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CHICKEN SWITCH®

**A Portable Actuator for Remotely
Operating Westinghouse
SPB100 Breakers**



SPB-1 Model User's Manual

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*User's Manual
Model SPB-1*

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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.

The Chicken Switch® is not a panacea but rather one more tool available for protecting workers while they are performing electrical switching.

Using a Chicken Switch® 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

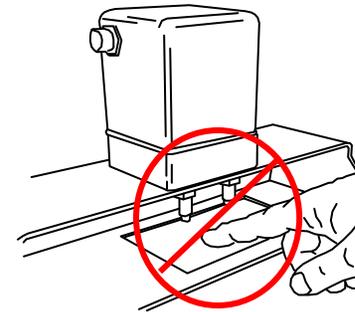
Electrical switching may present risk of serious injury or death. This device should only be used by qualified persons after careful analysis of the hazards.

2.0 Safety Information

ALWAYS connect the control cable to the actuator BEFORE installing the Chicken Switch®.

2.1 Finger pinch points

NEVER place your fingers or body parts in the area of the plungers when the control station is connected to the actuator. The plungers could pinch your hand/fingers against the frame or breaker.



Also, keep fingers clear of the bottom of the actuator and the magnets when the actuator is near a ferrous surface.

2.2 Strong magnets

The holding magnets are very strong. Keep magnetically-sensitive objects such as watches or computer disks away from the bottom of the actuator.

3.0 Battery Requirements

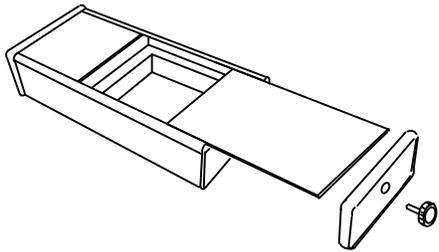
- Eight (8) AA alkaline cells are required. Carefully observe polarity when installing cells.
- Rechargeable NiMh or NiCd are not recommended.

3.1 Battery Life

- A set of fresh alkaline cells will provide hundreds of operations.

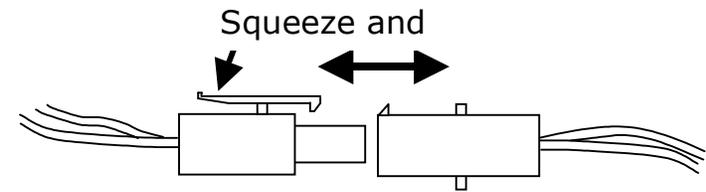
3.2 Battery Replacement

- ALWAYS disconnect the control cable before replacing batteries to avoid possible static damage of the electronics!



- Turn the control station upside down, remove the endplate retaining knob. Remove the endplate and slide the cover out as shown below.

3.3 To connect/disconnect batteries:



3.4 CAUTION: Static Discharge Potential

- To avoid possible damage to electronic components disconnect the control cable before replacing batteries.

WARNING

To avoid possible damage to electronic components disconnect control cable before replacing batteries.

4.0 Operation

ALWAYS connect the control cable to the actuator BEFORE installing the Chicken Switch®.

4.1 Connecting the control cable:



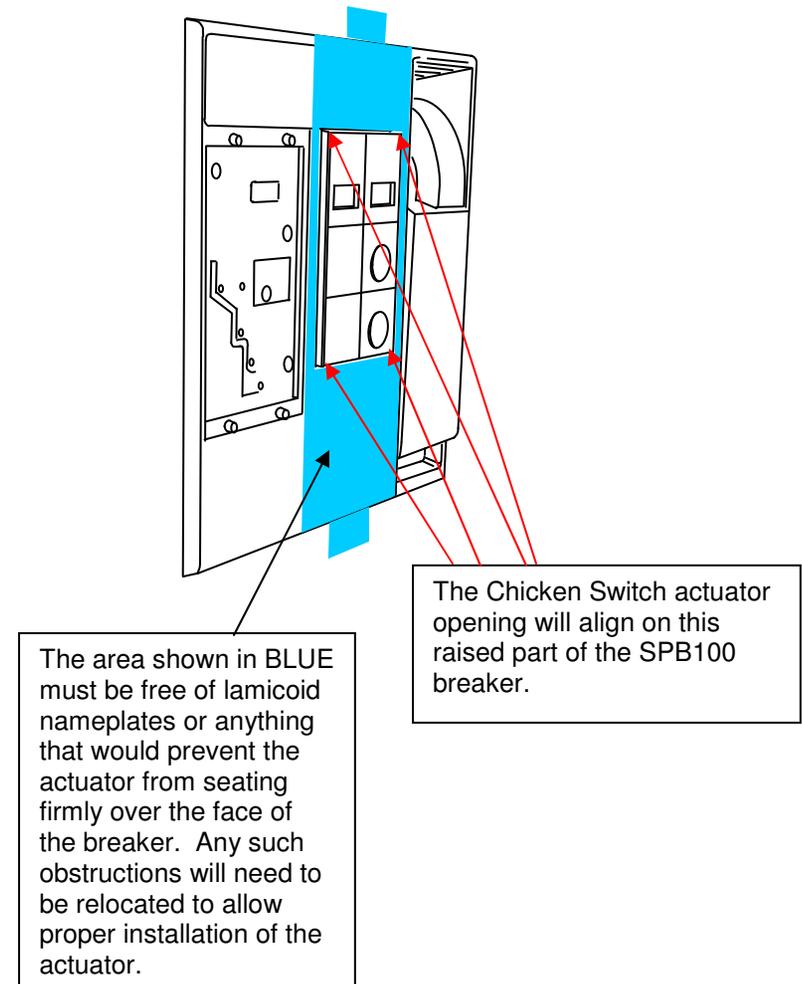
1. Align the arrow on the cable end with the top of the receptacle.
2. Push in and engage the threads on the coupling nut and turn clockwise.
3. After one or two turns of the coupling nut, push in on the cable end. Repeat this until the connector is fully seated.
4. Use a similar technique of turn-stop-and-pull to disengage the cable ends.

