CBS ArcSafe®

A Group CBS Company

USER'S MANUAL

RRS-3 TSA7

A Portable Device for Remotely Racking ASCO 7000 Transfer Switches

CS CHICKEN SWITCH®

Distance is Safety®

WHAT STANDS BETWEEN YOU AND ARC-FLASH DANGER?

WE DO.

CBSArcSafe.com | Email: info@CBSArcSafe.com | **877-4-SAFETY** | Fax: 940-382-9435

Rev. March 2025

CBS ArcSafe®
A Group CBS Company

User's Manual for the RRS-3 TSA7 Model

POWERED BY M18 REDLITHIUM

1.0 Arc-blast Hazards

The hazards associated with electrical arc-blasts are well documented. Studies conducted by numerous industries and professional organizations have sought to quantify the intensity of arc-blast, the risks to personnel, and various methodologies for mitigating the risks.

Without doubt, increasing the distance between the arc and a human is the single greatest favorable factor in reducing injuries.

Remote racking is not a panacea but rather one more tool available for protecting workers while they are performing electrical switching.

Using the RRS-3 TSA7 remote racking device may not negate the need for additional personal protective measures. The user is ultimately responsible for evaluating each situation to determine if additional protective measures are needed.

WARNING

BREAKER RACKING MAY PRESENT RISK OF SERIOUS INJURY OR DEATH. THIS DEVICE SHOULD ONLY BE USED BY QUALIFIED PERSONS AFTER CAREFUL ANALYSIS OF THE HAZARDS.

2.0 Application Information

The RRS-3 TSA7 is designed for ASCO Automatic Transfer Switches made by Schneider Electric. The TSA7 fits J, H, and G frames up to 4000 A.

The TSA7 is designed to accommodate various frame sizes of ASCO Transfer Switches. Although there are size differences between different models, the geometry of the racking mechanism on the face of the panel remains consistent. The TSA7 features an adjustable anti-rotation/ stabilization tang on the front of the racking motor to accommodate the various frame sizes. There are two cameras on the actuator for viewing the position indicator on ASCO Transfer Switch models. A switch on the rear of the actuator allows you to select the required camera lens.

Please note that the OEM manual racking handle must be removed to mount the RRS-3 TSA7 remote racking device. A pin is provided with the TSA7 racking kit to attach the motor to the racking screw on the transfer switch.

3.0 General Safety Information

Carefully read and comply with all safety instructions listed below.

The RRS-3 TSA7 contains a Lithium Ion Battery.

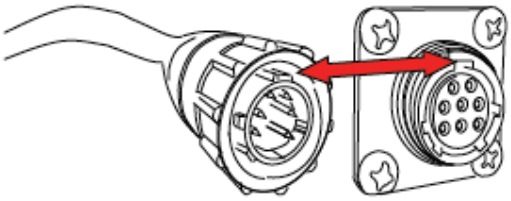
In the unlikely event of a battery rupture, treat all liquids and vapors as potentially hazardous (see Milwaukee battery manual).

Whenever the lid is open the unit must be protected from water intrusion.

Never close the carrying case while the unit is powered on.

4.0 Cables

4.1 Connecting and disconnecting the control cable



1. Align the keyway on the cable connector with the key on the power supply connector.
2. Push in and engage the thread on the coupling nut and turn clockwise.
3. Use a similar technique to connect the cable to the controller.

4.2 Racking Head Cable

The racking head cable is a high-quality, super-flexible, multiple conductor cable with an overall braided shield. The racking head cable can easily be coiled and stored in the pocket toward the front of the carrying case.

Care should be taken to ensure the carrying case lid does not crush any of the cables.

