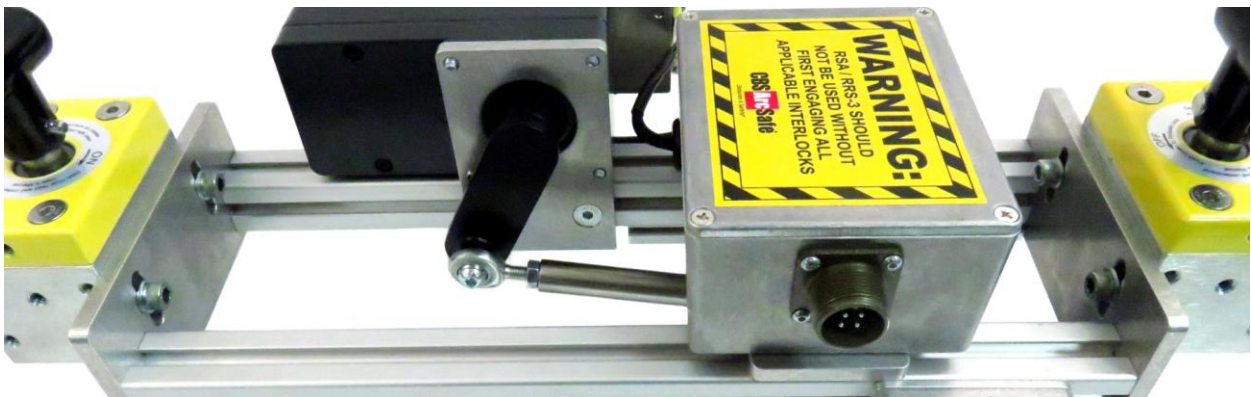
## ATTENTION!

The location of certain items such as mimic bus, stickers, and/or placards may interfere with the proper installation of the RSA. Please remove or reposition these items before installing the RSA.

1. Ensure that the breaker is free from obstructions that may interfere with proper installation of the RSA
2. Position the actuator on the RSA to match the breaker state, prior to installation. See the Operation section on how to operate the RSA.
  - a. If the breaker is OFF and needs to be turned ON, then the actuator needs to be fully extended



- b. If the breaker is ON and needs to be turned OFF, then the actuator needs to be fully retracted.



- c. If the breaker has tripped and needs to be reset, jog the actuator arm by hand until the switch fits between the rollers.

3. Position the RSA on the breaker, ensuring that the locator on the RSA aligns with and wraps around the left edge of the breaker escutcheon (taking the ON side of the breaker as UP), as indicated below.



4. Ensure the magnets are fully seated against the breaker door and then turn the handles of the twist-lock magnets 180° to lock the RSA in place.  
The RSA is now ready for operation.



## 2 Operation

### ATTENTION!

Please ensure that all cables are clear of moving parts. Failure to do so may result in damage to cables and/or actuator.

### ATTENTION!

Please ensure that the batteries to the RSO-I AR are fully charged or that the unit is plugged into AC power.

For detailed instructions on the operation of the RSO-I AR please see the RSO-I AR Manual.

1. Ensure that the RSA is properly installed. See the Installation section for detailed instructions.
2. Plug the RSO-I AR into the motor control box.
3. Exit the arc flash boundary
4. Turn the power switch on the RSO-I AR to the ON position.
5. Ensure that the Auto Retract (AR) function is OFF
6. Press and hold CLOSE to turn ON the breaker.
7. Press and hold TRIP to turn OFF the breaker.



### ATTENTION!

If the breaker has tripped and must be RESET, jog the RSA by hand or with the RSO to approximately the middle of travel to fit properly over the breaker handle, then press and hold TRIP to RESET the breaker.

## 3 Adjustments

The RSA comes adjusted from the factory to fit most common configurations, and should not need to be adjusted in most cases. However, if adjustments do need to be performed, it is recommended that they be done on de-energized and isolated equipment to prevent possible damage or injury.

