Installation and Operation

CBS ArcSafe®

Distance Is Safety®

A Group CBS Company

RSA-16B

For SB/SBA/SBS

Includes all

Trip Button Lower Right, Close Button Lower Left

2616 Sirius Road | Denton, TX 76208 | (877) 4-SAFETY | www.cbsarcsafe.com

Rev. 4/4/2017

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

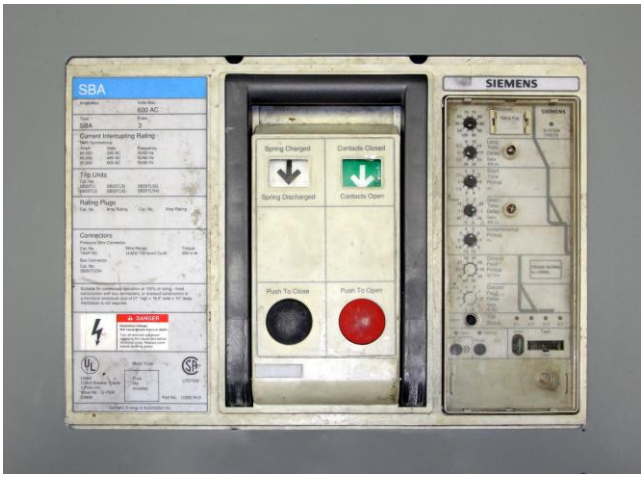
DANGER!

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.

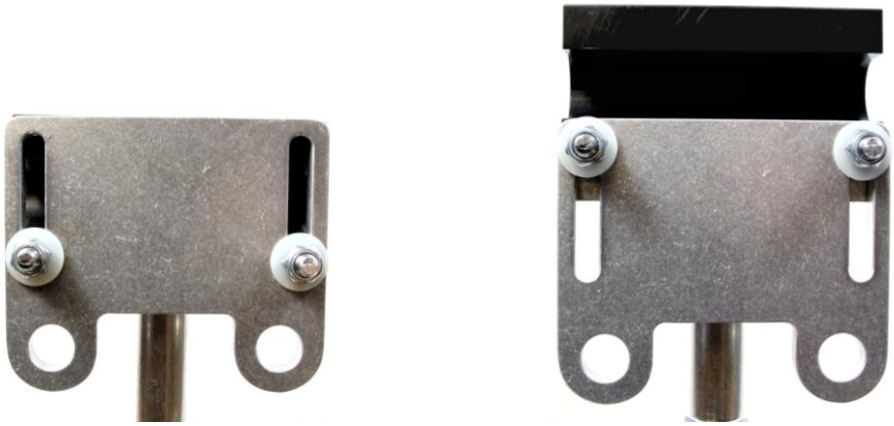
1. Ensure that the area around the breaker is free from any obstruction that may interfere with the proper installation of the RSA.



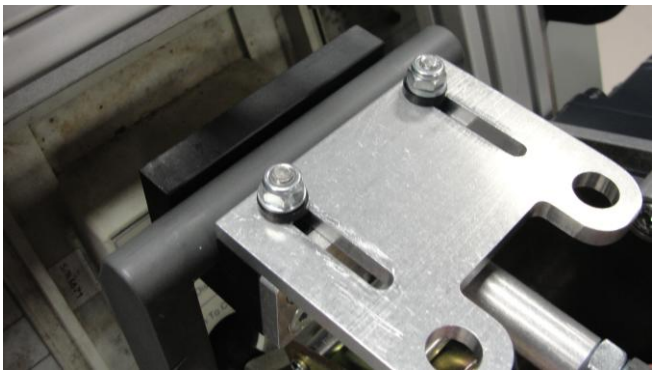
2. Align the locator on the RSA to the edge of the breaker escutcheon as shown, and carefully slide the RSA onto the breaker face.

3. Turn the handles of the twst-lock magnets 180° clockwise to lock the RSA in place.

4. Ensure that the CLOSE and TRIP solenoids on the RSA align in the approximate center of their corresponding buttons on the breaker. To adjust alignment of the solenoids, see Adjustments section 3.4 of this manual.
5. Next, attach the charging handle adapter:
    a. Slide the capture plate on the charge handle actuator back to reveal the opening in which the charging handle from the breaker rests.



