Instruction Bulletin - 01.4IB.65220A
Lift Devices

for use with PowlVac® and PowlVac-AR®, 5kV & 15kV Switchgear and PowlVac 38™ and PowlVac 38-AR™ Switchgear
Contact Information

Powell Electrical Systems, Inc.
powellind.com
info@powellind.com

Service Division
PO Box 12818
Houston, Texas 77217-2818

Tel: 713.944.6900
Fax: 713.948.4569
Signal Words

As stated in ANSI Z535.4-2007, the signal word is a word that calls attention to the safety sign and designates a degree or level of hazard seriousness. The signal words for product safety signs are “Danger”, “Warning”, “Caution” and “Notice”. These words are defined as:

**DANGER**

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

**WARNING**

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION**

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

CAUTION, used without the safety alert symbol, is used to address practices not related to personal injury.

**NOTICE**

NOTICE is used to address practices not related to personal injury.

Qualified Person

For the purposes of this manual, a qualified person, as stated in NFPA 70E®, is one who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training to recognize and avoid the hazards involved. In addition to the above qualifications, one must also be:

1. trained and authorized to energize, deenergize, clear, ground, and tag circuits and equipment in accordance with established safety practices.
2. trained in the proper care and use of personal protective equipment (PPE) such as rubber gloves, hard hat, safety glasses or face shields, flash clothing, etc., in accordance with established safety practices.
3. trained in rendering first aid if necessary.
Contents

Ch 1 General Information ................................................................. 1
  A. Scope .......................................................................................... 2
  B. Purpose ....................................................................................... 2
  C. Instruction Bulletins Available Electronically .......................... 2
  D. Associated Bulletins ................................................................. 3

Ch 2 Safety ...................................................................................... 4
  A. Safe Work Condition ................................................................. 4
  B. Safety Guidelines ....................................................................... 4
  C. General ....................................................................................... 5
  D. Specific ....................................................................................... 5
  E. Safety Labels ............................................................................. 5

Ch 3 Operation .................................................................................. 6
  A. POWL Vac® 5kV & 15kV Circuit Breaker and Auxiliary Rollout Lift Device .......................................................... 6
    1) Attaching the Circuit Breaker Lift Pan to the Lifting Device ........................................................................... 6
    2) Inserting the Circuit Breaker into the Upper Circuit Breaker Compartment ........................................................ 8
    3) Removing the Circuit Breaker from the Upper Circuit Breaker Compartment .................................................. 9
    4) Loading the Auxiliary Rollout Device onto the Lifting Device ....................................................................... 10
    5) Inserting the Auxiliary Rollout into the Upper Compartment ........................................................................ 11
    6) Removing the Auxiliary Rollout from the Upper Compartment ..................................................................... 13
  B. POWL Vac 38™ Auxiliary Device Rollout Lift Device .................. 14
    1) Preparing the Switchgear for Auxiliary Device Installation ........................................................................... 15
    2) Loading the Auxiliary Rollout onto the Lifting Device .................................................................................. 16
    3) Inserting the Auxiliary Device into the Switchgear ................................................................................... 18
    4) Removing the Auxiliary Device from the Switchgear ................................................................................ 23
    5) Lowering the Auxiliary Device from the Compartment ........................................................................... 26

Ch 4 Recommended Replacement Parts ........................................ 28
  A. Ordering Instructions .................................................................. 28
  B. Recommended Renewal Parts .................................................... 28
Figures

Figure 1  Engaging the Lift Pan to the Lift Device .......................................................... 6
Figure 2  Securing the Lift Pan to the Lift Device .......................................................... 6
Figure 3  PowlVac 5kV & 15kV Lift Device ................................................................. 7
Figure 4  Anti-Rollout Mechanism Engaged ................................................................. 8
Figure 5  Aligning the Lift Pan with the Circuit Breaker Compartment ....................... 8
Figure 6  Bar Block Resting on Compartment Floor (Overhead View) ....................... 9
Figure 7  Lining Up Auxiliary Rollout with Lift Device ................................................. 10
Figure 8  Close-Up of Lift Device without Circuit Breaker Lift Pan ............................ 11
Figure 9  Lining Up Lifting Device with Auxiliary Device Compartment .................... 11
Figure 10 Latching Hooks Secured in Slotted Guide Hole ............................................ 12
Figure 11 Disengaging the Latching Hooks from Slotted Guide Holes ....................... 12
Figure 12 PowlVac 38™ Lift Device ........................................................................... 14
Figure 13 Lift Device in Front of Switchgear ............................................................... 15
Figure 14 Lining up Lift Device with Auxiliary Device ............................................... 16
Figure 15 Operating the Foot Brake ............................................................................ 16
Figure 16 Racking Carriage Latch .............................................................................. 16
Figure 17 T-Pin Inserted into Racking Carriage Latch ............................................... 17
Figure 18 Indicating Stickers for Moving Lift Device .................................................. 17
Figure 19 Latching Hook in Lower Position ............................................................... 18
Figure 20 Latching Hook in Upper Position ............................................................... 18
Figure 21 Latching Hooks Secured to Auxiliary Compartment .................................. 19
Figure 22 Operating the Lift Device ............................................................................ 19
Figure 23 Aligning the Lift Pan with Latching Hook .................................................... 19
Figure 24 Racking the Auxiliary Device into the Compartment ................................. 20
Figure 25 Auxiliary Device Engaging the Anti-Rollout ............................................... 20
Figure 26 Disengaging the Auxiliary Device from the Carriage Block ....................... 20
Figure 27 Carriage Block Extension Storage ............................................................... 21
Figure 28 Aligning the Carriage Block Extension with Auxiliary Device .................... 21
Figure 29 Carriage Block Extension Installed ............................................................. 21
Figure 30 Close-Up of Racking Mechanism Engaged ................................................. 22
Figure 31 Aligning the Lower Latching Hooks into the Lower Compartment ............. 22
Figure 32 Engaging Racking Latch Override ............................................................. 24
Figure 33 Disengaging Anti-Rollout for Auxiliary Rollout Device Removal ............... 25
Figure 34 Removing Auxiliary Rollout from Upper Compartment ............................ 26
Figure 35 Disengaging the Auxiliary Rollout from the Lift Device ............................ 27
Tables

Table A  Replacement Parts  .............................................................................................29
This page is intentionally left blank.
**Ch 1 General Information**

**WARNING**

The equipment described in this document may contain high voltages and currents which can cause death or serious injury.