4.2 Sequence of Operation:

1. Connect the control cable to the actuator and to the hand-held controller.
2. Both plungers should be in the retracted position. If they are not, DO NOT install the actuator on the breaker. **Doing so could inadvertently TRIP or CLOSE the breaker.**
3. Install the actuator on the breaker as described in Section 4.3
4. Ensure you are at a safe distance from the circuit breaker that is to be operated.
5. When ready to operate the breaker, press and hold the ENABLE button and then press and hold the appropriate button for the desired operation –

either OPEN or CLOSE. Both the Enable and OPEN or CLOSE buttons must be pressed and HELD until the plunger extends far enough to operate the breaker. If either button is released, the plunger will not complete the stroke and will retract immediately.

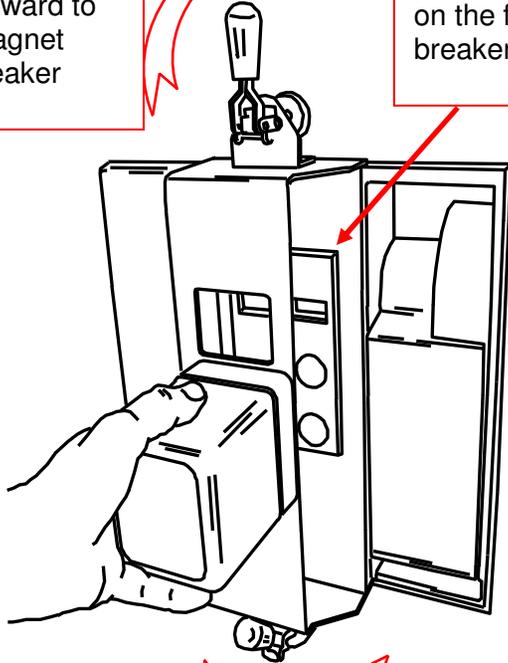
4.3 Attaching and Removing the Actuator:



To attach the actuator, complete the following steps:

2. Rotate the upper magnet lever upward to latch magnet onto breaker door.

1. Align opening in actuator over the raised portion on the face of the breaker



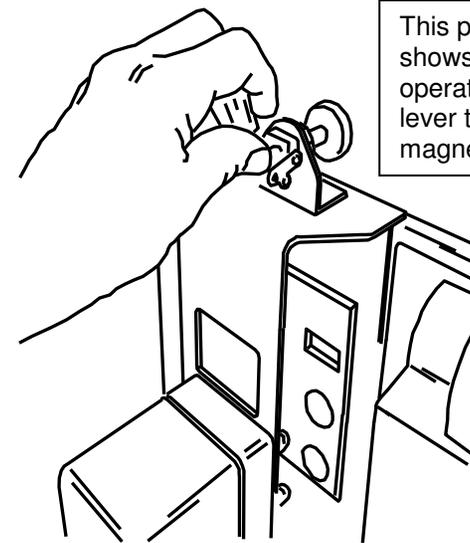
3. Rotate the lower magnet lever downward to latch magnet onto breaker door.

Note: Obstructions such as lamicoid nameplates on the front of the breaker or on the breaker door above or below the breaker may interfere with installing the actuator. These obstructions may have to be relocated to allow for proper installation.

To remove the actuator:

Hold the actuator firmly as shown in the picture on the previous page and rotate the lower magnet lever upward and rotate the upper magnet lever downward to disengage both magnets.

The actuator can then be gently pulled away from the breaker.



This picture shows how to operate magnet lever to release magnet.

NOTICE:

The Chicken Switch® is designed as a *portable* device. It is not designed to remain with the control unit connected to the actuator for extended periods of time. To do so will deplete a fresh set of batteries in a short amount of time.

4.4 The indicator lights & controls:

NOTE: the indicator lights only work when the ENABLE button is depressed.

GREEN: indicates the actuator is being commanded to extend the CLOSE plunger.