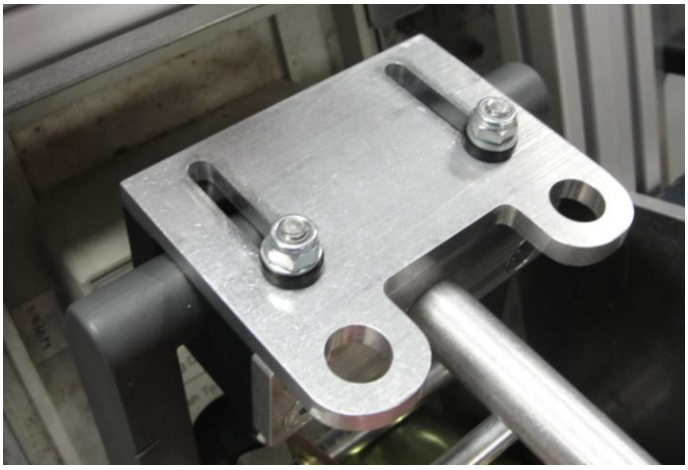
    b. Carefully pull the breaker charging handle out slightly from its rest position, and slide the charging handle adapter from the RSA under it.



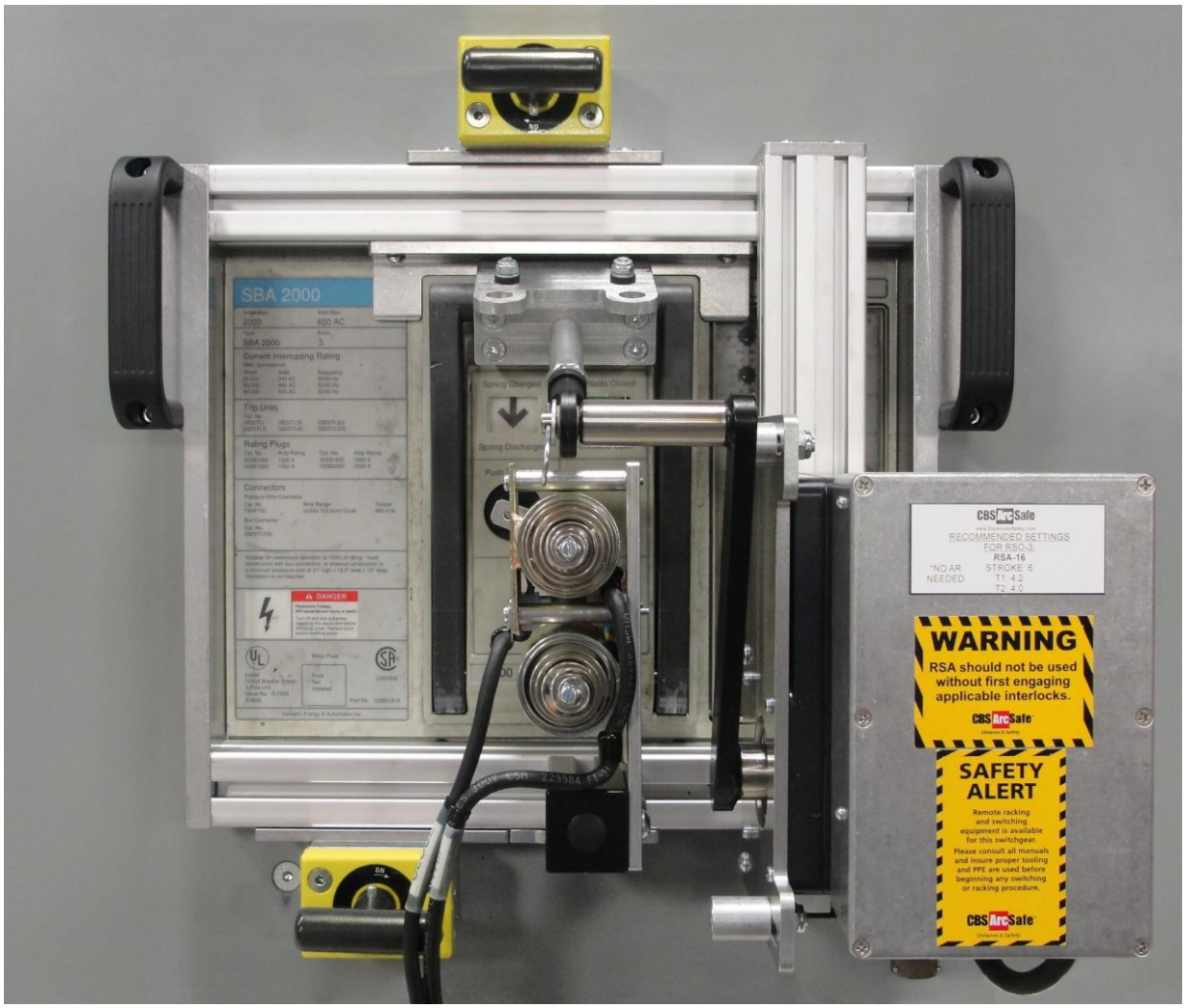
DANGER!