The equipment is designed for use, installation, and maintenance by knowledgeable users of such equipment having experience and training in the field of high voltage electricity. This document and all other documentation shall be fully read, understood, and all warnings and cautions shall be abided by. If there are any discrepancies or questions, the user shall contact Powell immediately at 1.800.480.7273.

**WARNING**

Prior to adjustments, servicing, maintenance, or any act requiring the operator to make physical contact with the equipment, the power source must be disconnected and the equipment grounded. Failure to do so may result in death or serious injury.

**NOTICE**

The information in this instruction bulletin is not intended to explain all details or variations of the Powell equipment, nor to provide for every possible contingency or hazard to be met in connection with installation, testing, operation, and maintenance of the equipment. For additional information and instructions for particular problems, which are not presented sufficiently for the user’s purposes, contact Powell at 1.800.480.7273.

**NOTICE**

Powell reserves the right to discontinue and to change specifications at any time without incurring any obligation to incorporate new features in products previously sold.
A. **Scope**

The information in this instruction bulletin describes the operation of the following Lift Devices.

- 35351G99980004 - 97" Circuit Breaker and Auxiliary Lift Device for PowlVac® and PowlVac-AR® 5kV & 15kV Switchgear
- 35351G99980000 - 107" Circuit Breaker and Auxiliary Lift Device for PowlVac® and PowlVac-AR® 5kV & 15kV Switchgear
- 28289G1192587 - Auxiliary Lift Device for PowlVac 38™ and PowlVac 38-AR™ Switchgear

B. **Purpose**

The information in this instruction bulletin is intended to provide details required to properly operate and maintain the lift devices described in Ch 1 General Information, A. Scope.

This instruction bulletin provides:

1. Safety guidelines
2. General descriptions of the operation for the lift device
3. Instructions for installation and removal of the circuit breaker or auxiliary device rollout used in PowlVac and PowlVac-AR 5kV & 15kV and PowlVac 38 and PowlVac 38-AR Switchgear
4. Illustrations, photographs, and description of the lift device as used to install a circuit breaker or auxiliary device rollout used in PowlVac and PowlVac-AR 5kV & 15kV and PowlVac 38 and PowlVac 38-AR Switchgear

The illustrations contained in this document may not represent the exact construction details of each particular switchgear installation. The illustrations in this document are provided as general information to aid in showing component locations only.

**WARNING**

Follow the appropriate safety precautions while handling any of the equipment. Failure to do so may result in death or serious injury.

To the extent required, the products described herein meet the applicable ANSI, IEEE, and NEMA Standards; however, no such assurance is given with respect to local codes and ordinances which may vary greatly.

C. **Instruction Bulletins Available Electronically**

Changes to the instruction bulletin may be implemented at any time and without notice. Go to powellind.com to ensure use of the current instruction bulletin for Powell equipment.

For more information visit powellind.com. To contact the Powell Service Division call 1.800.480.7273 or 713.944.6900, or email info@powellservice.com.

For specific questions or comments pertaining to this instruction bulletin email documents@powellind.com with the IB number in the subject line.
D. ASSOCIATED BULLETINS

- 01.4IB.51000C PowlVac® Metal-Clad Switchgear
- 01.4IB.51200C PowlVac-AR® Arc Resistant Switchgear
- 01.4IB.65202C PowlVac 38-AR™ Arc Resistant Switchgear
- 01.SUP.51200B Supplement to 01.4IB.51200B for Type 2C Accessibility
- 01.SUP.65202B Supplement to 01.4IB.65202B for Type 2C Accessibility for 1200A Equipment Only
- 01.4IB.51056B PowlVac® ARM Automatic Racking Mechanism Vacuum Circuit Breaker
- 01.4IB.60201A PowlVac® STD Vacuum Circuit Breaker
- 01.4IB.60301A PowlVac® STD 63kA Vacuum Circuit Breaker
- 01.4IB.60202 PowlVac® CDR Vacuum Circuit Breaker
- 01.4IB.60302 PowlVac® CDR 63kA Vacuum Circuit Breaker
- 01.4IB.60203 PowlVac® CDA 5 & 15kV Circuit Breaker
- 01.4IB.60303 PowlVac® CDA 63kA Vacuum Circuit Breaker
- 01.4IB.60304 PowlVac® ARG 63kA Automatic Racking Generator Circuit Breaker
Ch 2  Safety

A.  SAFE WORK CONDITION

The information in Section A is quoted from NFPA 70E 2012 - Article 120, 120.1 Establishing an Electrically Safe Work Condition.

120.1 Process of Achieving an Electrically Safe Work Condition

1. Determine all possible sources of electrical supply to the specific equipment. Check applicable up-to-date drawings, diagrams, and identification tags.

2. After properly interrupting the load current, OPEN the disconnecting device(s) for each source.

3. Wherever possible, visually verify that all blades of the disconnecting devices are fully OPEN or that drawout type circuit breakers are withdrawn to the fully disconnected position.

