



PCIB-1071B
Dated 5/25/90
Supersedes PCIB-1071

INSTRUCTION BOOK

TORQUE-LOK SWITCHES

2000A

3000A

4000A

(NON-LOAD BREAK)

WARNING

**FOLLOW THE SAFETY INSTRUCTIONS AND WARNINGS
THROUGHOUT THIS BOOK. FAILURE TO DO SO
CAN RESULT IN DAMAGE TO PROPERTY, PERSONAL INJURY, OR DEATH.**

**IN ADDITION TO THE MAINTENANCE AND PRECAUTIONS
AS OUTLINED WITHIN, REFER TO ANSI Z244.1-1982 ENTITLED:
LOCKOUT/TAGOUT OF ENERGY SOURCES MINIMUM SAFETY REQUIREMENTS**

These instructions may not cover all details or variations in equipment, nor provide for every possible contingency encountered. Should further information be desired or should problems arise which are not covered sufficiently, the matter should be referred to the POWERCON CORPORATION

P.O. Box 477, 1551 Florida Avenue, Severn, MD 21144 Phone: 410-551-6500 email info@powerconcorp.com

**WARNING
IMPORTANT**

IT IS IMPERATIVE THAT YOU READ AND COMPLETELY UNDERSTAND THE WARNING LOCATED TO THE RIGHT OF THIS BLOCK, FAILURE TO DO SO CAN RESULT IN DAMAGE TO PROPERTY, PERSONAL INJURY OR DEATH



DO NOT REMOVE COVERS, OPEN DOORS, OR WORK ON EQUIPMENT UNLESS POWER HAS BEEN TURNED OFF AND ALL CIRCUITS DE-ENERGIZED AND DISCONNECTED. DISCONNECT, DE-ENERGIZE, LOCKOUT AND PROPERLY GROUND CIRCUIT(S) BEFORE WORKING ON THIS EQUIPMENT. USE PROPER SAFETY PRECAUTIONS WHEN WORKING ON THIS EQUIPMENT.

ALL SAFETY CODES, SAFETY STANDARDS, AND/OR REGULATIONS AS THEY MAY BE APPLIED TO THIS TYPE OF EQUIPMENT MUST BE STRICTLY ADHERED TO. BEFORE ANY ADJUSTMENTS, SERVICING, PARTS REPLACEMENT OR ANY OTHER ACT IS PERFORMED REQUIRING ANY PHYSICAL CONTACT WITH THE ELECTRICAL COMPONENTS OR WIRING OF THIS EQUIPMENT, THE POWER SUPPLY MUST BE DISCONNECTED.



IN ADDITION TO THE PERSONNEL PRECAUTIONS AS OUTLINED, REFER TO:

- Z244.1-1982 PERSONNEL PROTECTION LOCKOUT/TAGOUT OF ENERGY SOURCES MINIMUM SAFETY REQUIREMENTS
- ANSI/NFPA 70E-1988: ELECTRICAL SAFETY REQUIREMENTS FOR EMPLOYEE WORKPLACES
- ANSI/NFPA 70B-1988: ELECTRICAL EQUIPMENT MAINTENANCE



THE EQUIPMENT COVERED BY THIS INSTRUCTION BOOK MUST BE SELECTED FOR A SPECIFIC APPLICATIONS AND IT MUST BE INSTALLED, OPERATED, AND MAINTAINED BY QUALIFIED PERSONS WHO ARE THOROUGHLY TRAINED AND WHO UNDERSTAND ALL OF THE HAZARDS INVOLVED. As with any electrical apparatus, the thorough knowledge of the engineering safety, inspection, maintenance and repair techniques as well as being familiar with particular features of the apparatus involved is mandatory. THIS BOOK DOES NOT PROVIDE SUFFICIENT INSTRUCTIONS FOR INEXPERIENCED ELECTRICIANS OR UNQUALIFIED PERSONS TO DO ANY WORK REQUIRED INCLUDING THE HANDLING, INSTALLATION, TESTING, OPERATION, INSPECTION, MAINTENANCE, AND REPAIR.



BEFORE CHECKING OR MAINTENANCE OF SWITCHGEAR, AFTER IT HAS BEEN INSTALLED - THE FOLLOWING MUST BE OBSERVED: ONLY QUALIFIED PERSONS MAY OPERATE, INSPECT OR MAINTAIN POWER SWITCHGEAR. IN ADDITION TO THE PERSONNEL YOU MAY HAVE WHO ARE QUALIFIED, OTHERS MAY BE AVAILABLE FROM AN EXPERIENCED HIGH VOLTAGE CONTRACTOR OR THE UTILITY SERVICING THE INSTALLATION. IT IS THE RESPONSIBILITY OF THE PURCHASER, INSTALLER, OR ULTIMATE USER TO INSURE THAT THE WARNING SIGNS ARE NOT REMOVED AND TO MAKE SURE THAT ALL ACCESS DOORS, AND OPERATING HANDLES ARE SECURELY LOCKED WHEN THE GEAR IS LEFT UNATTENDED BY QUALIFIED PERSONS, EVEN MOMENTARILY.