Do not allow the charging handle to ratchet when pulling the handle out to install the charging adapter from the RSA. The charging mechanisms of the SB/SBA/SBS breakers are very intolerant of over-travel. Ratcheting the charging handle during installation may cause the RSA to over-travel, resulting in serious irreparable damage to the breaker charging mechanism.

c. Re-close the capture plate over the top of the breaker charging handle, and push the charge handle back to its rest position.



The RSA is now ready for remote 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-IIID are fully charged or that the unit is plugged into AC power.

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

1. Ensure that the RSA is properly installed. See the Installation Section for detailed instructions.
2. Connect the cables from the RSO-IIID to the RSA.
3. Turn the power switch on the RSO-IIID to the ON position.
4. Program the settings for the RSA into the RSO-IIID. These settings can be found on the placard on the RSA. For more information on programming the RSO-IIID please refer to the RSO-IIID Technical Manual.
5. Ensure that the Auto-Retract (AR) function is set according to the instructions on the setting placard on the RSA. For detailed information on the AR function see the RSO-IIID instruction manual
6. Exit the arc flash boundary
7. Once the timers have been properly set press the CHARGE/CLOSE button to actuate the charging arm and charge the breaker mechanism.
8. Press the TRIP button to Trip the breaker.
9. Press the CLOSE button to Close 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 Magnet Position Adjustment

The location of each magnet on the RSA can be adjusted in order to avoid interference from items mounted to the breaker door. To adjust the depth of the magnet:

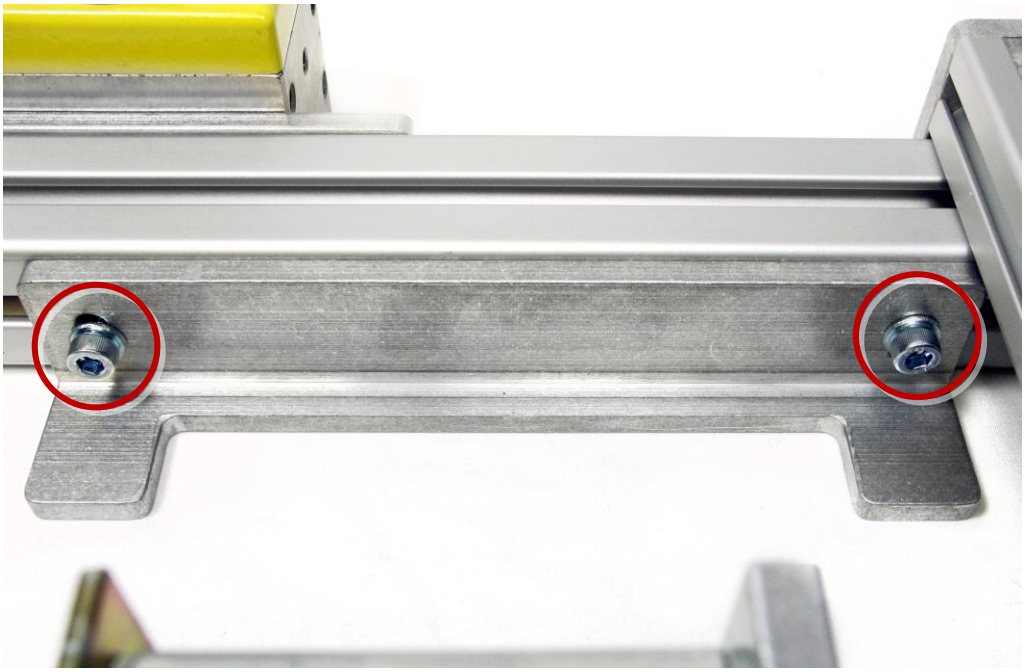
1. Loosen the two bolts on each magnet plate, as shown.