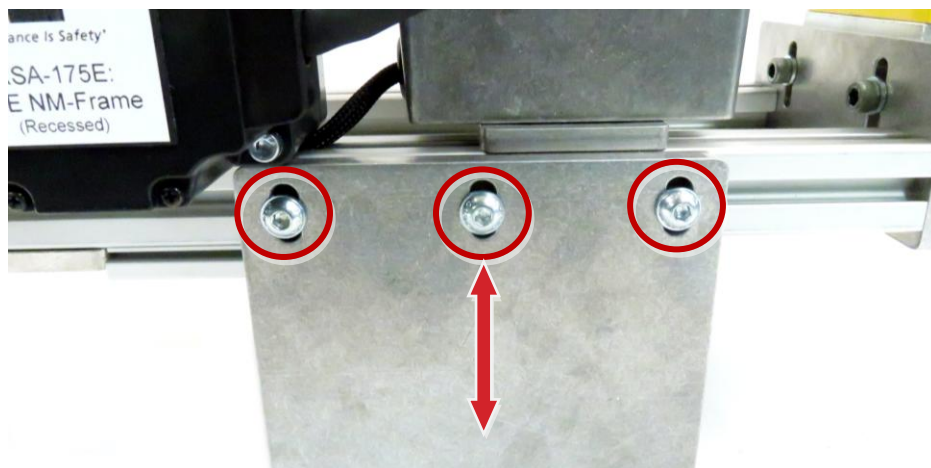
### 3.1 Operator Depth

The operator on the RSA can be adjusted to accommodate some differences in the depth of the switch housing.

1. Loosen the two bolts on each magnet mount plate, as indicated below.



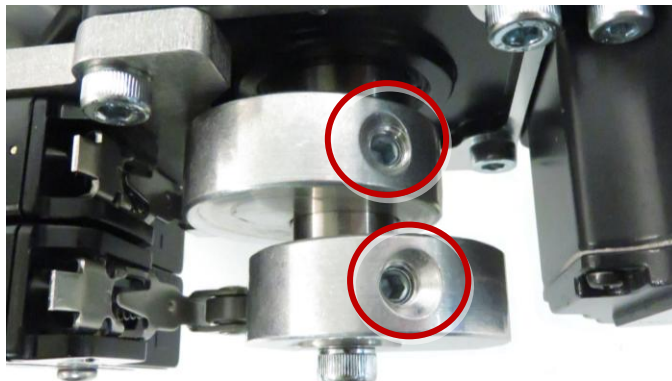
2. Attach the RSA as described in the Installation section.
3. Slide the operator in or out so the RSA is properly aligned and positioned on the switch.
4. Re-tighten the bolts from Step 1
5. If the locator no longer fits to the breaker escutcheon as described in the Installation section, loosen the bolts on the locator, as indicated below, and carefully slide it down until it sits flush to the side of the breaker escutcheon, as described in the Installation section.



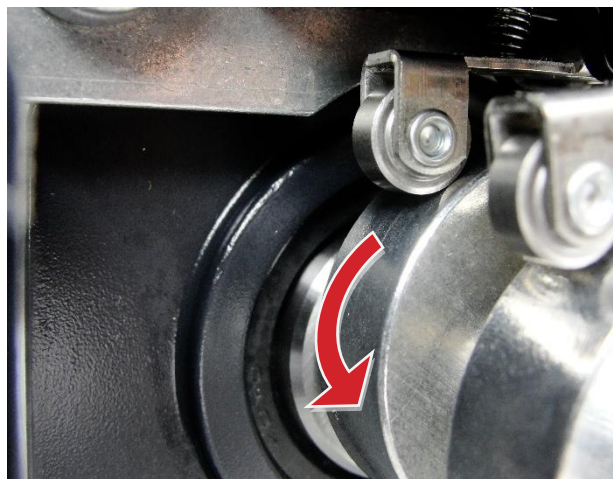
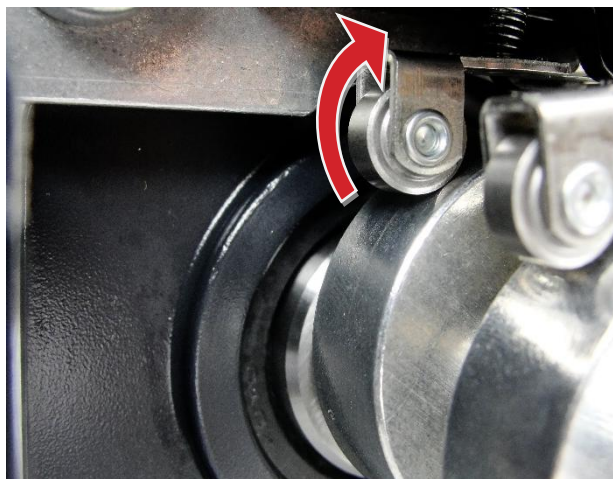
## 3.2 Travel Adjustment

The travel length for the motor arm may be adjusted to avoid damage to the switch.