SAFETY GROUNDING TO BE DONE ON DE-ENERGIZED EQUIPMENT ONLY.

Before energizing the equipment and prior to any testing it is recommended that all circuits be safely grounded. Prior to any grounding whether it be for any testing, inspection, or maintenance procedures, assure that all safety precautions are taken. It is further recommended that an appropriate properly operating glow tube instrument that lights up and warns the worker when held in any alternating current field, indicating the presence of voltage, be used prior to grounding.

PERSONNEL DOING SUCH WORK SHOULD WEAR LINEMAN'S PROTECTIVE EQUIPMENT IN ACCORDANCE WITH SUCH EQUIPMENT MANUFACTURER'S RECOMMENDATIONS INCLUDING BUT NOT LIMITED TO PROTECTIVE GLOVES, INSULATED SLEEVES, LINEMAN'S BLANKETS, INSULATED HELMETS, FACE AND EYE PROTECTION that will assist in preventing injury if for any reason the equipment is grounded to an energized circuit. Every precaution should be taken to prevent electrical grounding on an energized circuit. Suitable grounding clamp leads should be used and safety grounding techniques employed. ALL SUCH GROUNDS MUST BE REMOVED AFTER TESTING, INSPECTION, OR MAINTENANCE PRIOR TO ENERGIZING THE EQUIPMENT.

In as much as Powercon has no control over the use to which others may put this material, statements concerning uses of the materials described herein are not to be construed as suitable for these uses unless proper technology in the usage, applications, and maintenance are strictly observed. For further information call or write the Powercon Corporation.



LIMITED WARRANTY

Powercon warrants that the equipment we deliver will be of the kind and quality described in the order or contract and will be free of defects in workmanship and material. Should any failure to conform to this warranty appear within one year after date of shipment, Powercon shall upon prompt notification thereof and substantiation that the equipment has been stored, installed, operated and maintained in accordance with Powercon recommendations and standard industry practice, correct such nonconformities, at its option, either by repairing any defective part or parts or by supplying a repaired or replacement part or parts F.O.B. factory. However, if Powercon has installed the equipment or furnished field engineering services with respect to its installation, and provided such installation has not been delayed by the Purchaser, said one year shall run from the completion of the installation. The total warranty period shall not exceed 18 months from the date of shipment in any case.

In no event shall Powercon be responsible for providing working access to the defect, including the removal, disassembly, replacement or reinstallation of any equipment material or structures to the extent necessary to permit Powercon to perform its warranty obligations, or transportation costs to and from the Powercon factory or repair facility. The conditions of any tests shall be mutually agreed upon and Powercon shall be notified of, and may be present at, all tests that may be made.

THE WARRANTIES SET FORTH IN THIS PROVISION ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER STATUTORY, EXPRESS OR IMPLIED (INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OF TRADE), EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT. The remedies provided above are the purchaser's sole remedies for any failure of Powercon to comply with its obligations. Correction of any nonconformity in the manner and for the period of time provided above shall constitute complete fulfillment of all the liabilities of Powercon whether the claims of the Purchaser are based in contract, in tort (including negligence) or otherwise with respect to or arising out of the equipment furnished hereunder.

WARRANTY IMPLEMENTATIONS AND CONDITIONS

On those occasions where service help is required, the Powercon Corporation should be notified at once through its Service Department. No charges or expenses should be incurred except as authorized by the Corporation in writing. Making unauthorized corrections or doing unauthorized work voids this Warranty and renders reimbursement impossible.

At times, the Powercon Corporation may request labor and/or material services from you. At our option we will provide competent supervision who will authorize such services by signing the Time Sheets of the people involved. No reimbursement can be made without signed Time Sheets.

The services rendered must be of the type and quality satisfactory to the Powercon Corporation, and we reserve the right to reject any and all such services.

The above in no way prejudices the right of the Powercon Corporation to correct, as stipulated in the Warranty, any problems that may occur in equipment manufactured by the Powercon Corporation.

FOREWORD

The warranty associated with this equipment is fully described with its implementation on Page i. It should be emphasized that unless approved by the Powercon Corporation no modification, alteration, change or correction should be undertaken without such express authority provided in writing by an authorized Powercon representative.

This Instruction Book is furnished in "As is" condition. No warranties expressed or implied, including warranties of fitness for a particular purpose, or merchantability, or warranties arising from course of dealing or usage of trade are made regarding the information, recommendations, descriptions, and safety notations contained herein. In no way will Powercon be responsible to the user in contract, in tort (including negligence), strict liability or otherwise for any direct special, indirect, incidental, or consequential damage or loss whatsoever, including but not limited to damage or loss of use of equipment, plant, or power system, cost of capital, loss of profits or revenues, cost of replacement power, additional expenses in the use of existing power facilities, or claims against the user by its customer resulting from the use of information, recommendations, descriptions, and safety notations contained herein.

The information, recommendations, descriptions, and safety notations in this document are based on Powercon's experience and judgment in respect to all of the subject matter contained herein. This information must not be considered to be all inclusive or covering all contingencies.

