

# CBS ArcSafe®

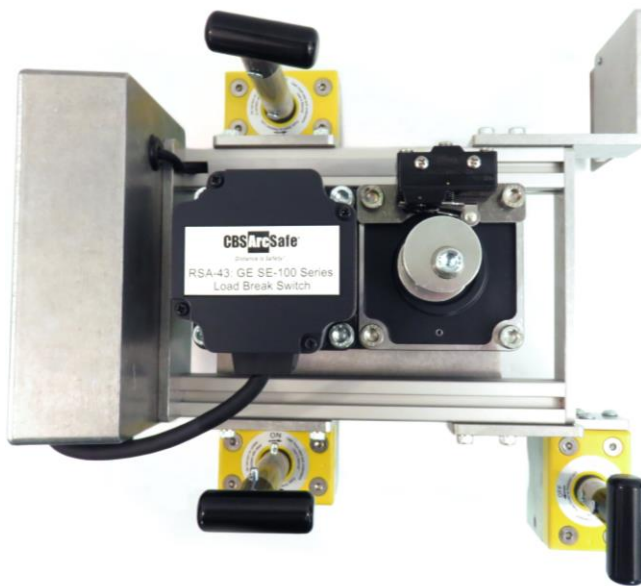
*Distance Is Safety®*

A Group CBS Company

# Installation and Operation

## RSA-43

GE SE-100 Series Load Break Switch  
600-1200A 5kV/15kV



**Distance is Safety®**

WHAT STANDS  
BETWEEN YOU AND  
ARC-FLASH DANGER?

**WE  
DO.**

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Rev. 12/4/2017

## 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.

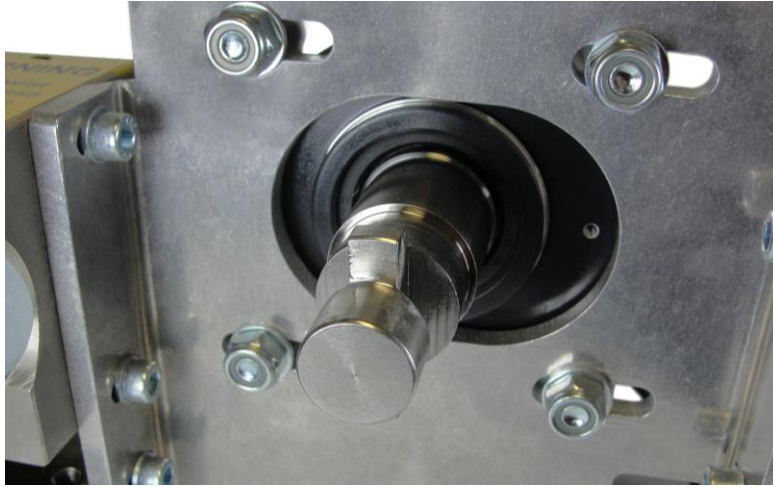
1. Ensure that the breaker is free from any obstruction that may interfere with the proper installation of the RSA.



2. Rotate the motor shaft to a position where the tangs are aligned vertically. This will ensure that the RSA will fit properly into the switching mechanism.

## NOTE:

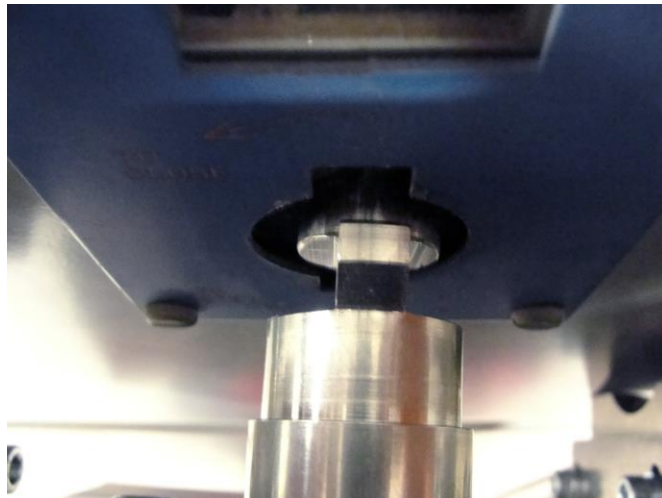
The RSO-IIID device may be used to rotate the motor shaft to the proper orientation with the use of the "JOG" function.



3. Place the RSA against the cabinet door, ensuring the stainless steel locator plates on the right side of the device are aligned to the edge of the cabinet, as shown in the image below.