2. Slide the magnet along the frame of the RSA as needed to adequately avoid obstructions on the breaker gear. Install the RSA as described in the Installation section if needed to fine-tune adjustment.
3. Re-tighten the loosened bolts.

3.2 Locator Adjustment

The locator position on this RSA can be adjusted slightly to accommodate differences in breaker construction or layout.

1. Loosen the two bolts on the locator plate, as shown.

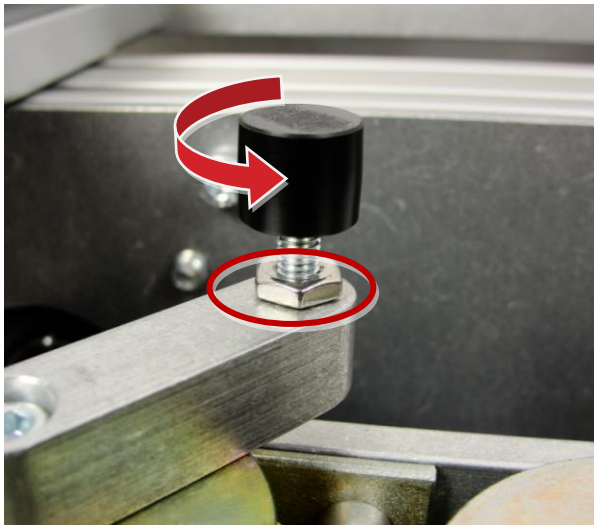


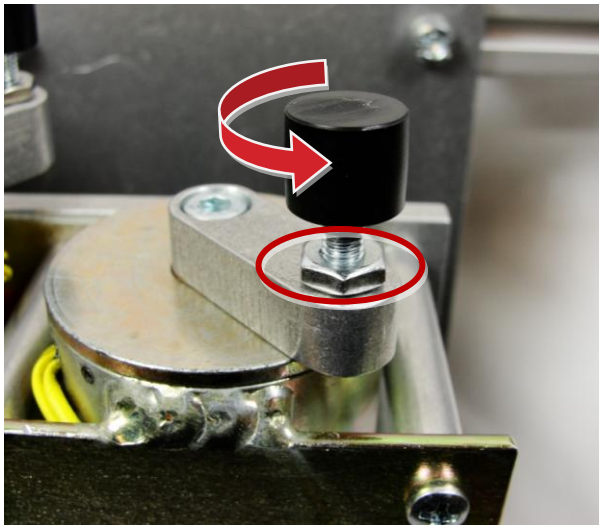
2. Install the RSA on a piece of de-energized equipment.
3. Slide the locator along the RSA frame piece as required to achieve proper fit.
4. Re-tighten the bolts loosened in Step 1.

3.3 Plunger Depth Adjustment

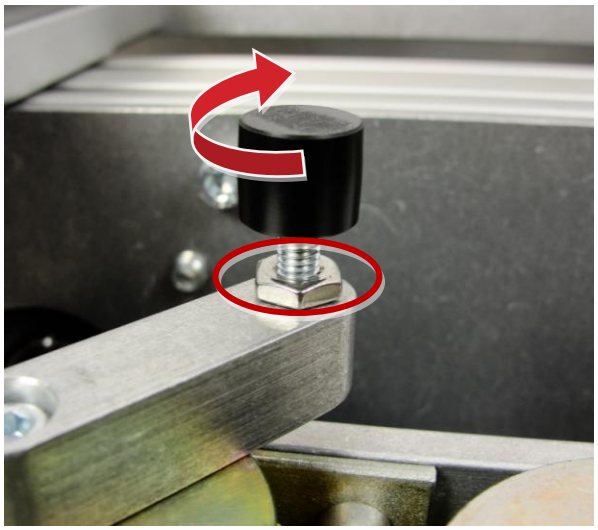
The operation depth of the solenoids on this RSA can be adjusted to accommodate differences in the button-press depth requirements.