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QUALIFIED PERSONNEL ONLY

The equipment covered by this Instruction Book must be selected for a specific application and it must be installed, operated and maintained by qualified persons who are thoroughly trained and who understand all of the hazards involved. As with any electrical apparatus the thorough knowledge of the engineering safety, inspection, maintenance and repair techniques and familiarity with particular features of the apparatus involved is mandatory. This book does not provide sufficient instructions for inexperienced electricians or unqualified persons to do any work required including the handling, installation, testing, operation, inspection, maintenance, and repair. Refer to OSHA 29CFR Part 1910.399 for definition of "qualified person".

WARNING SAFETY GROUNDING TO BE DONE ON DE-ENERGIZED EQUIPMENT ONLY

Before energizing the equipment and prior to any testing or maintenance it is recommended that all circuits be safely grounded. Prior to any grounding whether it be for any testing, inspection, or maintenance procedures, assure that all safety precautions are taken. It is further recommended that an appropriate properly operating glow tube instrument that lights up and warns the worker when held in any alternating current field, indicating the presence of voltage, be used prior to grounding

Personnel doing such work should wear lineman's protective equipment in accordance with such equipment manufacturer's recommendations including but not limited to protective gloves, insulated sleeves, lineman's blankets, insulated helmets, face and eye protection that will assist in preventing injury if for any reason the equipment is grounded to an energized circuit. Every precaution should be taken to prevent electrical grounding on an energized circuit. Suitable grounding clamp leads should be used and safety grounding techniques employed. All such grounds must be removed after testing, inspection, or maintenance prior to energizing the equipment.

The above in no way replaces the user's safety techniques or applicable safety codes, rules, or regulations.



TORQUE-LOK SWITCHES (NON-LOAD BREAK)

DESCRIPTION

The Powercon series of TORQUE,-LOK indoor disconnecting switches are available in voltage classes from 2.4 @ 13.8 KV and up to 95 KV Basic Impulse Level. The available standard continuous current ratings are from 1200 thru 4000A, with higher current ratings available on special order. Momentary ratings are available as high as 100 Ka asymmetrical.

The TORQUE-LOK switch series is available in 2 or 3-pole, gang operated form, with unit frame mounted construction. The standard phase center distance of the poles is 10 inches for 2000A and 3000A models, making the switch suitable for installation into a 36-inch wide cubicle. For 4000A switch models a n pole center is utilized making the switch suitable for reinstallation in a 48" cubicle. Phase barriers of polyester glass are available as an option.

This standard series of TORQUE-LOK switches is available in the following drive configurations:

1. Manual, Stored Energy Quick-Close Operator (Handle with Chain).
2. Electric Motor Driven Stored Energy Quick-Close Operator (Removable Interlocked Handle with Chain).

NOTE: These switches are not 'fault-closing' rated. All stand-off insulators are wet process porcelain. Porcelain pushrods are available as an option.

OPERATION

The TORQUE-LOK switch is typically operated by a handle and drive chain unit mounted on the front of a switch cubicle. An upward motion of the operating handle causes the switch to 'close', while a downward motion of the handle causes the switch to 'open'. The operation sequence of the TORQUE-LOK switch is as follows:

1. When the switch is in the closed and locked position, rotation of the operating shaft, which is controlled by the switch operating handle or stored energy mechanism, causes the insulated pushrods to actuate a stainless steel linkage system.

2. As the linkage pivots, the two levers attached at the eyebolt of the pushrod, rotate the jaw and hinge cam shafts.
3. When the cam shafts rotate, the lock-up pressures on the hinge and jaw contacts are removed and the switch blades become unlocked.
4. At the end of the lever linkage travel, the pushrods continue to exert pressure on the main blades, and the main blades travel to the fully open position. Open switch electrical clearances through air are per ANSI standards for indoor class interrupter switches.
5. During the closing operation the insulated pushrods pull the main blades up onto the jaw contact. During this interval, the upper linkage toggle joint is unlocked by the striker pin located on the base of the jaw contact, allowing the two main levers to freely rotate the upper and lower cam shafts. As these cam shafts rotate, they exert a very high pressure between the copper main blades and the copper web of the jaw and hinge contacts.
6. High pressure Belleville spring washers are employed in the cam lock-up mechanisms to allow for normal wear of the copper facing and contact surfaces. All electrical contact surfaces are silverplated on the standard units and tin plating is available for special environmental applications.
7. The lock-up force of these switches is a minimum of 500 pounds and is sufficient to withstand "break-jaw" pressures sustained during momentary currents of 100 Ka without movement of the main blades.
8. The power mechanism which imparts its energy into the switch operating shaft, is also equipped with a locking latch mechanism which locks the switch shaft in both the open and closed position of the switch. This feature allows the conversion of a standard switch into a reversed contact configuration, placing the jaw at the bottom position with the main blades opening in an upward direction, when so desired. In other words, these switches may be mounted in any operating position; horizontally up or down or vertically normal or reversed poles.

IN ADDITION TO INSTRUCTIONS IN PCIB-1008A, REFER TO ANSI/NFPA-80B FOR MAINTENANCE

ADJUSTMENT OF CONTACT PRESSURE, PUSHRODS AND LINKAGE

Note: These adjustments are factory set. If it becomes necessary to make readjustments, follow the procedures shown or contact the Powercon Corporation Field Service Department.