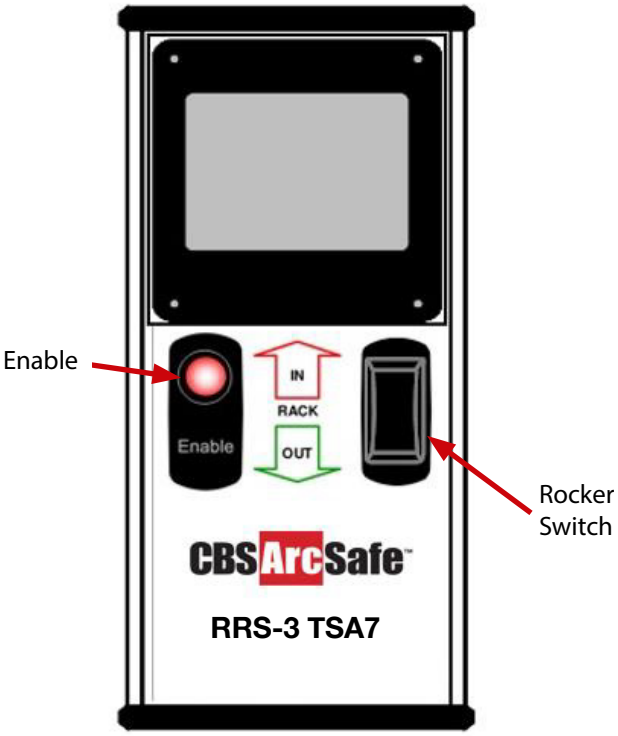
To safeguard against the case lid breaking the control cable connector, the lid latches should always be left in the 'down' position whenever the lid is open.

5.0 Carrying Case

To lessen the chances of a tip-over, the telescoping tag-along handle should be completely collapsed whenever the RRS-3 TSA7 is in use.

6.0 The Controller

The controller is designed for two-hand operation for the purpose of preventing inadvertent operation of the racking motor. See the following section for a detailed description of the controller features and functions.



6.1 The ENABLE button

Upon initial power-up, the Enable button must be depressed for at least one second in order to advance to the next video screen.

6.2 The Rack IN/Rack OUT rocker switch

The rocker switch is used to select whether the racking motor racks the breaker IN or OUT. The rocker switch will spring return to center, OFF.

The Enable button and rocker switch must BOTH be HELD CONTINUOUSLY in order to run the racking motor.

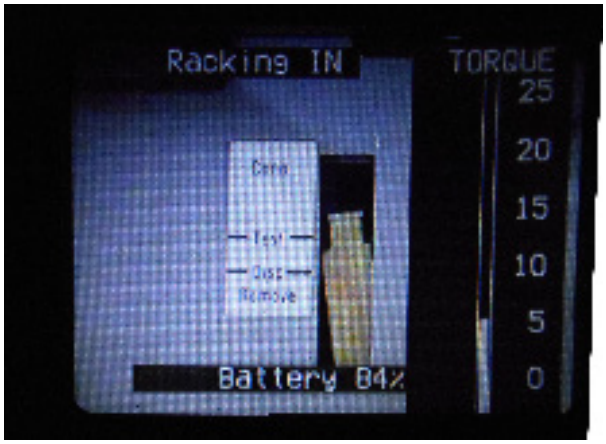
6.3 Startup Screens

The video screen serves multiple functions.

After the RRS-3 TSA7 is powered up, the introductory screen will appear. Pressing the Enable button for one second will advance the display to the next screen.

After reading the warning screen, once again depress the Enable button for one second to advance to the normal operating screen.

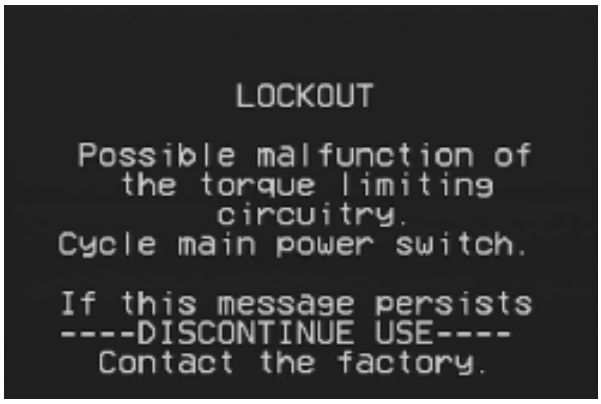
6.4 Operating Screen



The operating screen allows the user to constantly monitor:

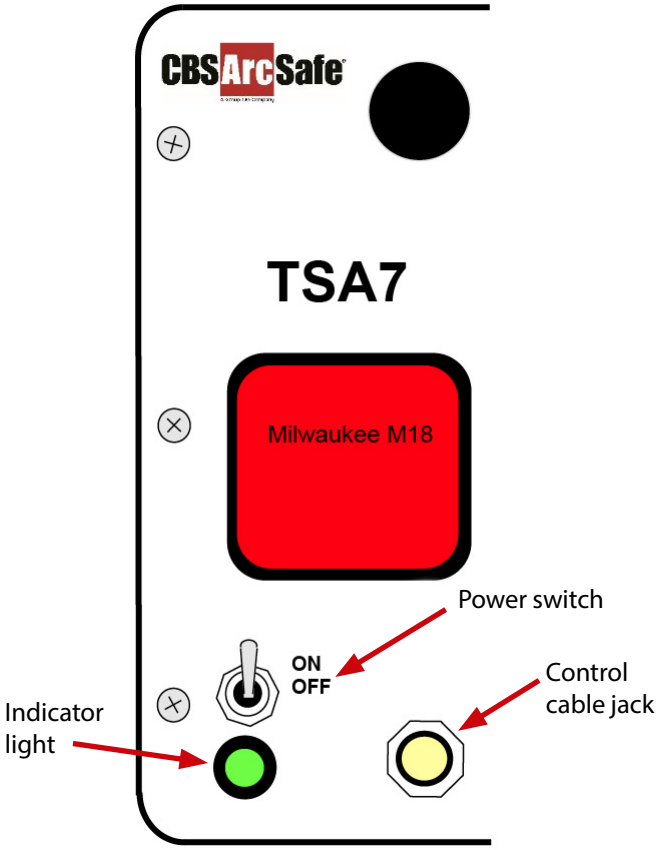
- the ASCO Transfer Switch position indicator
- the instantaneous torque being applied
- the direction the breaker is moving

6.5 Torque Limiter Failure



- The control circuitry is designed to allow a pre-determined maximum current to flow to the racking motor, thereby precisely controlling torque.
- An independent circuit, utilizing a Hall-effect current sensor, continuously monitors the amount of current flowing to the motor. This is used for the torque bar graph displayed on the video screen.
- If the motor current exceeds a certain value, the control system will inhibit ALL operations and display the message shown above.
- It is possible for a spurious current to trigger this response. Simply turn the main power switch OFF and back ON. If the message appears again, discontinue using the device until the factory has been consulted.

7.0 Power Supply



7.1 Power Supply Function

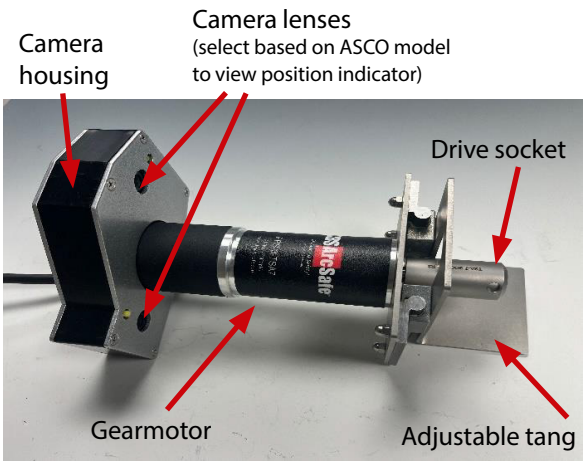
The RRS-3 TSA7 is powered by a Milwaukee M18 Red Lithium® Battery. Please ensure that the battery has enough charge to complete the desired number of operations.

