Installation and Operation

CBS ArcSafe®

Distance Is Safety®

A Group CBS Company

RSA-112

For FPE H/HL-2/3
All, Manually Operated

Distance Is Safety®

WHAT STANDS BETWEEN YOU AND ARC-FLASH DANGER? WE DO.

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Rev. 6/14/2019

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

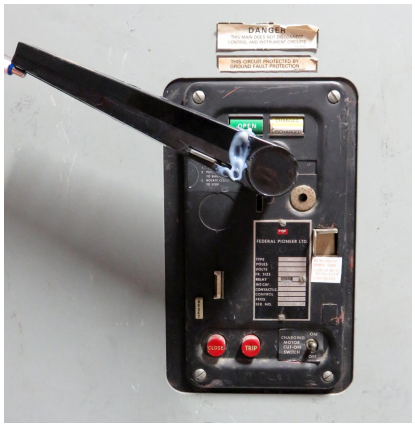
DANGER!

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.

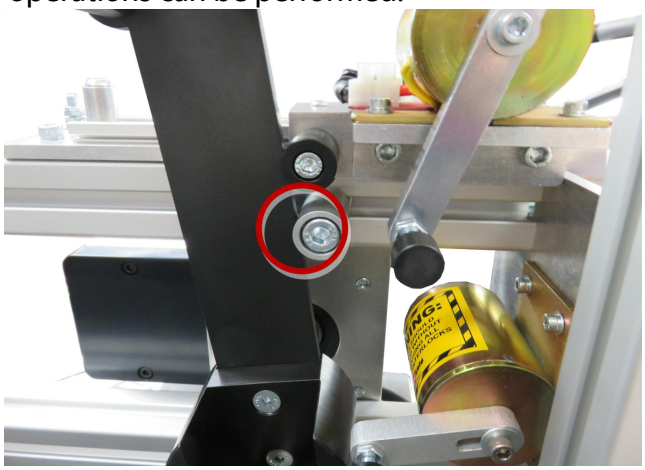
ATTENTION!

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 re-position these items before installing the RSA.

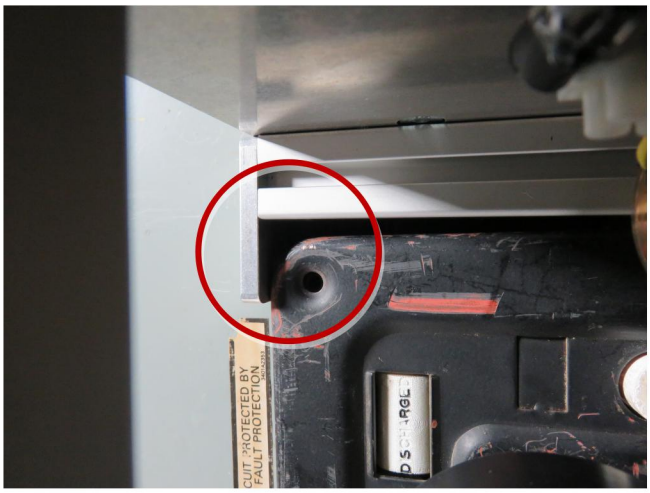
1. Ensure that the breaker to be operated is free from obstructions that may interfere with proper installation of the RSA



2. If your breaker handle travels 135° or more, position the breaker's charging handle to its lower left position, as shown on the left, by pulling the handle out and rotating it counter-clockwise until just before vertical then push the handle in to activate the stop.
   If your breaker handle only travels 90°, position the handle to the upper left position, as shown on the right.
   The handle adapter on the RSA can be manually rotated to match the breaker handle position as needed. The switch-gear handle and the RSA's handle adapter must both touch the counter-clockwise stop before operations can be performed.