4. Make sure that the motor shaft engages the switching mechanism, as shown in the image below.

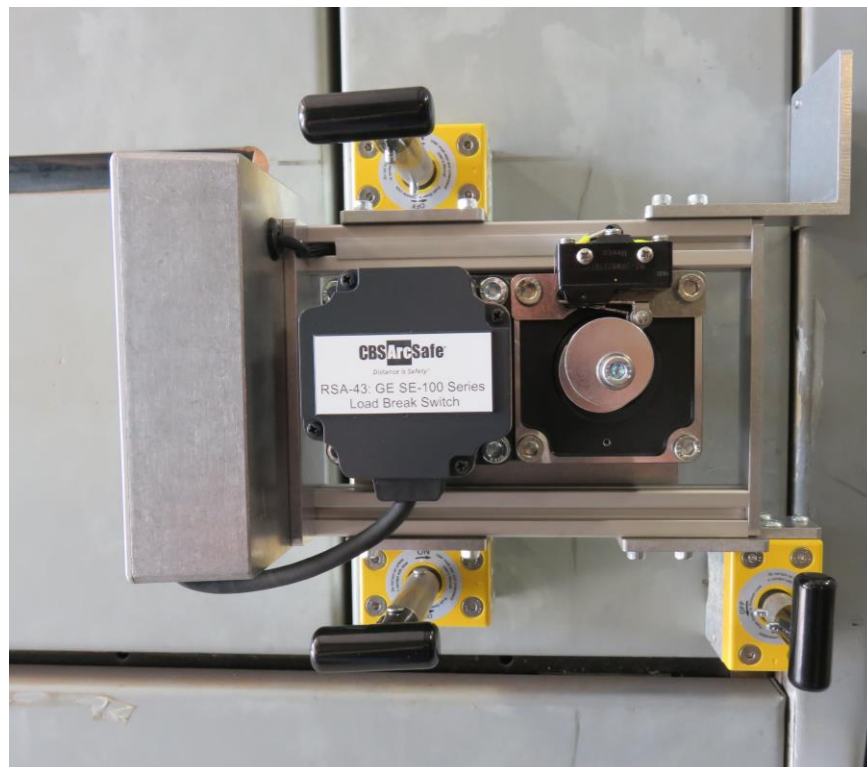


5. If the gear to be remotely operated has a door latch configuration similar to the following figure where the head of the door latch bolt interferes with the RSA device, the bolt and/or washers must be removed prior to RSA installation



Remove this bolt if it interferes with placement of the RSA.

6. Secure the RSA to the breaker by turning the handles of the two magnets 180 degrees clockwise. The RSA is ready for remote operations.



## 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 set according to the placard on the RSA. If not specified, leave AR turned OFF.
6. Press and hold CLOSE to turn ON the breaker.
7. Press and hold TRIP to turn OFF 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.

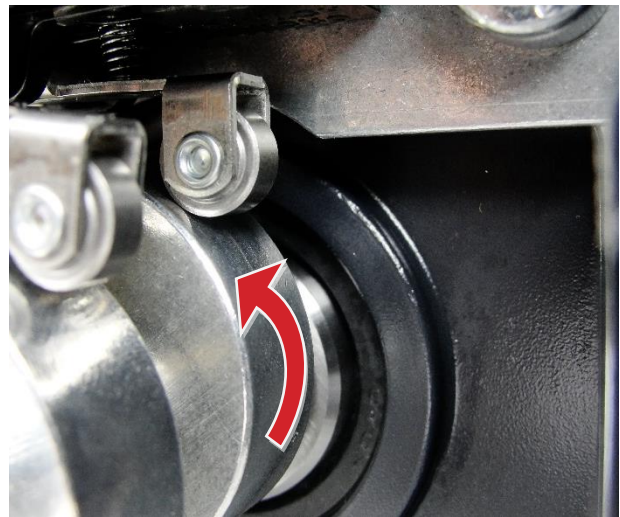
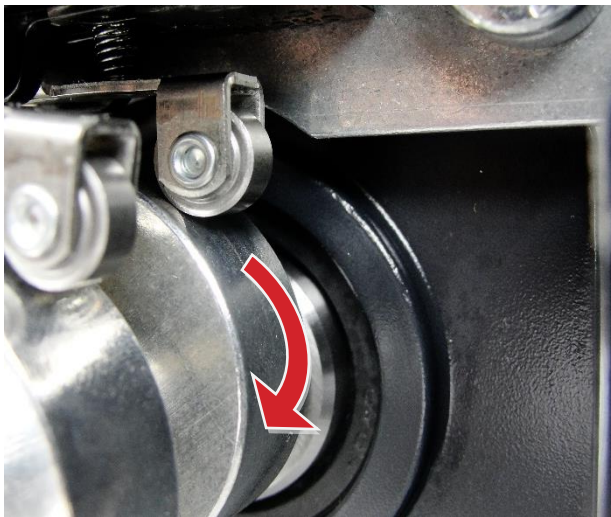
### 3.1 Travel Adjustment

