







Instruction Bulletin - 01.4IB.26100A PowlVac® 63kA Enclosed Indoor Disconnect Switch



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Signal Words

As stated in ANSI Z535.4-2011 (R2017), 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:

A DANGER

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

A WARNING

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

A CAUTION

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

CAUTION

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:

- 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.



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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.

A 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 following PowlVac® 63kA Enclosed Indoor Disconnect Switch.

B. PURPOSE

The information in this instruction bulletin is intended to provide details required to properly install, operate, and maintain the PowlVac 63kA Enclosed Indoor Disconnect Switch described in *Ch 1 General Information, A. Scope*.

This instruction bulletin provides:

- 1. Safety guidelines
- 2. General descriptions of the operation and maintenance of the PowlVac 63kA enclosed indoor disconnect switch
- 3. Instructions for installation and placing the disconnect switch into service
- 4. Instructions for part replacement
- 5. Information for ordering renewal parts
- 6. Illustrations, photographs, and description of the disconnect switch

The illustrations contained in this document may not represent the exact construction details of the PowlVac 63kA Enclosed Indoor Disconnect Switch. The illustrations in this document are provided as general information to aid in showing component locations.

All illustrations and photos are shown using deenergized equipment.

▲ 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 email *serviceinfo@powellind.com*.

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









Ch 2 Safety

A. SAFE WORK CONDITION

The information in Section A is quoted from NFPA 70E 2018 - Article 120, 120.5 Establishing an Electrically Safe Work Condition.

120.5 Process or Establishing and Verifying an Electrically Safe Work Condition. Establishing and verifying an electrically safe condition shall include all of the following steps, which shall be performed in the order presented, if feasible:

- 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.
- 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. Release stored electrical energy.
- 5. Release or block stored mechanical energy.
- Apply lockout/tagout devices in accordance with a documented and established procedure.
- 7. Use an adequately rated portable test instrument to test each phase conductor or circuit part to verify it is de-energized. Test each phase conductor or circuit part both phase-to-phase and phase-to-ground. Before and after each test, determine that the test instrument is operating satisfactorily through verification on any known voltage source.

- Exception No. 1: An adequately rated permanently mounted test device shall be permitted to be used to verify the absence of voltage of the conductors or circuit parts at the work location, provided it meets the all following requirements: (1) It is permanently mounted and installed in accordance with the manufacturer's instructions and tests the conductors and circuit parts at the point of work; (2) It is listed and labeled for the purpose of verifying the absence of voltage; (3) It tests each phase conductor or circuit part both phase-to-phase and phase-toground; (4) The test device is verified as operating satisfactorily on any known voltage source before and after verifying the absence of voltage.
- **N** Exception No. 2: On electrical systems over 1000 volts, noncontact test instruments shall be permitted to be used to test each phase conductor.
 - Informational Note No. 1: See UL 61010-1, Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements, for rating, overvoltage category, and design requirements for voltage measurement and test instruments intended for use on electrical system 1000 volts and below.
- N Informational Note No. 2: For additional information on rating and design requirements for voltage detectors, refer to IEC 61243-1, Live Working Voltage Detectors Part 1: Capacitive type to be used for voltages exceeding 1kV a.c., or IEC 61243-2, Live Working Voltage Detectors Part 2: Resistive type to be used for voltages of 1kV to 36kV a.c., or IEC 61243-3, Live Working Voltage Detectors Part 3: Two-pole voltage type.



- 8. 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 de-energized could contact other exposed energized conductors or circuit parts, apply temporary protective grounding equipment in accordance with the following:
 - a. Placement. Temporary protective grounding equipment shall be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to a shock hazard (i.e., hazardous differences in electrical potential). The location, sizing, and application of temporary protective grounding equipment shall be identified as part of the employer's job planning.
 - Capacity. Temporary protective grounding equipment shall be capable of conducting the maximum fault current that could flow at the point of grounding for the time necessary to clear the fault.
- N Informational Note: ATSM F855, Standard Specification for Temporary Protective Grounds to be Used on De-energized Electric Power Lines and Equipment, is an example of a standard that contains information on capacity of temporary protective grounding equipment.
 - c. Impedance. Temporary protective grounding equipment and connections shall have an impedance low enough to cause immediate operation of protective devices in case of unintentional energizing of the electric conductors or circuit parts.