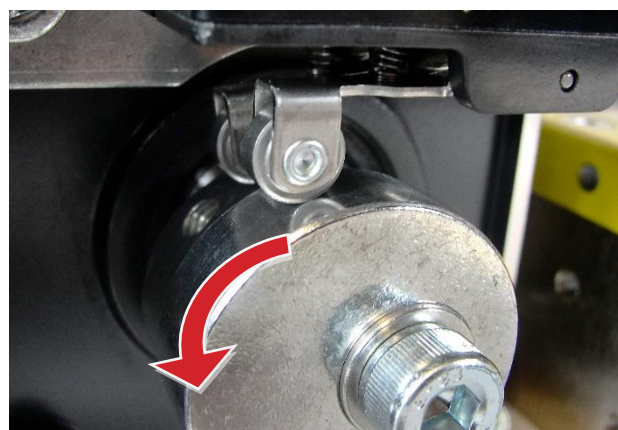
1. Loosen the lock screws on the backs of the two switch cams.



2. Install the RSA, as described in the Installation section
3. With the RSA arm and breaker in the OFF position, rotate the inner limit switch cam until the limit switch is undepressed and clicks slightly, then rotate the cam back onto the switch until another slight click is heard, and the switch is depressed. Re-tighten the lock-screw on the cam.

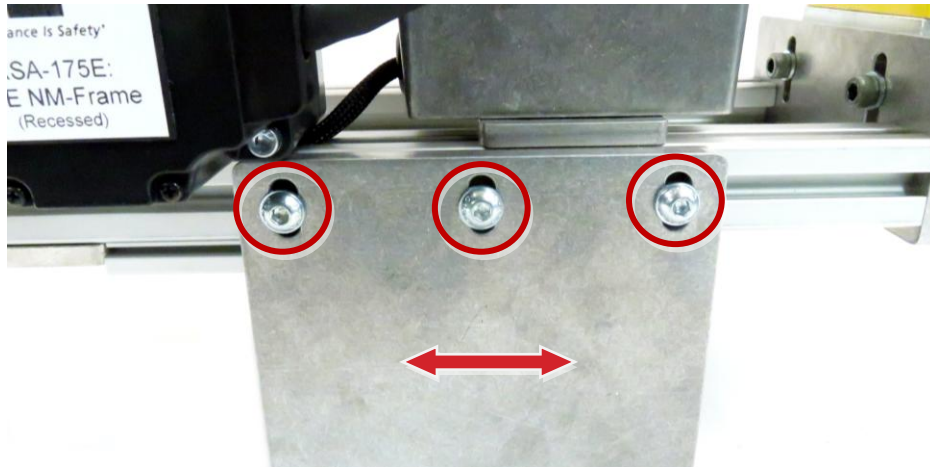


4. With the RSA charging arm and breaker in the ON position, rotate the outer limit switch cam in the direction of travel for the arm, until a slight click is heard. Re-tighten the lock screw.



### 3.3 Locator Adjustment

1. Loosen the two bolts holding the locator in place, as indicated below.



2. Install the RSA as described in the Installation section.
3. During installation, slide the locator as necessary so that the breaker handle fits into the handle operator on the RSA.
4. Re-tighten the bolts on the locator to fix it in place.

#### ATTENTION!

After adjusting the locator position, it may be necessary to re-adjust the travel of the RSA. See Section 3.2: Travel Adjustment for further information.











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**DANGER!**

Ensure that personnel using this equipment are adequately trained in the operation of the switchgear they are planning to work with; that they are correctly stationed outside the arc flash boundary; and that they comply with all applicable Federal, State, Local, and In-house safety regulations and procedures. Attention should be given to distance, angle, and personal protective equipment (PPE).