4. Apply lockout/tagout devices in accordance with a documented and established policy.

5. Use an adequately rated voltage detector to test each phase conductor or circuit part to verify they are deenergized. Test each phase conductor or circuit part both phase-to-phase, and phase-to-ground. Before and after each test, determine that the voltage detector is operating satisfactorily.

6. Where the possibility of induced voltages or stored electrical energy exists, ground the phase conductors or circuit parts before touching them. Where it could be reasonably anticipated that the conductors or circuit parts being deenergized could contact other exposed energized conductors or circuit parts, apply ground connecting devices rated for the available fault duty.

B.  SAFETY GUIDELINES

Study this instruction bulletin and all other associated documentation before using the lift device.

Each user has the responsibility to instruct and supervise all personnel associated with usage, installation, operation, and maintenance of this equipment on all safety procedures. Furthermore, each user has the responsibility of establishing a safety program for each type of equipment encountered.

It is mandatory that the following rules be observed to ensure the safety of personnel associated with usage, installation, operation, of the lift device.

The safety rules in this instruction bulletin are not intended to be a complete safety program. The rules are intended to cover only some of the important aspects of personnel safety related to using the lift device.

Informational Note: See ANSI/ISA-61010-1 (82.02.01)/UL 61010-1, Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use - Part 1: General Requirements, for rating and design requirements for voltage measurement and test instruments intended for use on electrical systems 1000 V and below.
C. General

1. Only supervised and qualified personnel trained in the usage, installation, operation, and maintenance of the equipment shall be allowed to work on this equipment. It is mandatory that this instruction bulletin, any supplements, and service advisories be studied, understood, and followed.

2. Maintenance programs must be consistent with both customer experience and manufacturer’s recommendations, including service advisories and instruction bulletin(s). A well planned and executed routine maintenance program is essential for equipment reliability and safety.

3. Service conditions shall also be considered in the development of safety programs. Variables include ambient temperature; humidity; number of operations; and any adverse local conditions including excessive dust, ash, corrosive atmosphere, vermin and insect infestations.

D. Specific

1. DO NOT WORK ON ENERGIZED EQUIPMENT. If work must be performed, remove the equipment from service.

2. EXTREME CARE MUST BE EXERCISED TO KEEP ALL PERSONNEL, TOOLS, AND OTHER OBJECTS CLEAR OF MECHANISMS WHICH ARE TO BE OPERATED, DISCHARGED, OR RELEASED. These mechanisms must be serviced only by skilled and knowledgeable personnel capable of releasing each spring load in a controlled manner.

3. DO NOT USE AN OPEN CIRCUIT BREAKER AS THE SOLE MEANS OF ISOLATING A HIGH VOLTAGE CIRCUIT. For complete isolation, the equipment shall be in the disconnected position or shall be withdrawn completely.

4. ALL COMPONENTS SHALL BE DISCONNECTED BY MEANS OF A VISIBLE BREAK AND SECURELY GROUNDED FOR SAFETY OF PERSONNEL PERFORMING OPERATIONS.

E. Safety Labels

The equipment described in this document has DANGER, WARNING, CAUTION, and instruction labels attached to various locations. All equipment DANGER, WARNING, CAUTION, and instruction labels shall be observed.

NOTICE

Warning and Caution labels are located in various places. Do NOT remove or deface any of these warning/caution labels.
Ch 3 Operation

A. PowellVac® 5kV & 15kV Circuit Breaker and Auxiliary Rollout Lift Device

**CAUTION**
The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**
This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

Installing and removing a circuit breaker into or out of the circuit breaker compartment of the switchgear is a two person operation. The use of a circuit breaker pan attachment for the lifting device is required when lifting a circuit breaker (Figure 3, c).

Installing and removing the auxiliary rollout device into or out of the auxiliary compartment of the switchgear is a two person operation. A specialized lifting device is required to install or remove the auxiliary rollout device from both the upper and lower compartments. These procedures are applicable to both upper and lower auxiliary compartments.

1) Attaching the Circuit Breaker Lift Pan to the Lifting Device

Perform the following steps to attach the circuit breaker lift pan to the lifting device:

a. Align the lifting device with the front of the circuit breaker pan (Figure 3, c).

b. Raise the lifting arms by rotating the winch handle (Figure 3, b) in a clockwise motion to align the alignment pin with the lift support (Figure 1).

c. Once the lift pan is engaged with the lift supports, insert the quick release pins into the weld tabs to secure the lift pan to the lifting device (Figure 2).
Figure 3  PowlVac 5kV & 15kV Lift Device

a. Bar Block  
b. Winch Handle  
c. Breaker Pan  
d. Lifting Arm  
e. Wheel  
f. Foot Brake
2) **Inserting the Circuit Breaker into the Upper Circuit Breaker Compartment**

**CAUTION**

The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**

This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

- Ensure the racking mechanism of the circuit breaker is in the "Disconnected" position. The racking arms should be facing towards the primary disconnects.
- Align the lifting device with the front of the circuit breaker, apply the foot brake (**Figure 3, f**) and push the circuit breaker onto the lift pan until the front wheel of the circuit breaker engages the anti-rollout mechanism (**Figure 4, b**).

![Figure 4 Anti-Rollout Mechanism Engaged](image)

a. Front Wheel
b. Anti-Rollout Latch

c. Rotate the winch handle (**Figure 3, b**) in a clockwise motion until the circuit breaker is about 2 inches off the floor, enabling movement of the device.

**CAUTION**

To reduce the chance of injury or damage to the equipment, do NOT raise the lift device pan any higher than necessary to clear the floor.

d. Open the circuit breaker compartment door on the switchgear.
e. Release the foot brake and align the lift device with the front of the switchgear (**Figure 9**).
f. Rotate the winch handle clockwise to raise the circuit breaker to the height of the upper compartment (**Figure 5**).