I. Contact Pressure Adjustment (Figure 1)

1. With the main blades completely closed on the jaw contacts and the clamp linkages pulled in and at the end of their travel, adjust the 3/8-16 slotted nut (Item 2) as follows:
 - a. Turn the nut (Item 2) clockwise until the Belleville washers (Item 6) are flattened.
 - b. Turn the slotted nut to the next hex flat in the tightening direction, to line up the slot in the nut with the hole in the shaft.
 - c. Install the cotter pin, (Item 1), to lock the slotted nut, (Item 2), in position.

II. Push Rod and Linkage Adjustment (Figures 1-2-3)

1. The linkage arms (Items 10 and 11 of Figure 1), must be in a straight line when the main blades are fully on the jaw contact and locked. (See Figure 2).
2. Adjustment of the linkage arms may be made by disconnecting the insulated push rod (Item 24, Figure 2) from the switch throw shaft lever arms Item 27, Figure 2). Remove retaining ring (Item 26, Figure 3) and grooved shaft (Item 25, Figure 3) to disconnect the insulated push rods (Item 24, Figure 2).
3. Untighten the jam nut at the front end of the insulated push rod (Item 28, Figure 2), and rotate the push rod to adjust its length to satisfy the adjust-

ment of the linkage arms (Items 10 and 11 Figure 1). Retighten the jam nut firmly at the forward end of the insulated push rod, after it has been reconnected to the switch throw shaft lever arms (See Figure 3).

4. The linkage actuating bolt (Item 17, Figure 1) must be set to the proper dimension indicated at 'x' in Figure 2.

"x" Dimension

- x = 2.12" for 2000A switches (Item 17, Fig. 1)
- x = 2.31" for 3000A switches (Item 17, Fig. 1)
- x = 1.94" for 4000A switches (Item 17, Fig. 4)

5. After all adjustments are correctly made, the clamping pressure of the closed main blades and the jaw should be high enough to prevent movement of the main blades when they are subjected to a pulling force of 200 pounds minimum, applied directly from a point immediately below the jaw contact and normal to the vertical axis of the main blades in an outward direction. If the main blades can be moved with the 200 pound force, readjust the slotted nuts (Item 2, Figures 1 and 2) another 1/6 to 1/3 revolution in a tightening direction when the main blades are closed and locked. This will put more clamping pressure on the jaw contacts when the linkage toggles and closes as the switch moves to the closed position. A contact resistance reading should be taken and the acceptable values should be between 10 and 20 micro-ohms, taken across the line and load terminal pads on each phase.

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CAUTION

ON MOTOR OPERATED UNITS, MAKE SURE THE MOTOR OPERATOR IS ELECTRICALLY DISABLED PRIOR TO WORKING ON THESE SWITCHES. THE SPRING OPERATED MAIN BLADES HAVE SUFFICIENT ENERGY ON OPENING AND CLOSING TO CAUSE GREAT PHYSICAL, INJURY TO OPERATING PERSONNEL