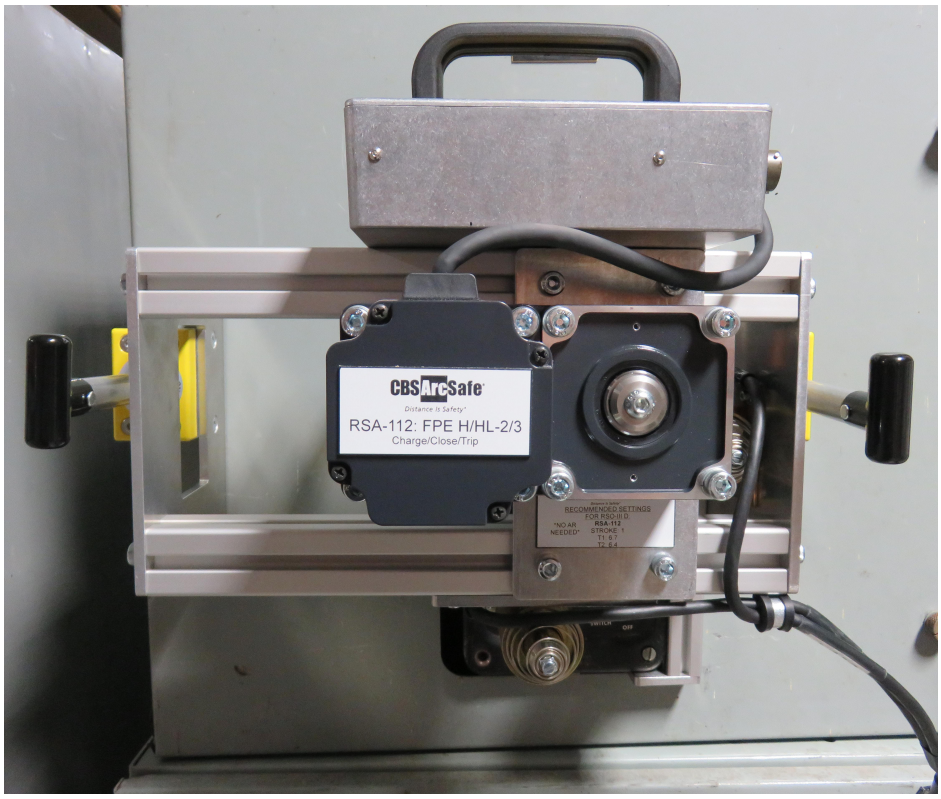
3. Place the RSA over the handle on the breaker. Ensure that the actuator arm is fully seated in the handle actuator on the RSA, and that the cabinet locators (shown below) are fully seated against the switch-gear, and around the breaker as indicated.



4. Ensure the button actuators are positioned properly over the Close and Trip buttons on the front of the breaker.

5. Ensure the magnets are fully seated against the switch cover and then turn the handles of the twist-lock magnets 180° to lock the RSA in place.

The RSA is now ready for operation.


CBS ArcSafe
Distance Is Safety
RSA-112: FPE H/HL-2/3
Charge/Close/Trip

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, if applicable. These settings will be found on a placard on the RSA. For more information on programming the RSO-IIID please refer to the RSO-IIID Technical Manual.
5. NOTE: Depending on the breaker model, the travel distance on the charging arm may be different than the factory settings. See the Adjustments section for instructions to reset the travel stops and travel times on the RSA if needed.
6. 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 switch arm and charge the breaker mechanism.
    8. Press the CLOSE button to close the breaker.
    9. Press the TRIP button to trip the breaker.
    10. Remove the RSA when operation is complete

3 Adjustments

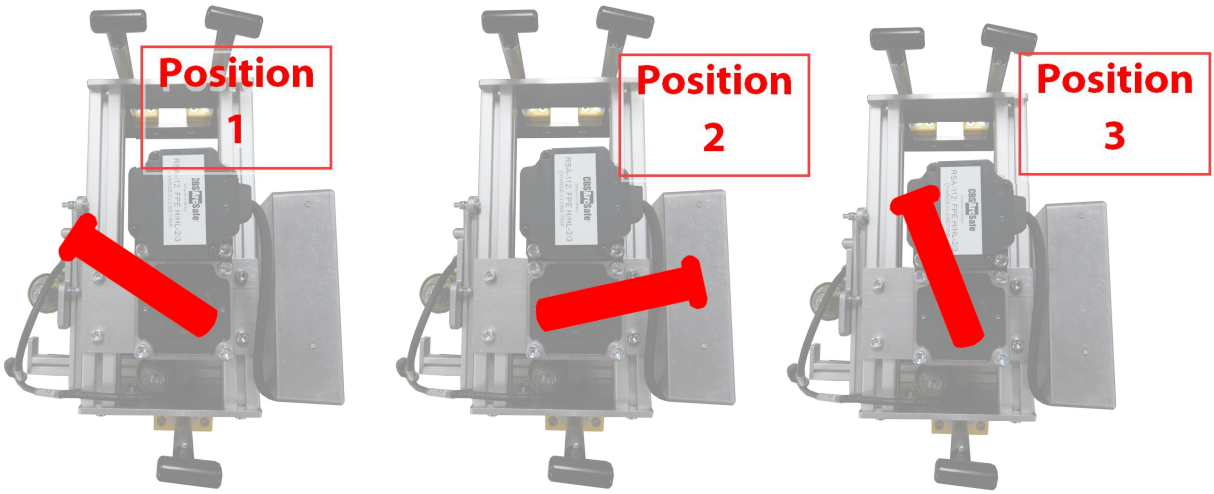
The RSA comes adjusted from the factory to fit most common configurations, and should not need to be adjusted in most cases. However, if adjustments do need to be performed, it is recommended that they be done on de-energized and isolated equipment to prevent possible damage or injury.

3.1 Travel Limits

The FPE H/HL breakers come from the factory a variety of charging arm configurations. As such, the RSA can be configured to accommodate these variations.