**Figure 5 Aligning the Lift Pan with the Circuit Breaker Compartment**
g. Move the lift device towards the compartment until the bar blocks *(Figure 6, b)* have overlapped the compartment.

h. Rotate the winch handle counterclockwise until the bar blocks rest on the compartment floor, inside the compartment door flange *(Figure 6)*.

![Bar Block Resting on Compartment Floor (Overhead View)](image)

- a. Compartment Floor
- b. Bar Block
- c. Lifting Arm

i. Apply the foot brake *(Figure 3, f)* and then pull the anti-rollout latch *(Figure 4, b)* to release the circuit breaker from the lift pan and push the circuit breaker into the compartment until a hard stop is encountered. A loud click may be heard when the racking mechanism of the compartment engages the bottom of the circuit breaker. At this point the circuit breaker is completely off the lift device.

j. Raise the lift pan by rotating the winch handle clockwise so that the bar blocks disengage the compartment flange inside the circuit breaker compartment.

k. Release the foot brake and then roll the lifting device out of the compartment and lower the lift pan back to the transport position by rotating the winch handle in a counterclockwise motion. Move the lifting device away from the switchgear.

l. Close and latch the circuit breaker compartment door. The circuit breaker is now ready to be racked into the “Connected” position.

### 3) Removing the Circuit Breaker from the Upper Circuit Breaker Compartment

**CAUTION**

*This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.*

- a. Ensure the racking mechanism of the circuit breaker is in the "Disconnected" position. If it is not, rack the unit to the "Disconnected" position and then open the circuit breaker compartment door.
- b. Align the lift device with the front of the switchgear.
- c. Rotate the winch handle *(Figure 3, b)* clockwise to raise the lift device to the upper compartment.
- d. Move the lift device towards the compartment until the bar blocks *(Figure 6, b)* have overlapped the compartment.
e. Rotate the winch handle counterclockwise until the bar blocks rest on the compartment floor, inside the compartment door flange (Figure 6).

f. Apply the foot brake (Figure 3, f) and then pull the circuit breaker onto the lifting device using the handle until a hard stop is encountered and the device anti-rollout locking mechanism is engaged.

g. Raise the lift pan by rotating the winch handle clockwise so that the bar blocks disengage the compartment flange inside the circuit breaker compartment.

h. Release the foot brake and then roll the lifting device out of the compartment and lower the lift pan back to the transport position by rotating the winch handle in a counterclockwise motion. Move the lifting device away from the switchgear.

i. Close and latch the circuit breaker compartment door.

4) Loading the Auxiliary Rollout Device onto the Lifting Device

b. Remove the quick release pins (Figure 2, a) from the device and lower the carriage assembly until the weld tabs of the horizontal brace (Figure 2, d) clear the cutout (Figure 2, c).

c. Roll the lift device back from the circuit breaker pan until fully disengaged.

d. To load the auxiliary rollout onto the lifting device, position the lifting device in front of the auxiliary rollout so that the lifting arms (Figure 7, d) line up with the guide rails on either side of the auxiliary rollout (Figure 7, b).

e. Push the lifting device towards the rollout until the rollers (Figure 7, c) reach the wheel stop block (Figure 8, a) on the lifting arm.

**Figure 7** Lining Up Auxiliary Rollout with Lift Device

- a. Auxiliary Rollout
- b. Guide Rail
- c. Roller
- d. Lifting Arm

**NOTICE**

*If the circuit breaker pan is connected to the lift device, it will need to be removed prior to lifting an auxiliary rollout device.*

Perform the following to load the auxiliary rollout device onto the lifting device. If the circuit breaker pan is connected start at step "a", if not, start at step "d":

a. To remove the circuit breaker pan, turn the winch counterclockwise to lower the carriage assembly until the circuit breaker pan reaches the floor.
Figure 8  Close-Up of Lift Device without Circuit Breaker Lift Pan

- **Wheel Stop Block**
- **Anti-Rollout Latch**

**f.** The anti-rollout latch will engage (Figure 8, b) once the wheel stop is reached to secure the rollout on the lifting arms.

**5) Inserting the Auxiliary Rollout into the Upper Compartment**

---

**CAUTION**

The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**

This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

Once the auxiliary rollout is secure on the lifting device, the lifting arms must be raised approximately two inches off of the floor so the lifting device can be moved.

---

**a.** To raise the lifting carriage, rotate the winch handle (Figure 3, b) of the lifting device in a clockwise motion.

**CAUTION**

To reduce the chance of injury or damage to the equipment, do NOT raise the lift device pan any higher than necessary to clear the floor.

**b.** Ensure the rollout mechanism is in the "Disconnected" position. If it is not, rack the unit to the "Disconnected" position and then open the auxiliary rollout compartment door.

**c.** Align the lift device with the front of the switchgear (Figure 9).
d. Rotate the winch handle clockwise to raise the auxiliary rollout to the height of the upper compartment.

Figure 10  Latching Hooks Secured in Slotted Guide Hole

![Image](image1.png)

- a. Latching Hook
- b. Slotted Guide Hole

e. Push the lift device towards the switchgear until the latching hooks align and then lower the latching hooks until they engage the slotted guide holes inside the auxiliary compartment (Figure 10).

f. The lift device should now be securely attached to the switchgear.

g. Apply the foot brake (Figure 3, f) then pull the anti-rollout latch (Figure 8, b) to release the auxiliary rollout from the lifting arms and push the auxiliary rollout into the compartment until a hard stop is encountered. A loud click may be heard when the racking mechanism of the compartment engages the bottom of the auxiliary rollout.

i. Raise the lifting arms by rotating the winch handle clockwise so that the latching hooks disengage the slotted guide holes inside the auxiliary compartment (Figure 11).