**PARTS LIST
200A AND 3000A
TORQUE-LOK SWITCHES**

**(Standards 507)
(Refer to Figures 1, 2, & 3)**

<i>Item No.</i>	<i>Description</i>	<i>Standard Part No.</i>	<i>Qty Per Sw</i>
1	<i>Cotter Pin - 3132 0</i>	<i>MK#5</i>	<i>12</i>
2	<i>Slotted Nut - 318-16</i>	<i>MK#4</i>	<i>12</i>
3	<i>3/8 Flat Washer</i>	<i>MK#9</i>	<i>12</i>
4	<i>Cam, Movable</i>	<i>507-8001-5</i>	<i>12</i>
5	<i>Cam, Stationary</i>	<i>507-8000-5</i>	<i>12</i>
6	<i>Belleville Washer (Stainless Steel)</i>	<i>MK#1</i>	<i>24</i>
7	<i>Main Outer Blade 2000A</i>	<i>507-7009-5</i>	<i>6</i>
	<i>Main Outer Blade 3000A</i>	<i>507-7011-5</i>	<i>6</i>
8	<i>Main Inner Blade 2000A</i>	<i>507-7008-5</i>	<i>6</i>
	<i>Main Inner Blade 3000A</i>	<i>507-7010-5</i>	<i>6</i>
9	<i>Upper Cam Lever Assembly 2000A</i>	<i>507-1210-5</i>	<i>3</i>
	<i>Upper Cam Lever Assembly 3000A</i>	<i>507-1211-5</i>	<i>3</i>
10	<i>Connection Arm Weldment</i>	<i>507-1105-6</i>	<i>3</i>
11	<i>Lower Arm Assembly 2000A</i>	<i>507-1208-5</i>	<i>3</i>
	<i>Lower Arm Assembly 3000A</i>	<i>507-1209-5</i>	<i>3</i>
12	<i>Retainer Ring - 1120</i>	<i>MK#8</i>	<i>12</i>
13	<i>Shaft, Upper Pivot</i>	<i>507-6002-5</i>	<i>3</i>
14	<i>Spring Anchor 2000A</i>	<i>507-6017-5</i>	<i>3</i>
	<i>Spring Anchor 3000A</i>	<i>507-6018-5</i>	<i>3</i>
15	<i>Linkage Holding Spring</i>	<i>MK# 11</i>	<i>3</i>
16	<i>Shaft, Lower Pivot</i>	<i>507-6003-5</i>	<i>3</i>
17	<i>Linkage Actuating Bolt</i>	<i>MK#51</i>	<i>3</i>
18	<i>Jam Nut for Item 17</i>	<i>MK#52</i>	<i>3</i>
19	<i>Pole Mounting Bolt - 318-16 x 314, Flanged</i>	<i>MK#55</i>	<i>24</i>
20	<i>Stop Plate Weldment</i>	<i>507-1100-6</i>	<i>3</i>
21	<i>Jaw Contact, Right - 2000A</i>	<i>507-1201-5</i>	<i>3</i>
	<i>Jaw Contact, Left - 2000A</i>	<i>507-1200-5</i>	<i>3</i>
	<i>Jaw Contact, Right - 3000A</i>	<i>507-1205-5</i>	<i>3</i>
	<i>Jaw Contact, Left - 3000A</i>	<i>507-1204-5</i>	<i>3</i>
22	<i>Hinge Contact, Right - 2000A</i>	<i>507-1203-5</i>	<i>3</i>
	<i>Hinge Contact, Left - 2000A</i>	<i>507-1202-5</i>	<i>3</i>
	<i>Hinge Contact, Right - 3000A</i>	<i>507-1207-5</i>	<i>3</i>
	<i>Hinge Contact, Left - 3000A</i>	<i>507-1206-5</i>	<i>3</i>
23	<i>Porcelain Insulator, A-20, 3-112", 60 KV BIL</i>	<i>MK#14</i>	<i>6</i>
	<i>Porcelain Insulator, A-20, 6, 95 KV BIL</i>	<i>MK#12</i>	<i>6</i>
24	<i>Insulated Push Rod, 60 KV BIL, 5 KV, 2000A</i>	<i>507-9002-5</i>	<i>3</i>
	<i>Insulated Push Rod, 60 KV BIL, 5 KV, 3000A</i>	<i>567-9003-5</i>	<i>3</i>
	<i>Insulated Push Rod, 95 KV BIL, 15 KV, 2000A</i>	<i>507-9000-5</i>	<i>3</i>
	<i>Insulated Push Rod, 95 KV BIL, 15 KV, 3000A</i>	<i>507-9001-5</i>	<i>3</i>
25	<i>Grooved Shaft - 7116 0</i>	<i>507-6010-5</i>	<i>3</i>
26	<i>Retaining Ring-71160</i>	<i>MK#28</i>	<i>6</i>