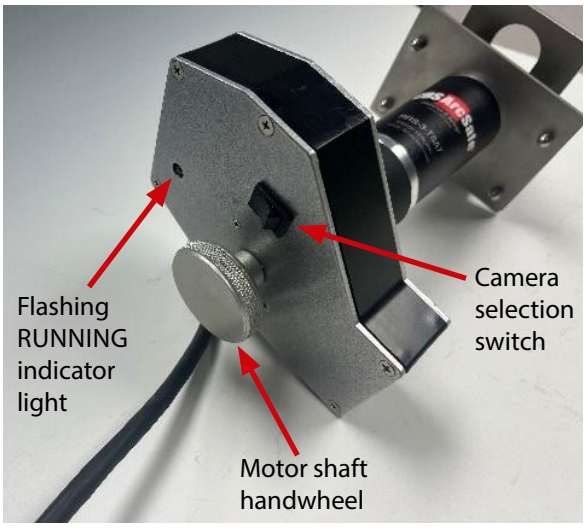
7.2 Recharging the Battery

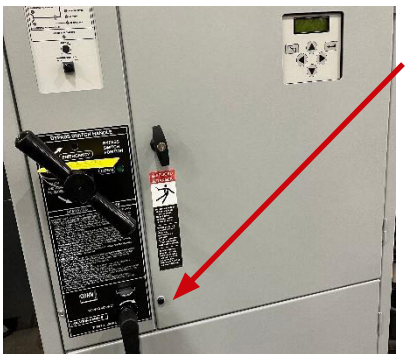
In order to recharge the battery, use the provided Milwaukee M18 Charging Docking Station.

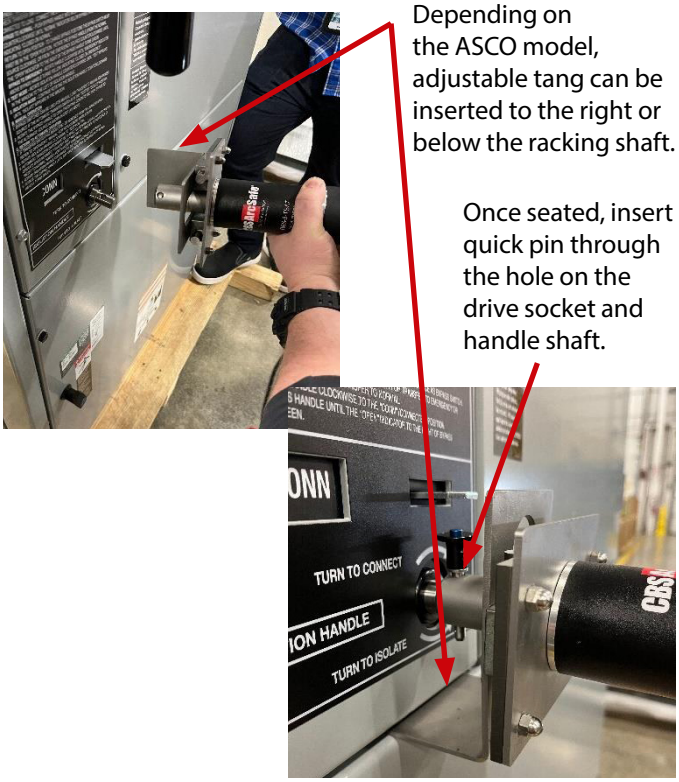
8.0 The Racking Head

Key components of the Racking Head are as follows:



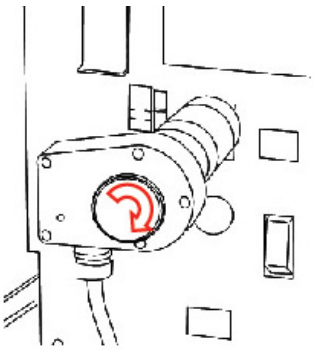






8.1 Remove ASCO OEM Handle and Attach the Racking Head

Once the OEM handle is removed, you are ready to attach the TSA7 Racking Head. For ASCO J and H models, align the TSA7 adjustable tang for insertion into the slit/gap between the switchgear sections located below the racking screw. At the same time, insert the TSA7 racking drive socket over the OEM handle shaft. (For ASCO model G, insert the tang in the doorway gap to the right of the racking mechanism.) Line up the pin holes and insert the quick pin provided with the TSA7.



If engaging the racking nut with the drive socket is difficult, the handwheel on the back of the actuator can be rotated to reposition the drive shaft to align the pin holes.

8.2 Racking to 'FULL IN' or 'FULL OUT' Limits

The RRS-3 TSA7 electronically limits the amount of torque that is applied to the racking mechanism. Observing the torque bar graph on the right side of the video display, the operator will notice an increase in torque as the apparatus stabs engage the switchgear bus, as well as when the apparatus is racked to either extreme limit (racked in or racked out).

Anytime the racking motor drives to a stalled condition, the control system will stop the motor and then reverse direction to backoff the racking mechanism by approximately one-half turn — provided both the Enable button and the racking rocker switch are held. The video display will then indicate "Complete."

Additionally, the racking motor is equipped with a stall sensor to sense motor stall. DO NOT be hesitant to run the racking motor to 'full stall' in either direction. To protect the racking motor, the control system limits the amount of time the motor can remain in a stalled condition, as well as limiting the motor current to a safe level.