B. SAFETY GUIDELINES

Study this instruction bulletin and all other associated documentation before uncrating the equipment.

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.

The enclosed indoor disconnect switch described in this instruction bulletin is operated by a high-energy, high-speed mechanism that is interlocked to provide specific operating sequences. It is mandatory that the following rules be observed to ensure the safety of personnel associated with usage, installation, operation, and maintenance of this disconnect switch.

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 PowlVac® 63kA Enclosed Indoor Disconnect Switch.

C. GENERAL

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









- 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 disconnect switch reliability and safety.
- 3. Service conditions and disconnect switch applications shall also be considered in the development of safety programs. Variables include ambient temperature; humidity; actual continuous current; thermal cycling; number of operations; interrupting duty; and any adverse local conditions including excessive dust, ash, corrosive atmosphere, vermin and insect infestations.

D. 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 when the disconnect switch is handled, operated, or maintained.



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



Ch 3 Equipment Description

A. DISCONNECTING SWITCHES

1) General



Powell is committed to continuous product improvement.

It is possible that improvements occurred between revisions to this document and therefore, may not be described in these instructions. If the equipment does not resemble the photographs and descriptions contained herein, contact Powell before attempting to perform any actions.

The Powell 63kA enclosed indoor disconnect switch is a 3-pole, motor-operated, knife-type "non-load" switch. This disconnect switch does not have current breaking and making capabilities. This disconnect switch meets requirements for short-time current and momentary (peak) withstand current. This disconnect switch has continuous (normal) current rating. Refer to *Table A, Ratings* for disconnect switch ratings.

Table A Ratings				
Category	Rating			
Maximum Voltage	15kV			
Lightning Impulse Withstand Voltage	95kV			
Power Frequency Withstand Voltage	36kV			
Power Frequency	60Hz			
Continuous Current	5000A			
Momentary Withstand Current	172.6kA Peak			
Short Time Withstand Current	63kA			
Short Time Current Withstand Duration	3 seconds			

2) Construction and Operation

Refer to Figures 1 - 6 for illustrations of the physical description of the enclosed indoor disconnect switch. To review detailed drawings of the switch operating mechanism, refer to Figure 7 & 8.

The base of the disconnect switch is constructed of welded steel plate for rigidity. The base is finished with an ANSI 61 gray powder-coating process for long-term corrosion protection. The primary phase-to-ground insulation (Figure 1, c) is NEMA grade GPO-3 polyester fiberglass.

The primary contacts for this disconnect switch are made of hard drawn, high-conductivity copper. Parallel flat copper bars are used for the moving contacts. Heavy silver plating of the stationary and moving contacts (Figure 1, a) guards against wear. The required contact force is achieved by multiple disc springs acting to compress the moving contacts together. A welded main operating shaft (Figure 1, b) in the base of the 3-pole switch drives the moving contacts through levers and insulated operating links. The main shaft is common to all three poles ensuring synchronized operation of the poles.

3) Accessories

Powell enclosed indoor disconnect switches are available with the following options and accessories:

- OPEN Position Grounding Contacts for the Moving Contacts
- Auxiliary Switches
- Key Interlocks