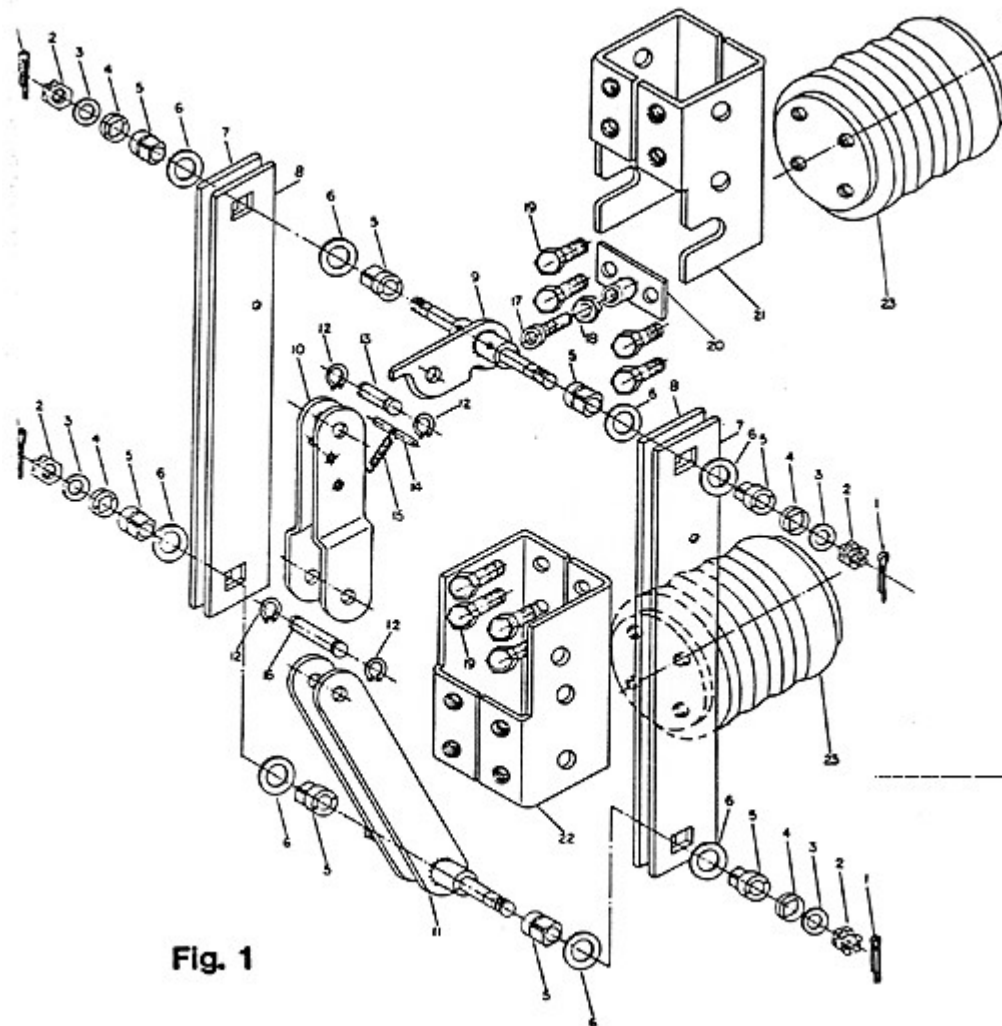


Fig. 1

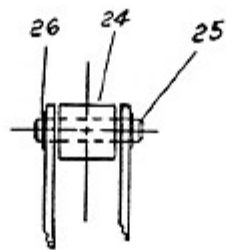
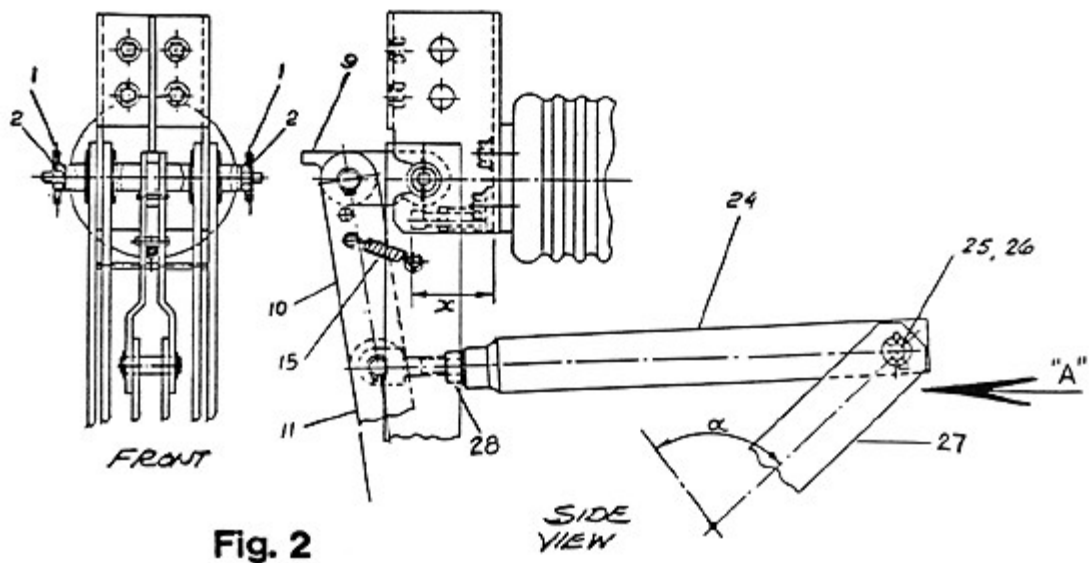


Fig. 3

SYSTEM BUSSING TO THE TORQUE-LOK SWITCH

1. The structural frame of the TORQUE-LOK switch must be firmly bolted to its support so that all points of support at the mounting bolts are in one plane. Distortion of the switch frame caused by improper mounting could cause binding of the switch operating-shaft.
2. When bus bars are connected to the TORQUE-LOK hinge and jaw contact terminal pads, the busses should create no abnormal pressures which will put a strain on the switch contacts, possibly pulling the contacts out of correct alignment. This condition could cause possible overheating of the TORQUE-LOK switch.
3. If the system bus dimensions cannot be held within limits to prevent strain on the switch terminal contacts, it is recommended that suitably rated flexible connectors be used between the system busses and the TORQUE-LOK switch terminal pads.

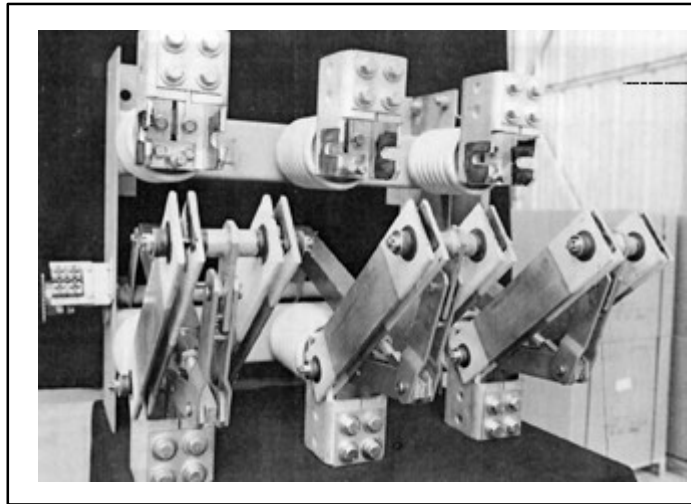
CONNECTION OF THE TORQUE-LOK SWITCH TO THE OPERATING HANDLE ASSEMBLY

1. The TORQUE-LOK series of switches are connected to the operating handle- assembly and adjusted per instructions given in PCIB-1002 for switches with manual operation and PCIB-1013A for switches with motor operation.
2. Upward movement of the operating handle causes the TORQUE-LOK switch to close, and downward movement of the operating handle causes the switch to open.