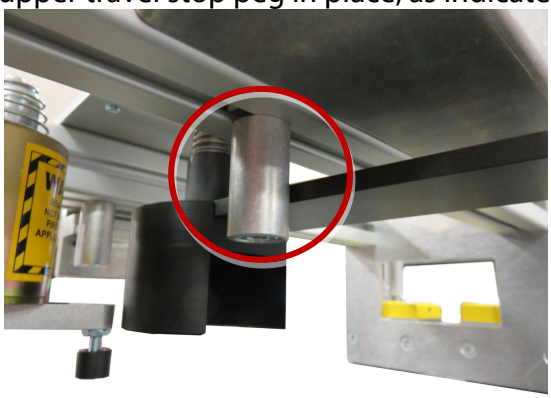
Before Making Travel Adjustments…

Note that the RSA comes from the factory with a specialized travel configuration. Observe the following diagram below.

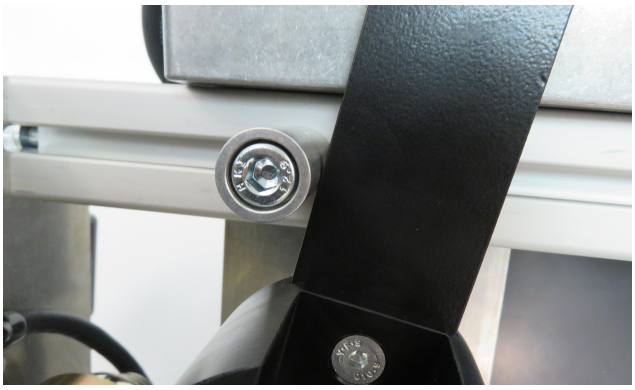


When charging the breaker, the motor handle will not return to its starting position. This is done to prevent the motor arm from pushing the solenoid bracket away from the CLOSE and TRIP buttons.

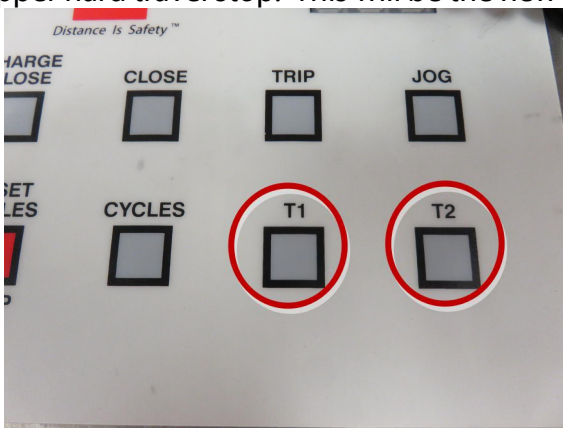
1. Loosen the bolt holding the upper travel stop peg in place, as indicated below.



2. Install the breaker, as described in the Installation section of this manual.
3. Next, re-adjust the upper motor arm travel stop, as follows:
4. Slide the travel stop peg away from the charging arm as far as possible.
5. Actuate the charging handle (manually, or by jogging with the the RSO) until the handle reaches full travel and the breaker is fully charged.
6. Slide the upper travel stop peg back towards the charging arm until it contacts the motor arm, as indicated below.



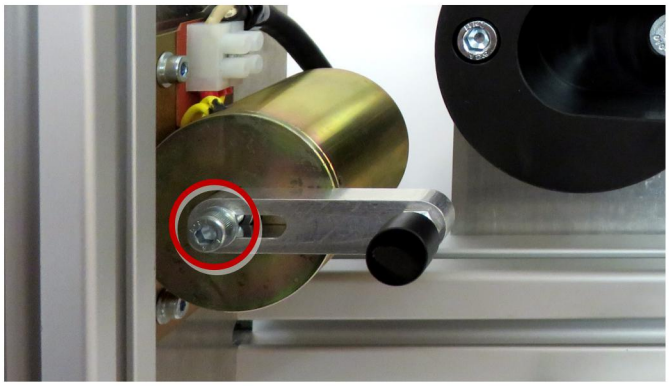
7. With the hard travel stop adjusted, next adjust the travel time on the RSO-IIID.
Turn on and connect the RSO-IIID.
8. Using a stopwatch or other timer, press and hold the JOG button and record the time in seconds it takes the motor arm reach the upper hard travel stop. This will be the new T1 and T2 setting on the RSO-IIID.