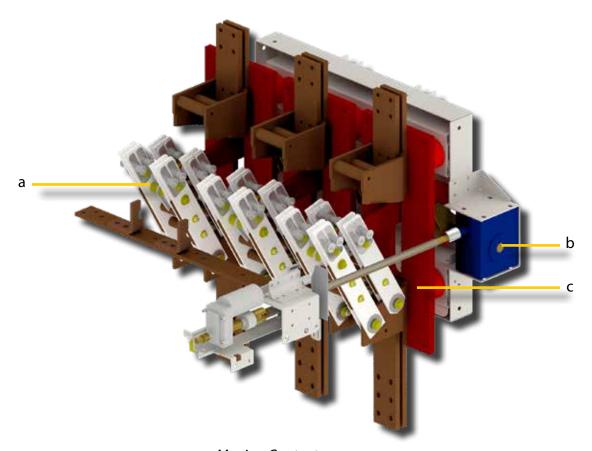


a) Grounding (Earthing) Contacts

Grounding contacts can be installed on the disconnect switch for grounding the moving contacts in the **OPEN** position (Figure 7). Grounding contacts and the supporting ground bus can be mounted to the switchgear in such a way that the stationary grounding contacts engage the moving contacts of the disconnect switch towards the end of the opening stroke. The grounding contacts are made from hard-drawn, high-conductivity copper.

When the disconnect switch is opened, the moving contacts of the disconnect switch rotate and connect with the grounding contacts. With this design, there is no need for any additional interlocks to prevent grounding the incoming primary connections when the disconnect switch is **CLOSED**.

Figure 1 General Arrangement of the PowlVac® 63kA Enclosed Indoor Disconnect Switch



- a. Moving Contacts
- b. Jackshaft
- c. Insulation



b) Auxiliary Switch

Optional auxiliary switches can be mounted to the wall of the enclosure or to the frame of the enclosed indoor disconnect switch. The optional auxiliary switches are provided with single pole double throw contacts.

c) Key Interlocks

Key interlocks can be provided to ensure proper operating sequences of the disconnect switch. The disconnect switch operating mechanism has provisions for mounting key interlocks in both the **OPEN** and **CLOSED** positions of the switch.



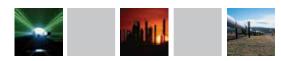


Figure 2 PowlVac® Enclosed Indoor Disconnect Switch

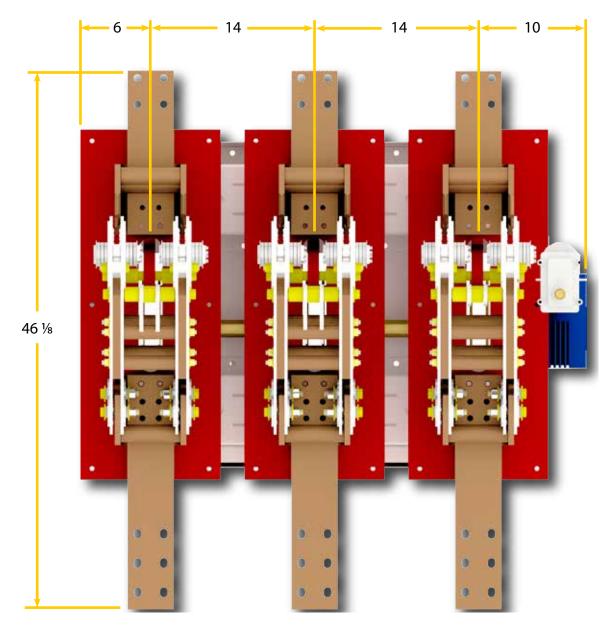
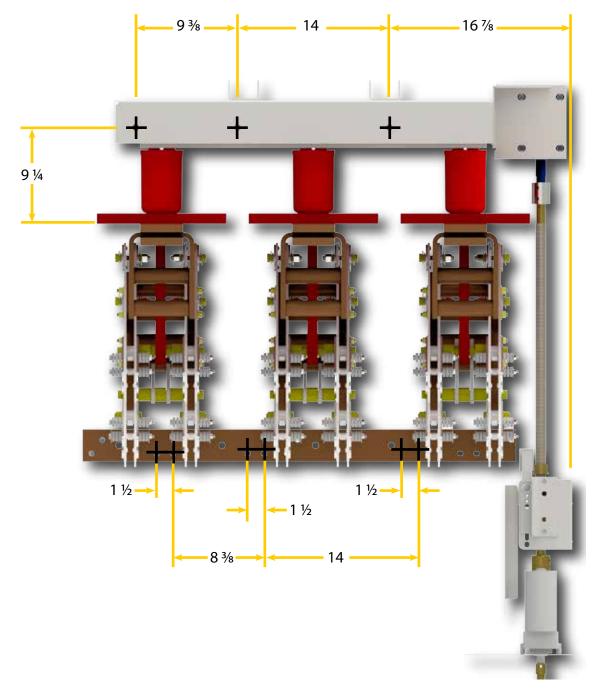