Figure 11  Disengaging the Latching Hooks from Slotted Guide Holes

![Image](image2.png)

- a. Latching Hook
- b. Slotted Guide Hole

j. Release the foot brake (Figure 3, f) and then roll the lifting device out of the compartment and lower the carriage back to the transport position by rotating the winch handle in a counterclockwise motion. Move the lift device away from the switchgear.

k. Close and latch the auxiliary rollout compartment door. The auxiliary device is now ready to be racked into the “Connected” position.

h. Visually check to see that the compartment anti-rollout latch is engaged.

**NOTICE**

The compartment anti-rollout latch must be fully engaged.
6) Removing the Auxiliary Rollout from the Upper Compartment

**CAUTION**

The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**

This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

- a. Ensure the rollout mechanism is in the "Disconnected" position. If it is not, rack the unit to the "Disconnected" position and then open the auxiliary rollout compartment door.
- b. Align the lift device with the front of the switchgear.
- c. Rotate the winch handle *(Figure 3, b)* clockwise to raise the lift device to the upper compartment.
- d. Push the lift device towards the switchgear until the latching hooks align and then lower the latching hooks until they engage the slotted guide holes inside the auxiliary compartment *(Figure 10).*
- e. The lift device should now be securely attached to the switchgear.
- f. Apply the foot brake *(Figure 3, f)* and then pull the auxiliary rollout onto the lifting device using the handle until a hard stop is encountered and the device anti-rollout locking mechanism is engaged.
- g. Raise the lifting arms by rotating the winch handle in a clockwise motion so that the latching hooks disengage the slotted guide holes inside the auxiliary compartment *(Figure 11).*
- h. Release the foot brake and then roll the lifting device out of the compartment and lower the carriage back to the transport position. Move the lift device away from the switchgear.
- i. Close and latch the auxiliary rollout compartment door.
B. **PowlVac 38™ Auxiliary Device Rollout Lift Device**

*Figure 12  PowlVac 38™ Lift Device*

- **a.** Latching Hook (in upper position)
- **b.** Handle
- **c.** Winch Handle
- **d.** Lower Position for Latching Hook
- **e.** Breaker Lift Pan
- **f.** Wheel
- **g.** Foot Brake
Installing and removing the auxiliary rollout device into or out of the auxiliary compartment of the switchgear is a two person operation. A specialized lifting device is required to install or remove the auxiliary rollout device from both the upper and lower compartments. These procedures are applicable to both upper and lower auxiliary compartments.

1) Preparing the Switchgear for Auxiliary Device Installation

**NOTICE**

*Installing and removing the auxiliary rollout device into or out of the auxiliary compartment of the switchgear is a two person operation. A specialized lifting device is required to install or remove the auxiliary rollout device from both the upper and lower compartments. These procedures are applicable to both upper and lower auxiliary compartments.*

**CAUTION**

*The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.*

**CAUTION**

*This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.*

a. Verify that the auxiliary rollout racking mechanism is in the "Disconnected" position. If it's not, rack the unit to the "Disconnected" position and then open the door.

b. When inserting an auxiliary rollout device into the upper rollout compartment, open the instrument compartment door (Figure 13, c) below the auxiliary rollout compartment (Figure 13, a). This ensures that any equipment protruding from the face of the instrument compartment won't be damaged when lifting the auxiliary rollout.

---

**Figure 13 Lift Device in Front of Switchgear**

- **a.** Auxiliary Compartment (Upper)
- **b.** Lift Device
- **c.** Instrument Compartment
- **d.** Auxiliary Rollout
2) Loading the Auxiliary Rollout onto the Lifting Device

**CAUTION**
The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**
This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

Perform the following steps to load the auxiliary device onto the lifting device:

a. Ensure the racking carriage latch (Figure 16, c) on the lift device is racked to the back of the lift device (fully racked on the lift device).

b. Face the front of the auxiliary rollout (cover side) towards the front of the lift device (Figure 14).

c. Align the wheels of the auxiliary rollout with the channels on the pan of the lift device (Figure 14).

**Figure 14  Lining up Lift Device with Auxiliary Device**

d. Apply the foot brake (Figure 15) then push the auxiliary rollout onto the lift device pan until the racking carriage latch touches the front cover of the auxiliary rollout.

**Figure 15  Operating the Foot Brake**

e. Remove the T-pin (Figure 16, a) from its storage position on the top of the lifting device carriage block and insert through the racking carriage latch (Figure 16, c) and the front tab (Figure 16, b) on the front of the rollout device (Figure 17).
f. Locate the latching hooks on each side of the lift device and place them in the appropriate location.
   i. For insertion into an upper auxiliary compartment, the latching hooks should be on the upper position of the stabilizing uprights (Figure 12, a); at the top of their slotted guide hole.
   ii. For insertion into a lower auxiliary compartment, the latching hooks should be flipped over and placed on the opposite upright on the lower position of the stabilizing uprights (Figure 12, d); at the top of their slotted guide hole.

g. The lifting pan must be raised approximately two inches off of the floor to move the lifting device (Figure 18). To raise the lifting device pan, release the foot brake (Figure 15) and then rotate the winch handle (Figure 22, a) in a clockwise motion to raise the lift pan.

---

**CAUTION**

To reduce the chance of injury or damage to the equipment, do NOT raise the lift truck pan any higher than necessary to clear the floor when moving the device. Align the arrows shown in Figure 18 for correct transfer height.
3) **Inserting the Auxiliary Device into the Switchgear**

**CAUTION**

The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**

This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

Perform the following steps to insert the auxiliary rollout into the switchgear:

- **Move the lift device into place in front of the auxiliary compartment (Figure 13).** Align the lift device in front of the switchgear such that the latching hooks clear the inside of the compartment opening.