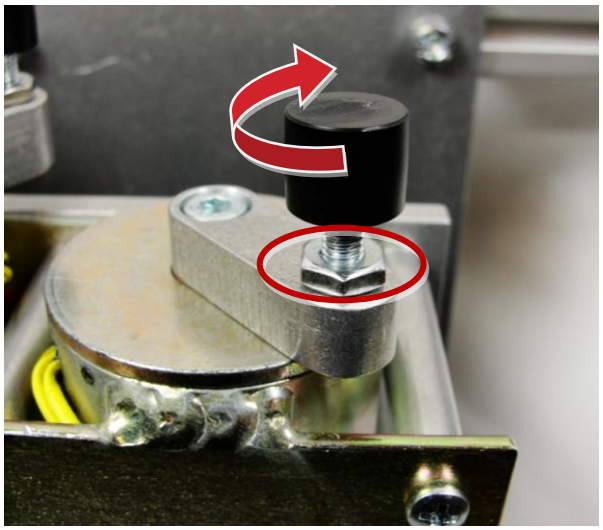
1. To increase the solenoid plunger depth, loosen the nut on the solenoid plunger, and turn the black end counter-clockwise. Test the depth by operating the appropriate plunger with the RSO, and re-tighten the nut. The plunger should typically be no more than ¼" from the button.





2. To decrease the solenoid plunger depth, loosen the nut on the solenoid plunger, and turn the black end clockwise. Test the depth by operating the appropriate plunger with the RSO, and re-tighten the nut. The plunger should typically be no more than ¼" from the button.



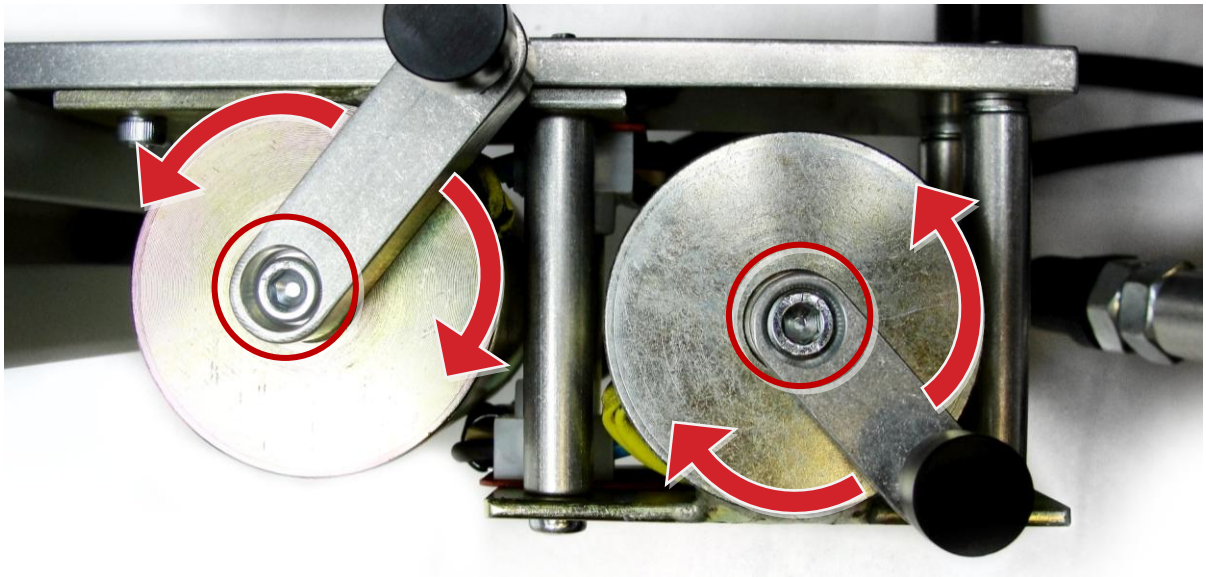


3.4 Plunger Position Adjustment

The position of the solenoids on this RSA can be adjusted slightly to accommodate differences in the button location on the breaker.