Figure 3 PowlVac® Enclosed Indoor Disconnect Switch Interior Dimensions





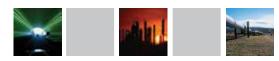
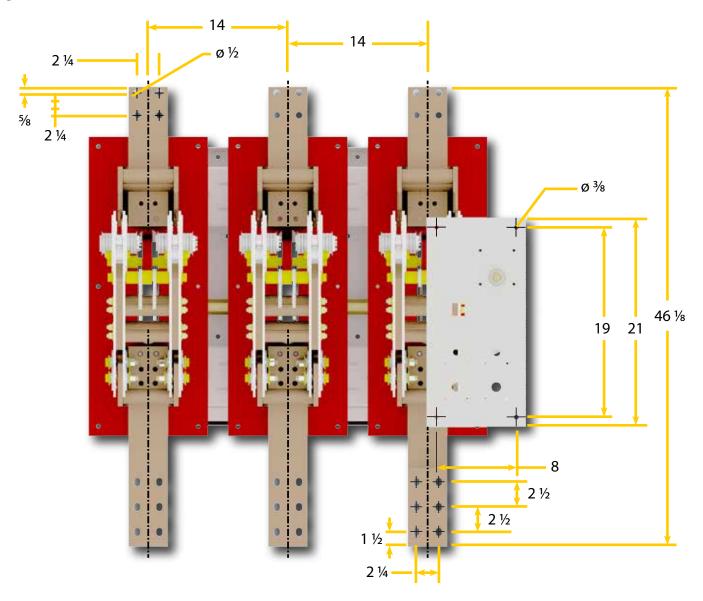


Figure 4 PowlVac® Enclosed Indoor Disconnect Switch Front Interior Dimensions



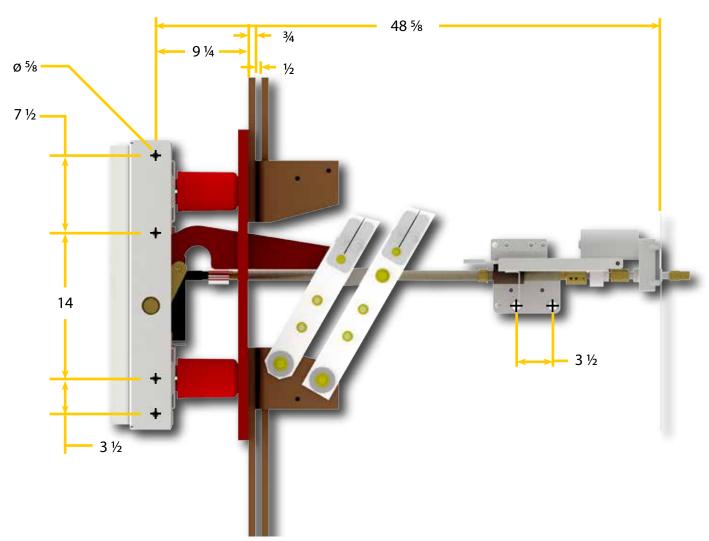


Figure 5 PowlVac® 63kA Disconnect Switch Operating Mechanism Dimensions - Left Side