- **For upper compartments, push the lift device towards the switchgear until the cutouts (Figure 20, c) on the bottom of the latching hooks are over the lower flange (Figure 20, d) of the front door opening of the compartment (approximately two inches into the compartment).** For lower compartments, push the lift device towards the switchgear until the bolt on the latching hooks (Figure 19, c) are over the lower flange of the front door opening of the compartment.

- **Lower the latching hooks onto the lower flange of the compartment opening by loosening the knobs (Figure 21, b) and sliding the latching hooks down the slotted guide hole (Figure 21, c) until they hold captive on the flange.**
a. Removable Pin
b. Latching Hook Adjustment Knob
c. Slotted Guide Hole (Upper)
d. Latching Hook

d. Tighten the latching hook knob (Figure 21, b) on each latching hook to secure the hooks in place. The lift device should now be securely attached to the switchgear.
e. Apply the foot brake (Figure 15) and raise the auxiliary rollout into position by rotating the winch handle (Figure 22, a) in a clockwise motion. Continue to rotate the winch handle until the top of the lifting pan comes into contact with the bottom of the latching hook on both sides (Figure 23, c & d).
f. Visually check that the channel on the latching hook and the channel on the pan are now aligned with one another (Figure 23, c & d).
g. Use the removable pins (Figure 21, a) on the lift device to lock the lift device pan in place by inserting them into the 1/4” holes on the backside of the latching hooks.
h. Minor adjustments in lift pan height (made by turning the winch handle) may be necessary to align the pins with their mating holes.
i. Minor adjustments to the latching hooks position may be required. Loosen the latching hook knob (Figure 21, b) on the latching hooks to adjust the pins mating holes to the left or right. Once the pins are fully inserted into the alignment holes, retighten the knobs on the latching hooks.

j. Rack the auxiliary rollout from the lift device into the compartment using the racking drive nut protruding from the center of the back of the lift device pan and a ¾” socket (Figure 24). Turn the racking drive nut in a clockwise motion to rack the auxiliary rollout forward into the compartment. At the end of the carriage block travel, the auxiliary rollout will engage the anti-rollout latch in the auxiliary rollout compartment of the switchgear (Figure 25, b).

**NOTICE**
The anti-rollout latch must be fully engaged.

Figure 24  Racking the Auxiliary Device into the Compartment

Figure 25  Auxiliary Device Engaging the Anti-Rollout

Figure 26  Disengaging the Auxiliary Device from the Carriage Block

k. Visually check to see that the anti-rollout latch under the auxiliary rollout is engaged.

l. Once the anti-rollout latch engagement is confirmed, remove the T-pin from the racking carriage latch (Figure 26, b) and place in its storage position on top of the lifting device carriage block. Rotate the racking drive nut (Figure 24, a) counterclockwise to move the carriage block away from the auxiliary rollout.
m. The lift device pan carriage block should be racked back approximately 8 inches. With the carriage block in this position, remove the carriage block extension from its storage position (Figure 27, a) and slide it over the latch on the carriage block (Figure 28).

Figure 27 Carriage Block Extension Storage

![Carriage Block Extension Storage](image)

a. Carriage Block Extension Storage Position

Figure 28 Aligning the Carriage Block Extension with Auxiliary Device

![Alignment of Carriage Block Extension](image)

a. Metal Tab
b. Carriage Block Extension

c. After the carriage block extension is secure, turn the racking nut in a clockwise motion to align the holes at the tip of the carriage block extension (Figure 28, b) and the holes in the metal tab (Figure 28, a) protruding from the front of the auxiliary device.

o. Once these holes are aligned, remove the T-pin from its storage position on top of the lifting device carriage block and insert it through the carriage block extension piece and the hole in the tab protruding from the front of the auxiliary device (Figure 29). Continue to turn the racking nut in a clockwise motion to finish racking in the auxiliary device.

Figure 29 Carriage Block Extension Installed

![Carriage Block Extension Installed](image)

a. Carriage Block Extension

d. When the carriage block has reached the end of its travel, the auxiliary rollout compartment’s raking mechanism should be engaged with the auxiliary rollout. Confirm this visually (Figure 30).

e. Remove the T-pin from the carriage block extension piece and place it in its storage position.

f. The lifting device pan carriage block may now be racked back to its starting position on the lifting pan by continuing to turn the racking nut in a counterclockwise motion.
s. Remove and return the carriage block extension to its original storage position (*Figure 27, a*).

t. The removable pins in the latching hooks (*Figure 21, a*) may now be removed and placed back in their storage location holes on the vertical channels on either side of the lifting device.

i. Minor adjustments in lift pan height may be required to remove the pins.

ii. Loosening the latching hooks may be required to remove the pins.

iii. Once the pins are removed, retighten the knobs on the latching hooks.

u. Lower the lifting pan back to its original position (approximately two inches above the floor) by rotating the winch handle of the lift device in a counterclockwise motion.

v. Raise the latching hooks (*Figure 12, a*) from the front of the compartment by loosening the latching hook knobs (*Figure 21, b*) and sliding the latching hooks upward along their guide slots. Retighten the knobs to hold the latching hooks in place at the top of the guide slots.

w. Release the foot brake (*Figure 15*) and move the lift device away from the switchgear.

x. Ensure the auxiliary rollout compartment racking mechanism is engaged by looking under the auxiliary rollout in the center of the compartment (*Figure 30*).