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

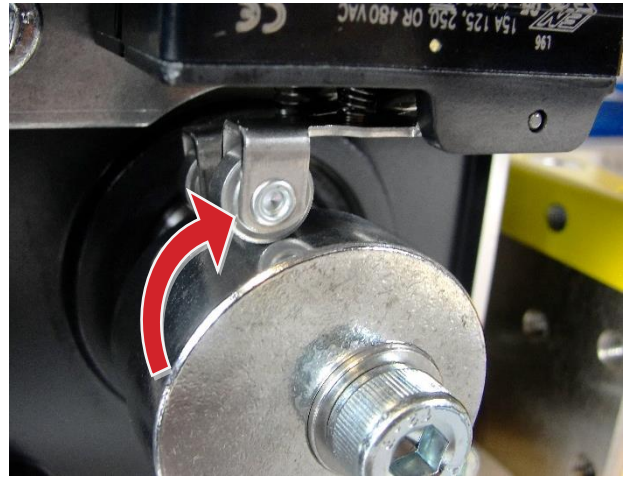
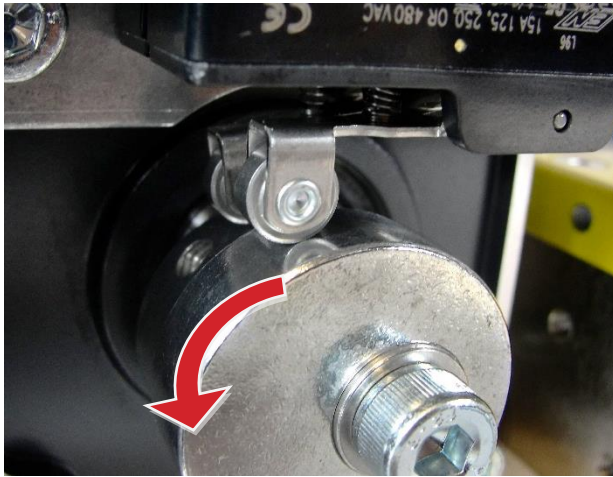
1. Loosen the lock screws on the backs of the two switch cams.



2. With the breaker in the OPEN position, rotate the inner limit switch cam in the opposite direction of travel 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.



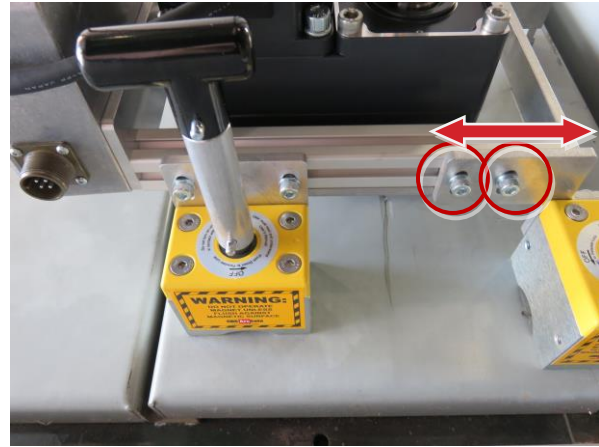
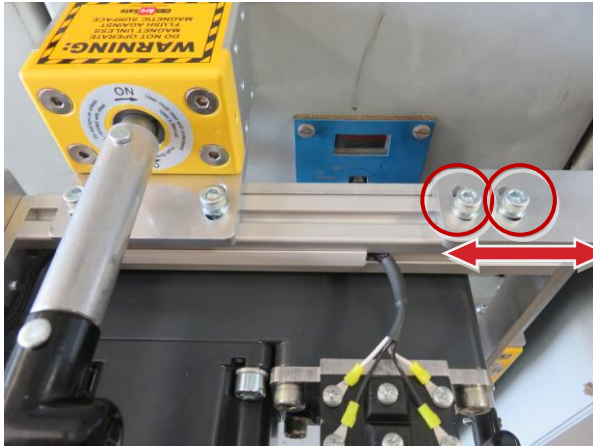
3. With the breaker in the CLOSED position, rotate the outer limit switch cam in the opposite direction of travel until the limit switch is undepressed and clicks slightly, then rotate the cam back onto the switch until another slight click is heard, and the switch is depressed. Re-tighten the lock-screw on the cam.