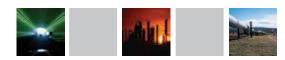
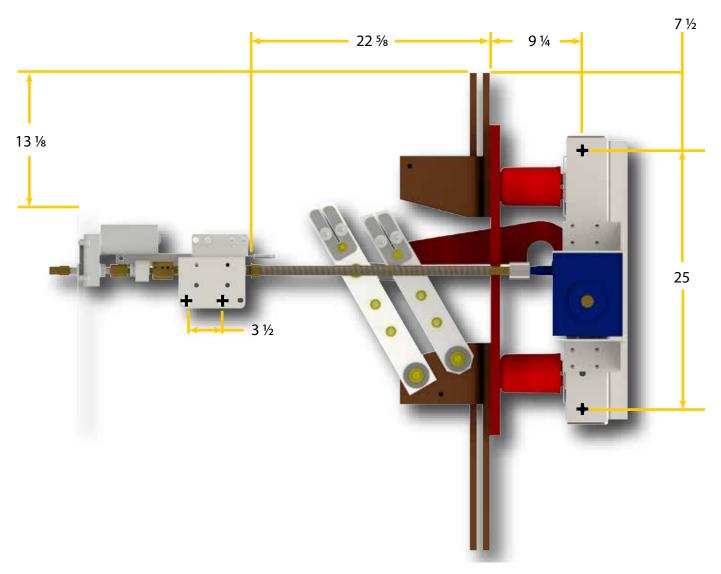


Figure 6 PowlVac® 63kA Disconnect Switch Operating Mechanism Dimensions - Right Side





B. OPERATING MECHANISM DESCRIPTION

1) General

The jackshaft of the disconnect switch is motor driven to the **OPEN** and **CLOSED** positions through a right angle gearbox (Figure 7, k). The gearbox, which is bolted to the base of the switch, contains worm and wheel type gearing and connects the gear motor (Figure 7, c) to the jackshaft (Figure 7, j). The inherent anti-reversing nature of worm and wheel gearing ensures the moving contacts of the disconnect switch will not change positions or move unless the input shaft to the gearbox is rotated.

The drive motor is located in a low voltage compartment of the enclosure for ease of operation and maintenance. The output of the drive motor is connected to the input of the gearbox through a steel operating shaft. The drive motor is a dual output, common shaft construction. A hexagonal adapter is provided on the output shaft opposite the shaft that is connected to the gearbox. The adapter makes it possible to manually override the motor to operate the switch when control power is not available. The adapter can be covered with a lockable protection cover to deter manual operation. The motorized operating mechanism can be equipped with electrical and mechanical interlocking.

2) Mechanism Operation

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The following description of the mechanism operation does not address the required interlocking or operating procedures as required in *Ch 3 Equipment Description*, *A. Disconnecting Switches*, 1) General. This section is provided to describe only the functional aspects of

the motor operated switch mechanism for maintenance and troubleshooting purposes.

1. When the gear motor (Figure 7, c) is energized, rotational force is transmitted to the right angle gearbox (Figure 7, k) via the gearbox input shaft (Figure 7, f). The gearbox input shaft is connected to the gearbox by a cylindrical shaft coupler (Figure 7, g). The opposite end of the input shaft is connected to a torque limiting device (Figure 7, i) by a shaft coupler (Figure 7, g).

The torque limiting device is a preset ratcheting design used to prevent excessive torque from being applied to the gearbox. The output of the gear motor is connected to the torque limiter by a shaft coupler (Figure 7, h).

- 2. The output of the right angle gearbox (Figure 7, k) is connected to the jackshaft (Figure 7, j) of the disconnect switch. Rotating the input shaft (Figure 7, f) of the gearbox causes a proportional rotation of the main jackshaft. Full operation of the disconnect switch is accomplished by rotating the main jackshaft 45 to 50 degrees. Excessive rotation is prevented by the limit switches mounted to define the **OPEN** and **CLOSED** position of the disconnect switch.
- 3. The operating mechanism support brackets (Figure 7, 1) and support angle (Figure 7, a) support the gear motor and gearbox input shaft. A portion of the gearbox input shaft is externally threaded and is equipped with an internally threaded slider. The slider (Figure 7, b) moves horizontally in proportion to the rotation of the input shaft.