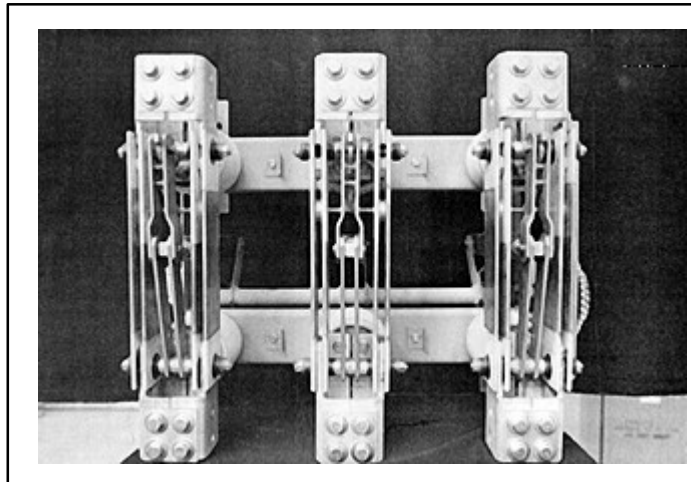
ACCESSORIES

The following accessory components are available as options on the TORQUE-LOK switch series:

1. Auxiliary switches with 1 NO and 1 NC contact or up to 4 NO & 4 NC contacts. The auxiliary switches are available in AC and 125 VDC configurations.
2. Operation Counters; resettable or nonresettable.
3. Solenoid Interlock Mechanisms.
4. Mechanical Door Interlocks
5. Key Interlocks.
6. Electric Motor Operation



Torque-Lok Switch Rated 3000A - 15KV - 95KV BIL - Open Position



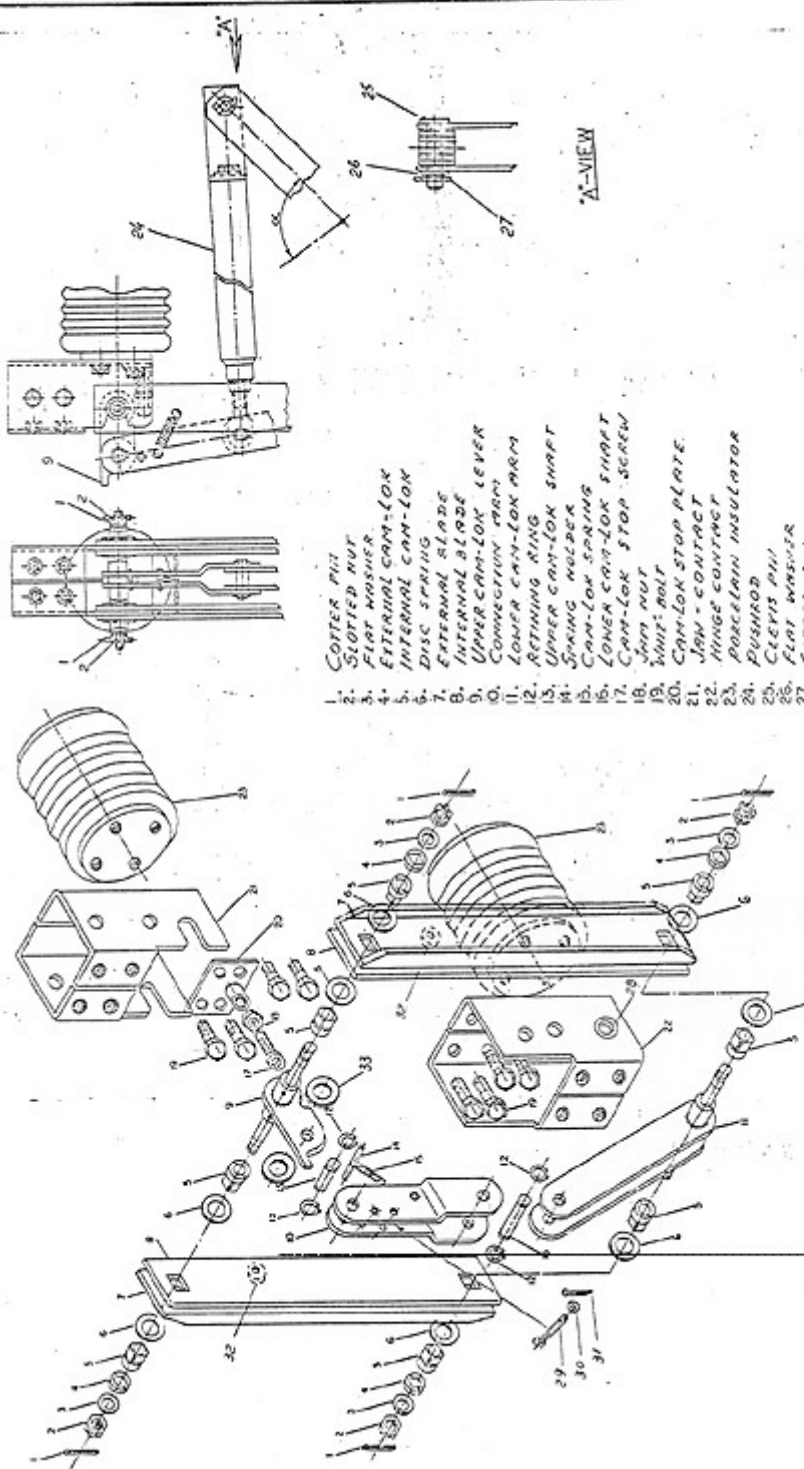
Torque-Lok Switch Rated 3000A - 15KV - 95KV BIL - Open Position