9.0 Sequence of Operation

STEPS	SECTION
Connect the control cable to the power supply and handheld control unit.	4.1
Observe the screen on the handheld controller. Press the Enable button to acknowledge you have read the warnings and to advance to the next screen.	6.0
Install the racking head. Select the camera to view position indicator (switch on back of actuator).	8.0
Standing outside the arc-flash boundary zone, depress the Enable button while simultaneously depressing the Racking rocker switch in the desired direction, i.e. Rack IN or Rack OUT.	6.0
Observe the video display to monitor the breaker position indicator as well as the torque that is being applied.	6.4
Release either the Enable button or the Racking rocker switch to stop the racking motor at any time.	6.0
If the Enable button and Racking rocker switch are held continuously, once the motor drives to a stalled condition, it will automatically stop and reverse direction until the racking nut (socket) turns approximately 1/2 turn. The display will then say "Complete."	8.2

10.0 Care and Storage

The TSA7 contains an M18™ REDLITHIUM™ XC5.0 Extended-Capacity Battery Pack (48-11-1850). DO NOT USE BATTERIES NOT MANUFACTURED BY MILWAUKEE TOOLS. DOING SO WILL VOID THE WARRANTY.

10.1 Storage

- Never store the batteries where the ambient temperature might exceed 110° F, i.e. inside a vehicle with the windows up, on a sunny day.
- Avoid getting the unit wet or storing it in a high-humidity location. It should be stored in a dry location.
- The handheld controller, racking head, and cabling should be stored together in the carrying case.

11.0 Specifications

MECHANICAL	
Gearmotor theoretical max torque	36 ft. lbs.
Gearmotor torque limit factor	22 ft. lbs.
Total unit weight	30 lbs.
ELECTRICAL	
Battery voltage	18 V
Gearmotor voltage	24 V
Battery capacity	5 Ahr
Battery type	Lithium Ion
Video camera lens	8 mm, 40 degree FOV
Video camera light sensitivity	0.1 lux

12.0 Troubleshooting Guide

SYMPTOM	ACTION
Video display doesn't start up properly.	Turn power supply switch OFF, wait 3 seconds, turn power supply switch ON.
Video image is not clear.	Clean camera lens with a soft, clean towel or lens cleaner.
Unit goes into Lockout mode. Display says that the torque limiting circuitry may have failed.	Cycle power OFF/ON. If "Lockout" recurs, discontinue use and contact the factory.

13.0 Warranty

CBS ArcSafe® guarantees all products manufactured by CBS ArcSafe® only against defects in materials and/or workmanship for a period of twenty-four (24) months commencing on the date the product is received by the customer. THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESS OR IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

CBS ArcSafe® will, at its option and its cost (excluding shipping expenses) repair, replace or refund the purchase price of any product manufactured by CBS ArcSafe® which has a covered defect in materials and/or workmanship. THIS IS THE CUSTOMER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY. IN NO EVENT WILL CBS ARCSAFE'S® LIABILITY FOR DAMAGES (WHETHER ARISING FROM BREACH OF CONTRACT OR WARRANTY, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE) EXCEED THE PURCHASE PRICE OF THE PRODUCT CONCERNED NOR WILL CBS ARCSAFE® BE LIABLE FOR PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS) EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

This warranty does not cover damage caused by accident, improper care, negligence, normal wear and tear, natural causes, unlicensed repairs, and incompetent supervision. This warranty also does not cover repairs or replacements made by unauthorized individuals except when agreed to in writing. CBS ArcSafe® reserves the right to disallow warranty repairs if the unit has been disassembled or misused, as determined by CBS ArcSafe® in good faith. Please contact us at (877) 472-3389.

Worldwide Headquarters & U.S. Sales

CBS ArcSafe A Group CBS Company
2616 Sirius Road | Denton, TX 76208
Ph: 877-4-SAFETY | Ph: 940-382-4411 | Fx: 940-382-9435
info@CBSArcSafe.com

U.K. /Europe Office

27 Cressey Avenue | Shenley Brook End
Milton Keynes, Buckinghamshire
United Kingdom MK57EL
Phone: +447 770 500577