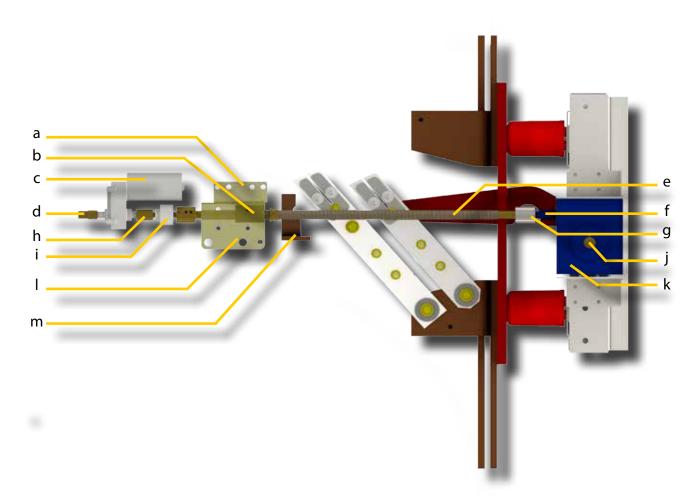






 The slider (Figure 7, b) is designed to perform three functions. The slider operates limit switches that control motor operation and switch main contact position, mechanically drives the OPEN-CLOSED indicator flag and also drives the mechanical position interlocks.

Figure 7 PowlVac® 63kA Operating Mechanism

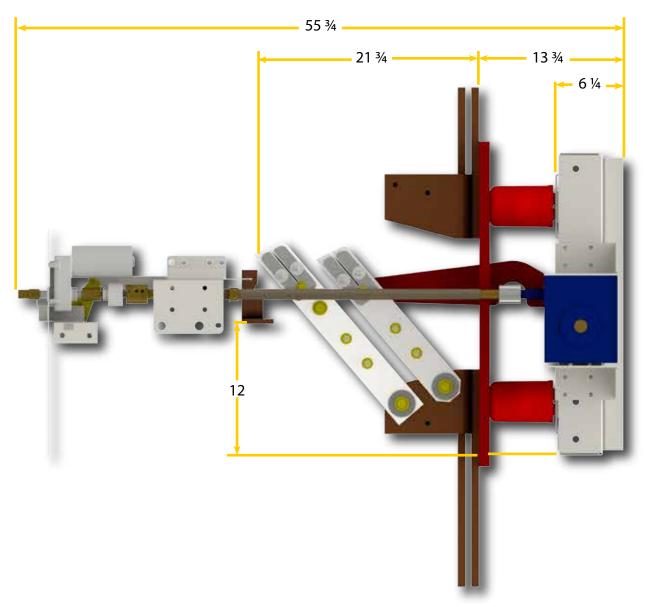


- a. Support Angle
- b. Slider
- c. Gear Motor
- d. Hex Rod End
- e. Threaded Rod
- f. Gearbox Input Shaft
- g. Coupler

- h. Coupler
- i. Torque Limiter
- j. Jackshaft
- k. Gearbox (Right Angle)
- Support Bracket(s)
- m. Ground Bus (Optional Open Position Grounding Contacts)



Figure 8 PowlVac® 63kA Operating Mechanism Dimensions











Ch 4 Installation

A. RECEIVING

When the equipment is received, check for any sign of damage. If damage is found or suspected, file all claims with the transportation company and notify the nearest Powell representative.

B. Installing The Disconnecting Switch

The switch is designed for metal-enclosed indoor applications. Refer to the installation drawings supplied with the switch for mounting bolt locations, electrical clearances and ventilation requirements. Refer to *Figures 3-6* for typical switch dimensions.

The enclosed indoor disconnect switch must be firmly attached to a square and level base. Care should be taken during installation and tightening of the mounting hardware to avoid twisting the frame.

Care should also be taken when installing primary copper connections to the switch terminals. Unnecessarily high torques or static loads on the terminals due to improper conductor installation must be avoided as these may cause misalignment and binding of the switch contacts. In order to maintain short circuit withstand ratings of the switch, the distance to the nearest support insulator from the switch terminals must not exceed 36 inches.