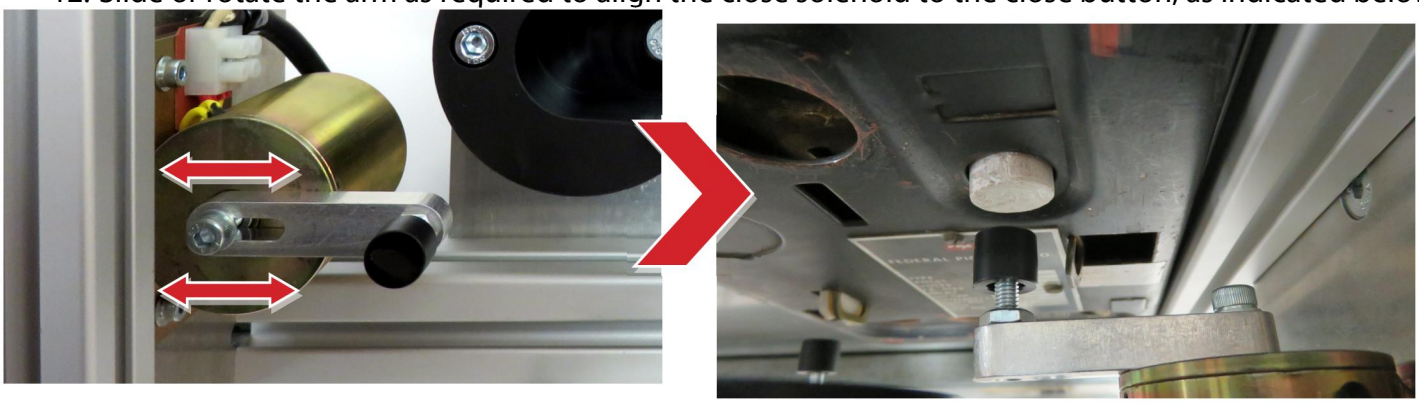
9. Discharge the breaker mechanism.
10. Manually reset the charging handle arm to it's resting location
11. Enter the new time recorded before as both T1 and T2 on the RSO-IIID.
12. Press the CHARGE/CLOSE button on the RSO-IIID and verify that the breaker charges correctly.
13. Adjust times up or down to ensure that the operator handle makes contact with the hard travel stops before the RSO-IIID stops the operation, and that the RSO-IIID does not run the RSA for more than 1 second with the arm against the stop.
14. Write down the new T1 and T2, and keep these with the RSA. Adjustment is now complete.
(IMAGE OF RSO IIID NEEDED)

3.2 Close Solenoid Adjustment

11. Loosen the bolt on the bottom of the right solenoid arm, as indicated below



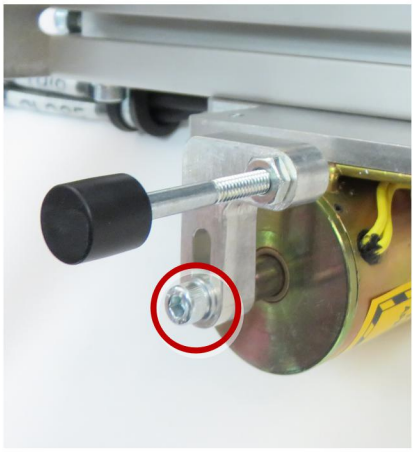
12. Slide or rotate the arm as required to align the close solenoid to the close button, as indicated below..



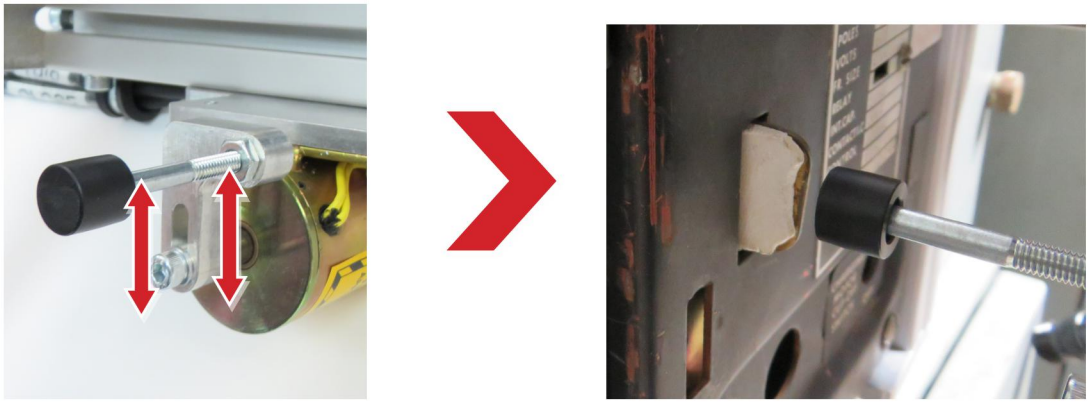
13. Re-tighten the bolt.

3.3 Trip Solenoid Adjustment

14. Loosen the bolt on the bottom of the left solenoid arm, as indicated below



15. Slide or rotate the arm as required to align the close solenoid to the close lever, without contacting the fixed plate next to the lever.



Re-tighten the bolt.

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).