RED: indicates the actuator is being commanded to extend the OPEN plunger.

YELLOW: indicates that both plungers are retracted and the controller and batteries are healthy.

Rapidly blinking YELLOW indicates the battery voltage with zero load has fallen to an unacceptable level. Operation is inhibited until batteries with an acceptable voltage level are installed.

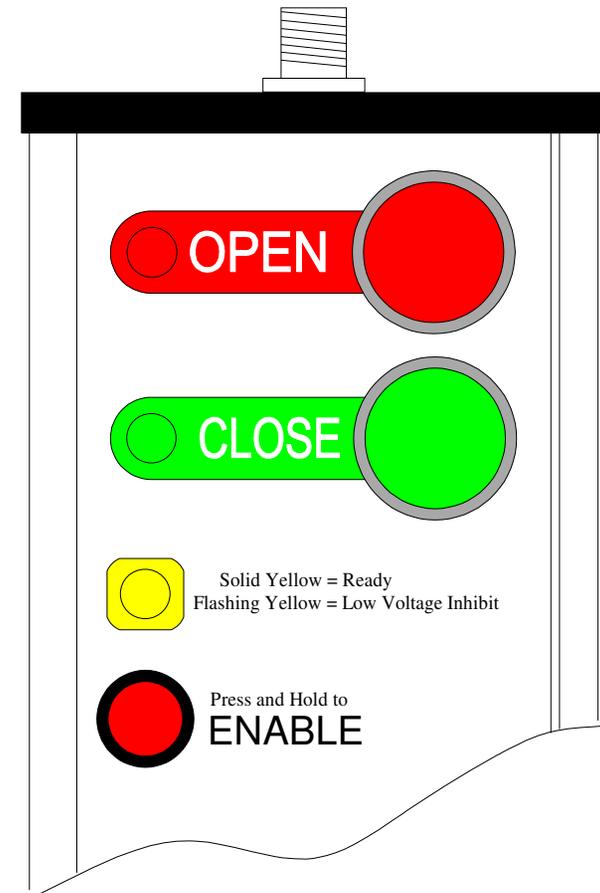
The ENABLE button:

The Enable button must be continuously depressed in order to command the actuator.

Releasing the enable button has the same affect as releasing both RED and GREEN pushbuttons– the actuator will retract both plungers.

Note:

If a pushbutton is held in the trip or close position for an extended amount of time, the plunger will remain in the extended position. When the pushbutton or the enable button is released, the plunger will retract.



5.0 Care and Storage

5.1 Cleaning the magnets

Over a period of time, the magnets may attract ferrous debris. Exercise care to avoid setting the actuator where the magnets might attract debris. If this does occur, use a paper towel or nylon bristle brush to clean the face of the magnets. Keeping the magnet faces clean ensures that maximum holding power is maintained.

5.2 Storage

Remove all batteries from the control station if the device will not be used for longer than 6 months.

Never store the batteries where the ambient temperature might exceed 110° F.

Avoid getting the unit wet or storing it in a high humidity location.

6.0 Warranty

MarTek Ltd. guarantees all products manufactured by MarTek Ltd. only against defects in materials and/or workmanship for a period of twelve (12) 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.

MarTek Ltd. will, at its option and its cost (including shipping expenses for return and re-delivery), repair, replace or refund the purchase price of any product manufactured by MarTek Ltd. which has a defect in materials and/or workmanship. THIS IS CUSTOMER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY. IN NO EVENT WILL MARTEK LTD'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 MARTEK LTD. BE LIABLE FOR PUNITIVE, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING WITHOUT LIMITATION LOST PROFITS) EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

MarTek Ltd. reserves the right to disallow warranty repairs if the unit has been disassembled or misused, as determined by MarTek Ltd. in good faith. Please contact us at (800)-248-4958 for a return authorization.

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Specifications

MECHANICAL

Holding magnets:	Two magnets, each rated @ 55.1 lbs force, 12,600 Gauss.
Linear Actuators:	12VDC rated.
Force:	Linear actuators rated for approximately 12lbs
Typical operating speed:	Depending on the distance from the plunger to the breaker button, it may take one to two seconds for the actuator to operate the breaker.
Projected life:	20,000 operations

ELECTRICAL

Operating voltage:	12 volts DC
Fuse:	5 amp, quick-blow, AGC-5
Power supply:	8 AA alkaline disposable batteries. When used properly, one set of batteries should yield over 700 operations.
Control Cable:	30 feet in length (9.1 meters), 5-conductor, extra-flexible, PUR insulation
Controller:	<p>Requires two-hand operation. The 'enable' button must be depressed while operating the OPEN or CLOSE buttons.</p> <p>A programmable micro-controller manages control inputs, motor functions, monitors and limits mechanical travel and performs timing functions to protect the actuators in a stalled condition.</p> <p>An intelligent 'H-bridge' motor driver provides start/stop/braking motor functions. The H-bridge has integral thermal shutdown protection.</p>

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www.chickenswitch.com

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