---

**Figure 30  Close-Up of Racking Mechanism Engaged**

![Close-Up of Racking Mechanism Engaged](image)

- **a.** Auxiliary Compartment Racking Mechanism
- **b.** Racking Latch Override

y. Close and latch the auxiliary rollout compartment door. Close and latch the instrument compartment door if opened to insert an upper rollout device. The auxiliary device is now ready to be racked into the “Connected” position.
4) Removing the Auxiliary Device from the Switchgear

**CAUTION**

The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**

This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

Perform the following steps to remove the auxiliary rollout from the switchgear:

- a. Rack the auxiliary rollout device to the “Disconnected” position.
- b. Open the auxiliary rollout compartment door.
- c. When removing an auxiliary rollout device from the upper rollout compartment, open the instrument compartment door below the auxiliary rollout compartment (Figure 13, c). This ensures that any equipment protruding from the face of the instrument compartment won’t be damaged when lowering the auxiliary rollout.
- d. Locate the latching hooks on each side of the lift device and place them in the appropriate location.
- i. For removal from an upper auxiliary compartment, the latching hooks should be on the upper position of the stabilizing uprights; at the top of their slotted guide hole (Figure 12, a).
- ii. For removal from a lower auxiliary compartment, the latching hooks should be flipped over and placed on the opposite upright on the lower position of the stabilizing uprights; at the top of their slotted guide hole (Figure 12, d).
- e. The lifting pan must be raised approximately two inches off of the floor to move the lifting device (Figure 18). To raise the lifting device pan, release the foot brake (Figure 15) and then rotate the winch handle (Figure 22, a) in a clockwise motion to raise the lift pan.
- f. Move the lift device into place in front of the auxiliary compartment (Figure 13). Align the lift device in front of the switchgear such that the latching hooks clear the inside of the compartment opening.
- g. For upper compartments, push the lift device towards the switchgear until the cutouts (Figure 20, c) on the bottom of the latching hooks are over the lower flange (Figure 20, d) of the front door opening of the compartment (approximately two inches into the compartment). For lower compartments, push the lift device towards the switchgear until the bolt on the latching hooks (Figure 19, c) are over the lower flange of the front door opening of the compartment.
- h. Lower the latching hooks onto the lower flange of the compartment opening by loosening the knobs (Figure 21, b) and sliding the latching hooks down the slotted guide hole (Figure 21, c) until they hold captive on the flange. The C-channels on the latching hooks should be flush with the 2 inch slot on the rail and with the inside of the compartment opening (Figure 31).
i. Tighten the knob (Figure 21, b) on each latching hook to secure the hooks in place. The lift device should now be securely attached to the switchgear.

j. Apply the foot brake (Figure 15) and raise the lift pan into position by rotating the winch handle (Figure 22, a) in a clockwise motion. Continue to rotate the winch handle until the top of the lifting pan comes into contact with the bottom of the latching hook on both sides (Figure 23, c & d).

k. Visually check that the channel on the latching hook and the channel on the lift pan are now aligned with one another (Figure 23, c & d).

l. Use the removable pins (Figure 21, a) on the lift device to lock the lift device pan in place by inserting them into the 1/4” holes on the backside of the latching hooks.

   i. Minor adjustments in lift pan height (made by turning the winch handle) may be necessary to align the pins with their mating holes.

   ii. Minor adjustments to the latching hook position may be required to fully align and insert the pins. Loosen the latching hook using the knob (Figure 21, b) and move it slightly until the pin is fully inserted. Retighten the knob after the pins are fully inserted.

m. Remove the carriage block extension from its original storage location, (Figure 27, a) and slide the carriage block extension piece over the existing latch on the carriage block (Figure 28). Secure the extension piece in place by pushing it towards the back of the lifting device.

n. After the carriage block extension is secure, turn the racking drive nut (Figure 24, a) in a clockwise motion to align the holes at the tip of the carriage block extension (Figure 28, b) and the holes in the metal tab (Figure 28, a) protruding from the front of the auxiliary device. A 3/4” socket can be used to move the lift device carriage block into the compartment.
o. At the end of the carriage block travel, remove the T-pin from its storage position on the top of the lifting device carriage block and insert through the racking carriage latch and the front tab on the front of the rollout device (Figure 29).

p. Engage the auxiliary compartment racking latch override lever by holding down the racking latch and placing the override lever over the roll pin protruding out of the side of the racking latch (Figure 32). This will hold the racking latch in the compartment down and allow the auxiliary rollout to be removed from the compartment.

q. This is a two person operation (Figure 33). Once the carriage block latch is engaged and the auxiliary compartment racking latch is overridden, lift the anti-rollout latch (Figure 25, b) on the auxiliary rollout to disengage it from the auxiliary rollout compartment while simultaneously turning the racking drive nut on the lifting device counterclockwise to move the auxiliary rollout out of the compartment. Once the front cover is approximately 4 inches out, release the anti-rollout latch.

r. Turn the racking drive nut (Figure 24, a) on the lifting device counterclockwise until the front two wheels of the auxiliary rollout are on the lifting pan.

s. Remove the T-pin from the carriage block extension piece and place it in its storage position.

t. The extension latch can now be removed from the carriage block and secured in its original position along the back face of the lifting pan (Figure 27, a).
u. Rotate the racking drive nut on the lifting device clockwise until the holes in the racking carriage latch (Figure 16, c) are aligned with the holes in the tab protruding from the front of the auxiliary device (Figure 16, b). Once these holes are aligned, remove the T-pin (Figure 16, a) from its storage position on top of the lifting device carriage block and insert it through the holes in the racking carriage latch and the holes in the tab protruding from the front of the auxiliary device (Figure 17). Turn the racking drive nut (Figure 24) on the lifting device counterclockwise to remove the auxiliary rollout device from the compartment until the carriage block has reached its starting position (Figure 34).