3.4.1 Plunger Vertical Adjustment

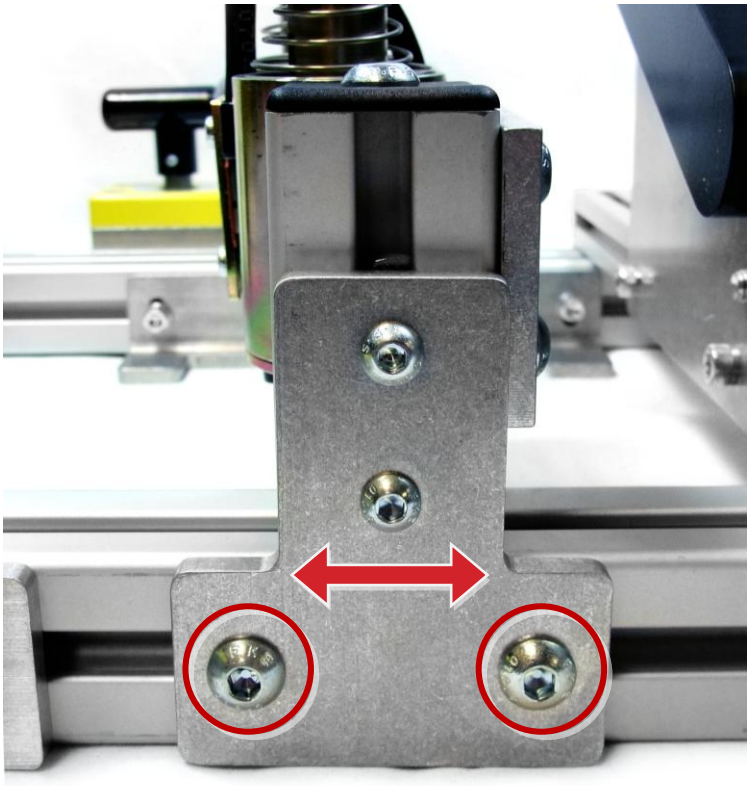
1. Loosen the bolt on each plunger offset arm as shown.



2. Rotate the offset arm as required to align the plungers to the pushbuttons, as described in the Installation section. Note that it may be necessary to perform a horizontal adjustment of the solenoids after adjusting their vertical position. See section 3.4.2 for this procedure.
3. Re-tighten the bolts loosened in Step 1.

3.4.2 Plunger Horizontal Adjustment

1. Loosen the two bolts holding the plunger assembly in place



2. Slide the plunger assembly left or right as required to properly align the solenoids to their corresponding pushbuttons, as described in the Installation section.
3. Re-tighten the two bolts loosened in Step 1.

3.5 Charging Arm Travel Adjustment

The travel length for the charging arm may be adjusted to accomodate differences in charge arm travel length. If at all possible, this procedure should be done on a de-energized (dead bus) breaker prior to use on live equipment.

DANGER!

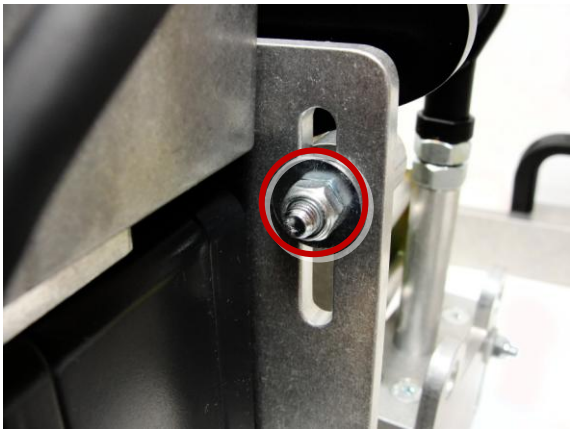
Improper adjustment of the charging arm travel distance can result in serious, irreparable damage to the circuit breaker. Please consult with CBS ArcSafe® before attempting to perform any adjustments to the charging arm travel distance, or RSO settings.