C. HANDLING

The enclosed indoor disconnect switch weighs approximately 850lbs. The preferred method for moving the enclosed indoor disconnect switch is by overhead crane.

A CAUTION

The switch must be lifted by attaching lifting means to the base of switch only. Lifting the switch by using any of the high voltage copper conductors will result in damage to the switch.

D. STORAGE

A CAUTION

It is recommended that the indoor disconnecting switch be placed into service immediately in its permanent location after completing the commissioning tests. If this is not possible, the following precautions must be taken to ensure the proper storage of the indoor disconnecting switch.

- 1. Since moisture has an adverse effect on the insulating parts, the enclosed indoor disconnect switch should be carefully protected against condensation, preferably by storing it in a warm dry room of moderate temperature, such as 40°-100°F. Enclosed indoor disconnect switches used in outdoor metal-clad switchgear should be stored in the equipment only when power is available and the anti-condensation heaters are in operation.
- 2. The enclosed indoor disconnect switch should be stored in a clean location free from corrosive gases or fumes. Particular care should be taken to protect the equipment from moisture and cement dust, as this combination has a corrosive effect on many parts.



3. Unplated surfaces, such as, rollers, latches, etc., should be coated with grease/oil to prevent rusting.

If the enclosed indoor disconnect switch is stored for any length of time, it should be inspected periodically to see that rusting has not started and to ensure good mechanical condition. Should the enclosed indoor disconnect switch be stored under unfavorable atmospheric conditions, it should be cleaned and dried before attempting the commissioning tests and before placing the enclosed indoor disconnect switch into service.









Ch 5 Maintenance

A. GENERAL DESCRIPTION

NOTICE

Before attempting any maintenance work, it is important to study and fully understand the safety practices outlined in Chapter 2 of this instruction bulletin. If there is any reason to believe there are any discrepancies in the descriptions contained in this instruction bulletin, or if they are deemed to be confusing and/or not fully understood, contact Powell immediately.

1) Introduction

A regular maintenance schedule must be established to obtain the best service and reliability from the disconnect switch.

Actual inspection and maintenance will depend upon individual application conditions such as number of operations, magnitude of currents switched, desired overall system reliability, and operating environment. Some atmospheric conditions such as extremes of dust, moisture, or corrosive gases might indicate inspection and maintenance at more frequent intervals. Very clean and dry conditions will justify longer times between inspection and maintenance operations. With experience, each user can set an inspection and maintenance schedule that is best suited for use.

When the enclosed indoor disconnect switch has been in storage for an extended period of time, it must be inspected and cleaned before being used. Refer to *Ch 4 Installation, D. Storage* for more information.

A permanent record of all maintenance work should be kept, the degree of detail depending upon the operating conditions. The record will be a valuable reference for subsequent maintenance work and for station operation. It is also recommended that the record include reports of tests performed and any repairs or adjustments that were performed. This record should begin with tests performed at the time of installation and energization, and all data should be graphed as a function of time to ensure a proper maintenance cycle is being scheduled.

2) Inspection and Cleaning

A CAUTION

When cleaning the disconnecting switch, use only denatured alcohol or isopropyl alcohol to remove foreign material. Failure to do so may damage the dielectric and/or the mechanical properties of the insulation.

Visually check the enclosed indoor disconnecting switch for loose or damaged parts. Tighten or replace loose or missing hardware. Any damaged parts that will interfere with the normal operation of the disconnecting switch should be replaced.

Clean the enclosed indoor disconnecting switch by removing any loose dust and dirt. Do not use compressed air to clean the enclosed indoor disconnect switch. This may result in loose dirt or grit being blown into bearings or other critical parts, thus causing excessive wear. Use a vacuum cleaner, or wipe with a dry lint-free cloth or an industrial-type wiper to clean the disconnect switch. Do not use solvents, de-greasers, or any aerosol products to clean in the area of any mechanisms.