5) Lowering the Auxiliary Device from the Compartment

**CAUTION**

The following steps must be performed. If not, injury to personnel or damage to the equipment may occur.

**CAUTION**

This is a two (2) person job. Do not attempt to perform this procedure alone, as it may result in injury to the user or damage to the equipment.

Perform the following steps to lower the auxiliary rollout from the compartment and remove from the lifting device:

a. The removable pins in the latching hooks (Figure 21, a) may now be removed and placed back in their storage location (holes of the vertical channels on either side of the lift device).
   i. Minor adjustments in lift pan height may be required to remove the pins.
   ii. Loosening the latching hooks may be required to remove the pins.
   iii. Once the pins are removed, retighten the knobs on the latching hooks.

b. Lower the lift pan back to its original position (approximately 2 inches above the floor) by rotating the winch handle (Figure 22) in a counterclockwise motion.
c. Raise the latching hooks from the front of the compartment by loosening the latching hook knobs (Figure 21, b) and sliding the latching hooks upward along their guide slots. Retighten the knobs to hold the latching hooks in place at the top of the guide slots.

d. Release the foot brake (Figure 15) and move the lift device away from the switchgear.

e. Close and latch the auxiliary rollout compartment door. Close and latch the instrument compartment door if opened for upper auxiliary device removal.

f. When the rollout is being removed from a lower compartment, remove both latching hooks from their lower positions on the front of the lift truck and place in their respective upper positions.

g. Lower the lifting device pan to the floor. Remove the T-pin from the racking carriage latch and the front tab (Figure 35) on the front of the rollout device and place it in its storage position. Push the rollout device off of the lifting device pan.

Figure 35  Disengaging the Auxiliary Rollout from the Lift Device
Ch 4  **Recommended Replacement Parts**

A. **Ordering Instructions**

1. To order Replacements Parts from Powell, visit the website at [powellind.com](http://powellind.com) or call 1.800.480.7273.

2. Always specify the complete nameplate information including:
   • Lifting Device Type
   • Serial Number

3. Specify the quantity and description of the part and the instruction bulletin number. If the part is in any of the recommended renewal parts tables, specify the catalog number. If the part is not in any of the tables, a description should be accompanied by a marked illustration from this instruction bulletin or photo.

4. Standard hardware such as screws, bolts, nuts, washers, etc., should be purchased locally.

B. **Recommended Renewal Parts**

Since parts may be improved periodically, replacement parts may not be identical to the original parts. *Table A* lists the recommended replacement parts to be carried in stock by the user. The recommended quantity is not specified.
### Table A Replacement Parts

<table>
<thead>
<tr>
<th>Part Name</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PowlVac® 5kV &amp; 15kV Lift Device</strong></td>
<td></td>
</tr>
<tr>
<td>Winch</td>
<td>0282A3764G002</td>
</tr>
<tr>
<td>Bearing Pulley</td>
<td>0282A4556P001</td>
</tr>
<tr>
<td>Pulley Cable Retainer</td>
<td>07070P00000134</td>
</tr>
<tr>
<td>Pulley</td>
<td>0282A4469P001</td>
</tr>
<tr>
<td>Spacer - 0.25 thick x 0.5 I.D. x 1 O.D.</td>
<td>0282A4481P004</td>
</tr>
<tr>
<td>Spacer - 0.306 thick x 0.5 I.D. x 1 O.D.</td>
<td>0282A4481P002</td>
</tr>
<tr>
<td>Spacer - 0.625 thick x 0.5 I.D. x 1 O.D.</td>
<td>0282A4481P003</td>
</tr>
<tr>
<td>Bearing Torrington IR88</td>
<td>0282A2000P055</td>
</tr>
<tr>
<td>Retaining Ring</td>
<td>0282A3531P001</td>
</tr>
<tr>
<td>Roller</td>
<td>0282A3747P001</td>
</tr>
<tr>
<td>Min Cam Follower</td>
<td>0282A4569P001</td>
</tr>
<tr>
<td>Anti-Rollout Latch</td>
<td>150003P071</td>
</tr>
<tr>
<td>Circuit Breaker Lift Pan</td>
<td>150003G011</td>
</tr>
<tr>
<td><strong>PowlVac 38™ Lift Device</strong></td>
<td></td>
</tr>
<tr>
<td>Winch</td>
<td>0282A3764P002</td>
</tr>
<tr>
<td>Rear Caster Swivel</td>
<td>0282A4555P001</td>
</tr>
<tr>
<td>Rear Pedal Floor Lock</td>
<td>2478T620</td>
</tr>
<tr>
<td>T-Handle Push-Button Quick Release Pin w/Lanyard - 1/4&quot; dia., 2&quot; usable length</td>
<td>93750A315</td>
</tr>
<tr>
<td>Carr Lane Aluminum Threaded Stud Knob 3/4&quot; - 16 Stud 1&quot; Long</td>
<td>CL-5A-SHIK4T</td>
</tr>
<tr>
<td>Moveable Wheel Channel</td>
<td>S28289H1192608</td>
</tr>
<tr>
<td>Right Side Latching Hook</td>
<td>S28289P1192642</td>
</tr>
<tr>
<td>Left Side Latching Hook</td>
<td>S28289P1192641</td>
</tr>
<tr>
<td>Lift Truck Latch Extension Bracket</td>
<td>S28289P1192677</td>
</tr>
<tr>
<td>Front Wheel</td>
<td>0346A9338P001</td>
</tr>
</tbody>
</table>
01.4IB.65220A
Lift Devices

for use with PowlVac® and PowlVac-AR®, 5 & 15kV Switchgear
and PowlVac 38™ and PowlVac 38-AR™ Switchgear

December 2017