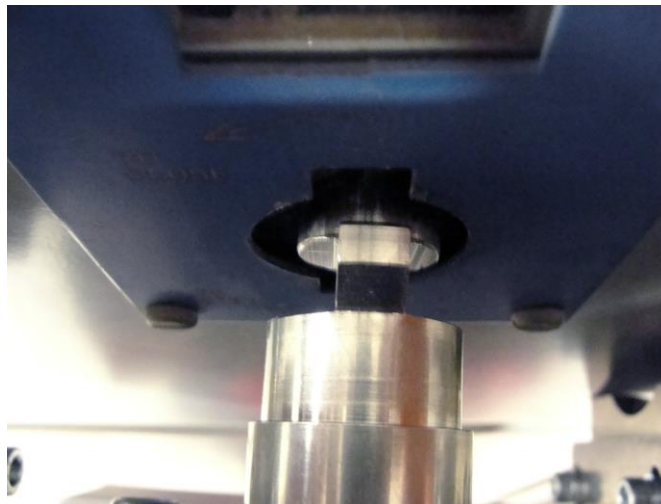


## 3.2 Actuator Alignment

1. Loosen the bolts on the two plates holding the locators, as indicated below.



2. Install the RSA as described in the Installation section of this manual. During installation, slide the motor assembly left or right until the motor shaft engages the switching mechanism, as described in the Installation section.

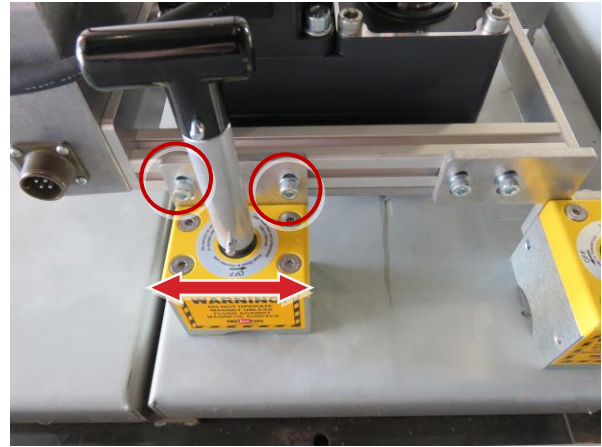


3. Re-tighten the bolts loosened during adjustment.

### 3.3 Magnet Position Adjustment

The positioning of the magnets can be adjusted to accommodate some obstructions on the switchgear.

1. Loosen the bolts on each magnet plate to be adjusted, as indicated below.

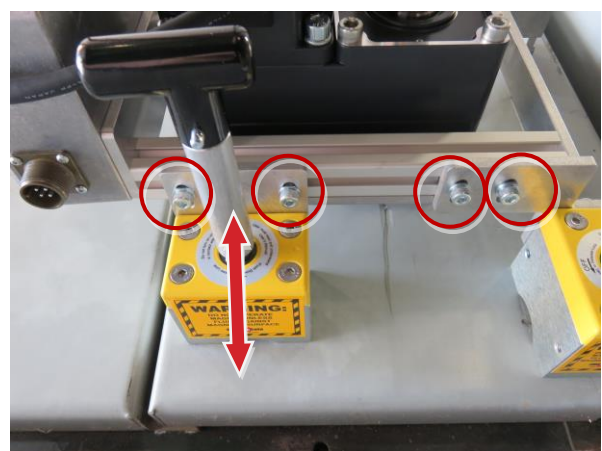


2. Install the RSA as described in the Installation section of this manual. During installation, slide each magnet left or right until the magnet adequately clears any obstructions present, and sit flush to the switchgear face.
3. Re-tighten the bolts loosened during adjustment.

### 3.4 Depth Adjustment

The mounting depth of the RSA can be adjusted to accommodate slight differences in the mounting depth of the racking mechanism.

1. Install the RSA as described in the Installation section of this manual.
2. Loosen the bolts attaching the RSA to the magnet mounts, and locator, as indicated below.



3. Slide the RSA in or out until the racking tool properly engages with the breaker racking mechanism.
4. Re-tighten any bolts loosened during adjustment.





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RSA-43  
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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).