Primary insulation, including the main contact supports and the insulating operating links, should be cleaned. Wipe clean with a dry lint-free cloth or an industrial type wiper. If dirt adheres and cannot be removed by wiping, remove it with distilled water or a mild solvent such as denatured alcohol. Be sure that the enclosed indoor switch is dry before returning it to service. Do not use any type of detergent to wash the surface of the insulators as detergent may leave an electrically conducting residue on the surface as it dries.

3) Lubrication

Lubrication of switch moving parts should be performed at regular maintenance intervals. The guiding rule in lubrication is to lubricate regularly, use lubricant sparingly and remove all excess lubricant.

Powell offers a complete lubrication kit (Powlube-104) which contains all the lubricants required for maintaining the disconnect switch. Powlube-104 consists of (1) A-grease, (1) B-grease, and (1) C-oil. Prior to March 2014, Powell provided Powlube-101 and Powlube-102 which contained (1) tube of Anderol 757 or Rheolube 368A, (1) tube of Mobilgrease 28 and (1) bottle of Anderol A456 oil.

A – Grease should be lightly applied to those bearing surfaces that are accessible. Inaccessible surfaces, such as bearings, may be lubricated with a light synthetic machine oil such as C - Oil. B – Grease should be applied to the electrical contact surfaces.

The lubricant on the main contacts of the enclosed indoor disconnect switch should be renewed approximately every 2 years.

Lubrication requirements of the operating mechanism are minimal. The motor and right angle gearbox are lubricated at the factory and should not require replenishment during the life of the components.

4) High Voltage Insulation Integrity

The high voltage insulation system of the enclosed indoor disconnect switch, which consists of the insulated operating links and contact support assemblies, should be hipot tested prior to initially placing the switch into service. The switch primary phase-to-phase and phase-to-ground insulation should be tested with the switch in the **CLOSED** position. Test each pole of the switch separately, with the other two poles and the switch base (frame) grounded.

Field primary insulation integrity testing can be conducted with either AC or DC high potential testing (Hipot). Powell recognizes that DC testing is very common due to the availability of the equipment. When using DC voltages, consistent and historical readings are more important than predetermined values when determining the condition of the primary insulation system. A clean, dry switch will help yield accurate and consistent readings. The recommended maintenance test voltage for the disconnect switch is:

27kVAC for one minute

or

37kVDC for one minute









Ch 6 Recommended Renewal Parts and Replacement Procedures

A. ORDERING INSTRUCTIONS

- 1. Order Renewal Parts from Powell at *powellind.com* or call 1.800.480.7273.
- 2. Always specify complete nameplate information, including:
 - Disconnect Switch Type
 - Serial Number
 - Rated Voltage
 - Rated Amps
- 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, a photo or simply submit a sketch showing the part needed.

B. RECOMMENDED RENEWAL PARTS

A sufficient amount of renewal parts should be stored to enable the prompt replacement of any worn, broken or damaged part. A sufficient amount of stocked parts minimizes service interruptions caused by breakdowns and saves time and expense. When continuous operation is a primary consideration, a larger quantity of renewal parts should be stocked depending on the severity of the service and the time required to secure replacement parts.

Since parts may be improved periodically, renewal parts may not be identical to the original parts. *Table B* lists the recommended spare parts to be carried in stock by the user. The recommended quantity is not specified. This must be determined by the user based on the application.

Powell recommends that only factory trained technicians perform maintenance on these units. Refer to the *Qualified Person* section in the front of this instruction bulletin.



Table B Renewal Parts						
Description	Part Number	Illustration				
Acme Rod	35351P00000004					
Gearbox	RVO75					
Motor	S13421					
Operating Link	35351P00005147					
Limit Switch Assembly	(Specific to Order Number)	image not available				
Moving Contact Spring Setting Gauge	R042203P100	image not available				
PowlVac® Lubrication Kit	Powlube-104	POWELL Management Management				









01.4IB.26100A PowlVac® 63kA Enclosed Indoor Disconnect Switch

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