1. On a breaker with a discharged mechanism, operate the charging handle of the breaker until the mechanism is fully charged, and take note of the number of strokes of the handle (full and half) required for a full charge, and encountering the internal hard travel stop.

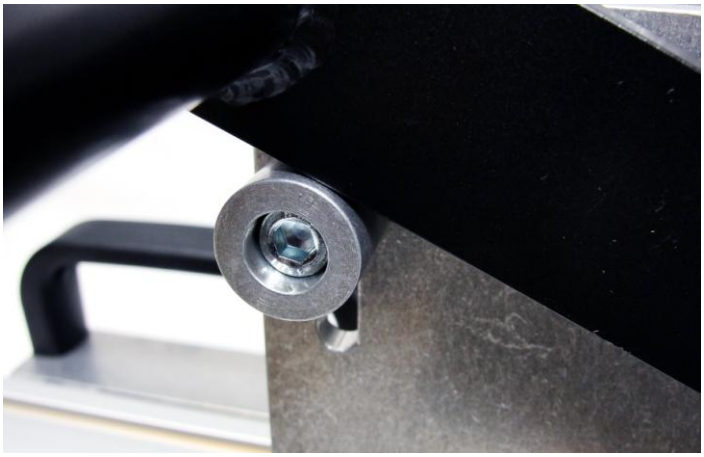
ATTENTION!

Most SB/SBA/SBS breakers will fully charge at around 5½ strokes of the charging handle, but equipment may vary. The user should always verify operation of their own equipment before performing adjustments.

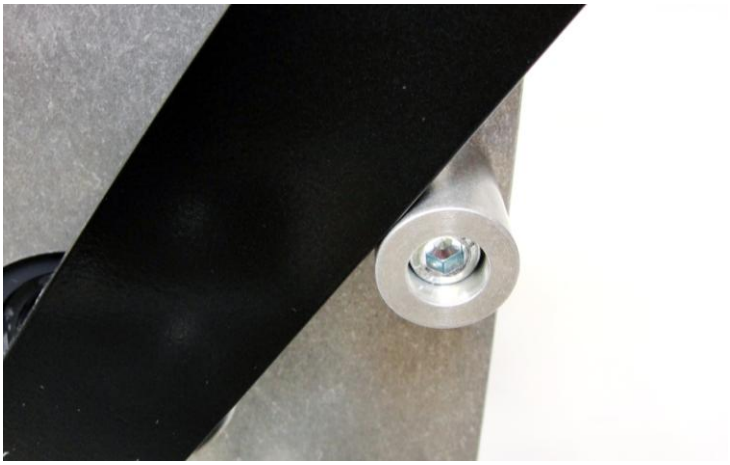
2. Round this number up to the nearest whole number. This will become the number of strokes required by the RSA (ex: 5 full strokes and one half stroke means the RSA must execute 6 strokes).
3. Discharge the breaker mechanism, and then re-charge the breaker, this time shortening the length of each stroke by not fully driving the charge handle down to its lower hard stop. Note the travel distance of the charging arm, and ensure that each stroke ends in the same position.
4. The breaker should become fully charged after the number of strokes noted in Step 2 above, at the very end of travel for the last atroke. If the breaker becomes charged before that point, repeat Step 3 until the breaker mechanism becomes fully charged at the end of the last stroke.
5. Install the RSA as described in the Installation section.
6. Loosen the lock screws on the two travel stops on the RSA.



7. With the charging arm still in the upper (resting) position, slide the upper travel stop so it contacts the actuator arm, and re-tighten the bolt to lock it in place.



8. Next, manually actuate the breaker charging arm with the RSA charging arm adapter attached, to the lower travel position marked or noted in Step 3 above.
9. Slide the lower travel stop so it contacts the actuator arm, and re-tighten the bolt to lock it in place.



10. Complete the charging operation manually, using the travel stops on the RSA as the stops for the charging arm motion. The breaker mechanism should become full charged at the very end of the last stroke, just as the actuator arm on the RSA contacts the travel stop. If the breaker becomes charged before that point, repeat Steps 6-9 above and re-adjsut travel.
11. Ensure both travel stops are fully tightened down before removing the RSA from the breaker.

Notes

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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).