PARTS LIST
4000A
TORQUE-LOK SWITCHES

(Standards 507)
(Refer to Figure 4)

<i>Item No.</i>	<i>Description</i>	<i>Standard Part No.</i>	<i>Qty Per Sw</i>
1	Cotter Pin	MK#37	12
2	Slotted Nut	MK#31	12
3	Flat Washer	MK#32	12
4	External Lock-Cam	576-6008-5	12
5	Internal Lock-Cam	576-6007-5	12
6	Disk-Spring (Belleville)	MK#30	24
7	External Main Blade	576-7001-5	6
8	Internal Main Blade	576-7000-5	6
9	Upper Cam-Lok Lever	576-1200-5	3
10	Link Connector Arm	576-1106-5	3
11	Lower Cam-Lok Shaft	576-1201-5	3
12	Retaining Ring	MK#39	12
13	Upper Cam-Lok Shaft	576-6602-5	3
14	Spring Holder	576-6603-5	3
15	Cam-Lok Spring	MK#10	3
16	Lower Cam-Lok Shaft	576-6001-5	3
17	Cam-Lok Stop Screw	MK#24	3
18	Jamb-Nut	MK#27	3
19	"Whiz" Bolt	MK#23	24
20	Cam-Lok Stop Plate	576-1109-6	3
21L	Jaw Contact -Left	576-7004-5	3
21R	Jaw Contact - Right	576-7005-5	3
22L	Hinge Contact - Left	576-7002-5	3
22R	Hinge Contact - Right	576-7003-5	3
23	Porcelain Insulator - Class A-30	MK#3	6
24	Pushrod Assembly	576-1204-5	3
25	Clevis Pin	MK#36	3
26	Flat Washer	MK#18	3
27	Cotter Pin	MK#37	3
28	Hinge Bearing	576-6005-5	6
29	Clevis Pin	MK#33	3
30	Flat Washer	MK#34	3
31	Cotter Pin	MK#35	3
32	Blade Spacer	576-6006-5	6
33	Upper Level Spacer	576-6009-5	6

The above listed parts are illustrated in Drawing No. C-8834.
(Pole Assembly of 4000A, 5 & 15kV Torque-Lok Switch)



- 1. COTTER PIN
- 2. SLOTTED NUT
- 3. FLAT WASHER
- 4. EXTERNAL CAM-LOK
- 5. INTERNAL CAM-LOK
- 6. DISC SPRING
- 7. EXTERNAL ALADE
- 8. INTERNAL ALADE
- 9. UPPER CAM-LOK LEVER
- 10. CONNECTION ARM
- 11. LOWER CAM-LOK ARM
- 12. RETAINING RING
- 13. UPPER CAM-LOK SHAFT
- 14. SPRING WELDER
- 15. CAM-LOK NUT
- 16. LOWER CAM-LOK SHAFT
- 17. CAM-LOK STOP SCREW
- 18. JOINT NUT
- 19. NUT BOLT
- 20. CAM-LOK STOP PLATE
- 21. JAW - CONTACT
- 22. HINGE CONTACT
- 23. PORCELAIN INSULATOR
- 24. PUSHROD
- 25. CLEVIS PIN
- 26. FLAT WASHER
- 27. COTTER PIN
- 28. HINGE BEARING
- 29. CLEVIS PIN
- 30. FLAT WASHER
- 31. COTTER PIN
- 32. BLADE SPACER
- 33. UPPER LEVER SPACER

ENGINEERING & ASSEMBLY DATA

Fig. 4.
4000A

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TITLE: 4000A DRAWING NO.: 9218A DATE: 9/18 DESIGNED BY: R.H. CHECKED BY: R.H.	PROJECT NO.: DRAWING NO.: DATE:
MANUFACTURER: Powercon Corp ADDRESS: 1111 FOLEY BLVD CITY: DE WOODS, MD STATE: MD	S.O. NO.: C-8834 DATE: