



Digitrip Retrofit System for the ITE LG-3000 (Framed) Circuit Breaker

SAFETY PRECAUTIONS



WARNING

POWER CIRCUIT BREAKERS ARE EQUIPPED WITH HIGH SPEED, HIGH ENERGY OPERATING MECHANISMS. THE BREAKERS AND THEIR ENCLOSURES ARE DESIGNED WITH SEVERAL BUILT-IN INTERLOCKS AND SAFETY FEATURES INTENDED TO PROVIDE SAFE AND PROPER OPERATING SEQUENCES. TO PROVIDE MAXIMUM PROTECTION FOR PERSONNEL ASSOCIATED WITH THE INSTALLATION, OPERATION, AND MAINTENANCE OF THESE BREAKERS, THE FOLLOWING PRACTICES MUST BE FOLLOWED. FAILURE TO FOLLOW THESE PRACTICES MAY RESULT IN DEATH, PERSONAL INJURY, OR PROPERTY DAMAGE.

- Only qualified persons, as defined in the National Electric Code, who are familiar with the installation and maintenance of power circuit breakers and their associated switchgear assemblies should perform any work associated with these breakers.
- Completely read and understand all instructions before attempting any installation, operation, maintenance, or modification of these breakers.
- **Always turn off and lock out the power source feeding the breaker prior to attempting any installation, maintenance, or modification of the breaker. Do not use the circuit breaker as the sole means for isolating a high voltage circuit. Follow all lockout and tagging rules of the National Electric Code and all other applicable codes, regulations, and work rules.**

- Do not work on a closed breaker or a breaker with the closing springs charged. Trip (open) the breaker and be sure the stored energy springs are discharged before performing any work. The breaker may trip open or the charging springs may discharge, causing crushing or cutting injuries.
- For drawout breakers, trip (open), and then remove the breaker to a well-lit work area before beginning work.
- Do not perform any maintenance: including breaker charging, closing, tripping, or any other function which could cause significant movement of the breaker while it is on the extension rails. Doing so may cause the breaker to slip from the rails and fall, potentially causing severe personal injury to those in the vicinity.
- **Do not leave the breaker in an intermediate position in the switchgear cell. Always leave it in the connected, disconnected, or (optional) test position. Failure to do so could lead to improper positioning of the breaker and flashover, causing death, serious personal injury, and / or property damage.**
- **Do not defeat any safety interlock. Such interlocks are intended to protect personnel and equipment from damage due to flashover and exposed contacts. Defeating an interlock could lead to death, severe personal injury, and / or property damage.**

Cutler-Hammer Digitrip Retrofit Kits are available in a number of configurations that provide a wide range of features. The Digitrip System starts with the 510 Basic Kit which offers true RMS sensing, overcurrent protection, and self-testing features. Advanced Digitrip Retrofit Kits feature zone interlocking, digital alphanumeric displays, remote alarm signals, IMPACC communications, energy monitoring capabilities, power factors, and harmonic content measurements.

The following table provides a quick reference of the components supplied with each level of Retrofit Kit. Before beginning the Retrofit process, take a minute to review the information contained in the table. It is important that the Retrofitter understand

which level of Retrofit Kit is to be installed and which components are included with the Kit.

The instructions contained in this manual cover the installation of all levels of Retrofit Kit. If the Kit you are installing does not contain a certain component, skip the instructions for that component and proceed to the next.

Throughout the Retrofit process, refer to the Torque Tables at the back of this manual for specific torque values.

If you have any questions concerning the Retrofit Kit and / or the Retrofit process, contact Cutler-Hammer at 1-800-937-5487.

Components	510 Basic	510 with Zone Interlock	610	810	910
Trip Unit					
Rating Plug					
Auxiliary Current Transformer (CT) Module					
Auxiliary CT Harness					
Sensors					
Sensor Harness					
Direct Trip Actuator (DTA)					
Mounting Brackets and Hardware					
External Harness	Plug	1 Connector Harness	2 Connector Harness	4 Connector Harness	4 Connector Harness
Cell Harness					
Breaker Mounted Control Power Transformer (CPT)					
Potential Transformer (PT) Module					
Auxiliary Switch					

Step 1: General Breaker Preparation

Before attempting to remove the Breaker from the cell or perform any Retrofit Operation, be sure to read and understand the Safety Precautions section of this manual. In addition, be sure to read and understand the *Instructions for the Application of Digitrip RMS Retrofit Kits on Power Circuit Breakers* (Retrofit Application Data - Publication AD-33-855-1), supplied with the Digitrip Retrofit Kit.



WARNING

DO NOT ATTEMPT TO INSTALL OR PERFORM MAINTENANCE ON EQUIPMENT WHILE IT IS ENERGIZED. SEVERE PERSONAL INJURY OR DEATH CAN RESULT FROM CONTACT WITH ENERGIZED EQUIPMENT. VERIFY THAT NO VOLTAGE IS PRESENT BEFORE PROCEEDING.

- A. Trip the Breaker and remove it from the Cell.
Move the Breaker to a clean, well-lit work area.

NOTE: It is the responsibility of the Retrofitter to insure that the Breaker and all original components are in good condition. Visually inspect all Breaker components for signs of damage or wear. If any signs of damage or wear are detected for components not included in the Retrofit Kit, secure the necessary replacement parts before beginning the Retrofit Process.

The force necessary to trip the Breaker should not exceed 7.5 lbs.

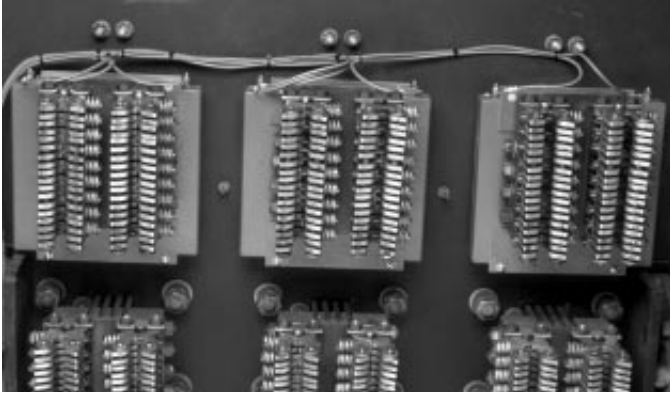
To begin the Retrofit Process, refer to the components list at the end of this manual. Lay out the components and hardware according to the steps outlined. The components and hardware will be used to complete each step in the Retrofit Process.

Step 2: Removing the Original Components

Follow the ITE LG-3000 (Framed) Instruction Manual, originally supplied with the Breaker, to perform the following procedure.

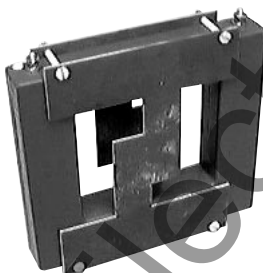
- A. Remove and save the screws securing the Front Enclosure Door to the Breaker Front Panel. Remove and set the Front Enclosure Door aside for reinstallation at the end of the Retrofit process.
- B. Remove and save the screws securing the right Breaker Side Panel to the Breaker. Remove and set the Side Panel aside for reinstallation at the end of the Retrofit process.
- C. Remove and scrap the original mechanical trip units. Save the associated mounting hardware for use later in the Retrofit process.

Step 3: Installing the Sensors and Sensor Harness



- A. Remove and save the hardware securing the Finger Clusters to the top Breaker Stabs. Remove the Finger Clusters.
- B. Position a Sensor Mounting Bracket on both sides of a Sensor. Secure the Sensor Mounting Brackets to the Sensor, as shown, using the (4) .190-32 x 2.00" nylon screws and (4) steel nuts supplied. Repeat the process for the remaining two (2) Sensors.

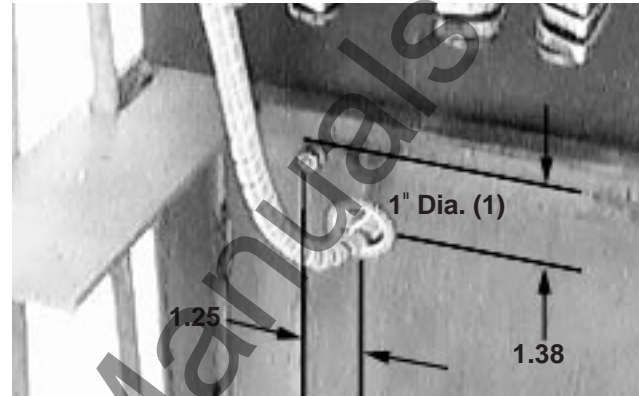
Note: Do not over tighten the nuts. Over tightening can strip the nylon screws and / or bow the Sensor Mounting Brackets.



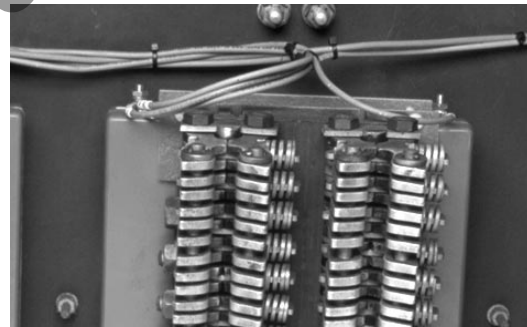
- C. Slide a Sensor Assembly onto each top Breaker Stab. The Sensor Assemblies must be installed with the terminals pointing upwards.
- D. Reinstall the Finger Clusters onto the top Breaker Stabs. Secure the Finger Clusters to the Breaker Stabs using the original mounting hardware.

- E. Using Drilling Plan "A", cut an approximately 1" diameter hole in the Breaker Back Plate.

Drilling Plan "A"



- F. Connect the ring terminals of the Sensor Harness to the Sensors as shown. Refer to Section 12 of the Retrofit Application Data, supplied with the Retrofit Kit, for detailed wiring specifications.



Depending on the Sensors supplied with the Retrofit Kit, the following conventions apply.

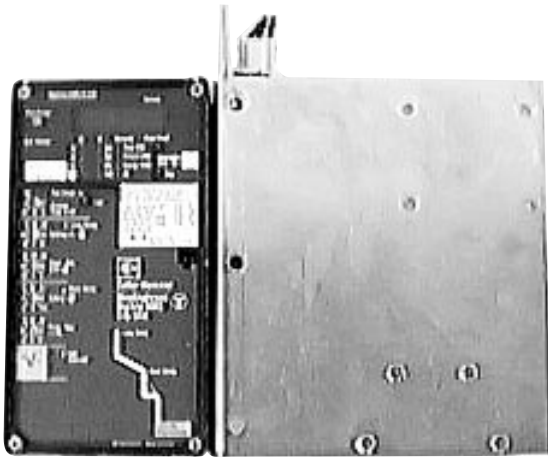
Sensor Style No.

8259A23H01: X1-X2 = 3000 A

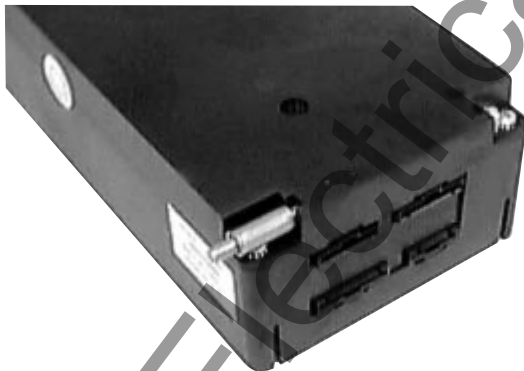
- G. Route the Sensor Harness down the Breaker Backplate towards the hole cut in Step 3-E.
- H. Feed the Sensor Harness through the hole and into the Breaker.

Note: Final Sensor Harness connection will be performed later in the Retrofit process.

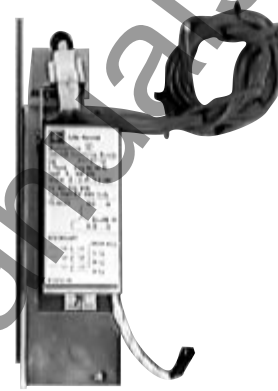
Step 4: Preparing the Trip Unit Assembly



- A. Remove the Trip Unit Cover and install the Rating Plug supplied with the Retrofit Kit. Reinstall the Trip Unit Cover.
- B. Secure the Trip Unit to the Trip Unit Mounting Bracket, as shown, using the (2) brass spacers, (2) .190-32 x 4.00" screws, (4) flat washers, (2) lock washers, and (2) nuts supplied. Note that the brass spacers are placed between the side of the Trip Unit and the Mounting Bracket.



- C. *For Kits Supplied with a PT Module Only:* Remove the Warning Label Bracket from the PT Module. Using the original mounting hardware, mount the new Warning Label Bracket to the PT Module as shown. Apply the new Warning Label to the bracket as shown.

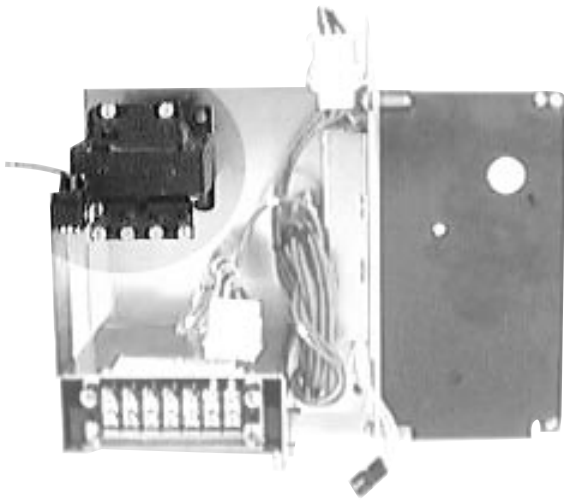


- Align the Glass Poly Insulation and the PT Module with the holes in the Trip Unit Mounting Bracket, as shown. Secure the Glass Poly Insulation and the PT Module to the Trip Unit Assembly using the (2) .138-32 x .375" screws, (2) lock washers, and (2) flat washers supplied.
- D. Remove and scrap the existing screws from the back of the Aux. CT Module.
- E. Align the holes in the back of the Aux. CT Module with the holes in the Trip Unit Mounting Bracket as shown. Secure the Aux. CT Module to the Trip Unit Assembly using the (2) .190-16 x .500" thread cutting screws, (2) lock washers, and (2) flat washers supplied.
- F. Connect the Aux. CT Harness to the Pigtail on the Aux. CT Module and the proper receptacle on the Trip Unit.



For Kits Supplied with a Breaker Mounted CPT Only.

Step 5: Installing the Breaker Mounted CPT

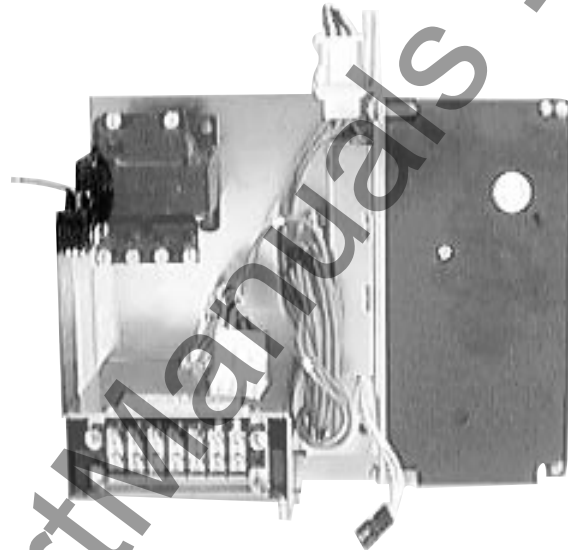


- A. Align the holes in the base of the Breaker Mounted CPT with the holes in the Trip Unit Mounting Bracket as shown. Secure the CPT to the Trip Unit Assembly using the (4) .190-32 x .500" screws, (8) flat washers, (4) lock washers, and (4) nuts supplied.

Note: The CPT Harness terminals (X1 and X2) should be oriented towards the top of the Trip Unit Assembly.

For Kits Supplied with an Auxiliary Switch Only.

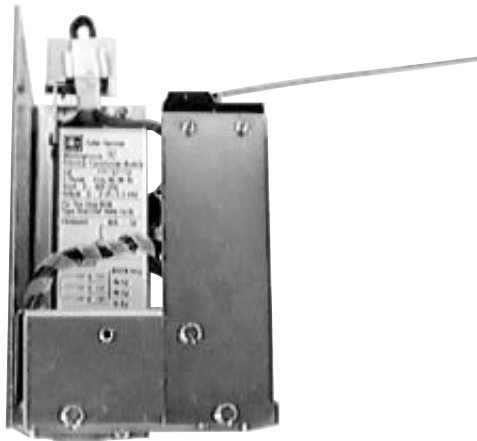
Step 6: Installing the Auxiliary Switch



- A. Align the Microswitch with the two small holes in the Aux. Switch Mounting Bracket. Secure the Microswitch to the Aux. Switch Mounting Bracket, as shown, using the (2) .138-32 x 1.00" screws, (4) flat washers, (2) lock washers, and (2) nuts supplied.



- B. Remove and scrap the existing screw from the front left side of the Aux. CT Module.
- C. Align the Aux. Switch Assembly with the holes in the left side of the Aux. CT Module. Secure the Aux. Switch Assembly to the Aux. CT Module, as shown, using the (2) .190-16 x .500" thread cutting screws, (2) lock washers, and (2) flat washers supplied.

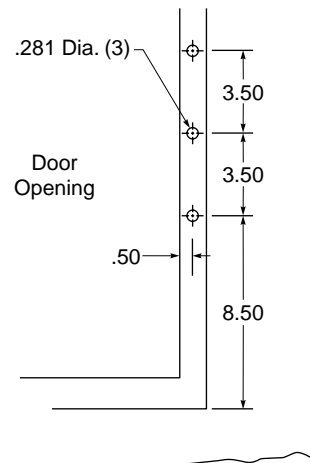


Step 7: Installing the Trip Unit Assembly

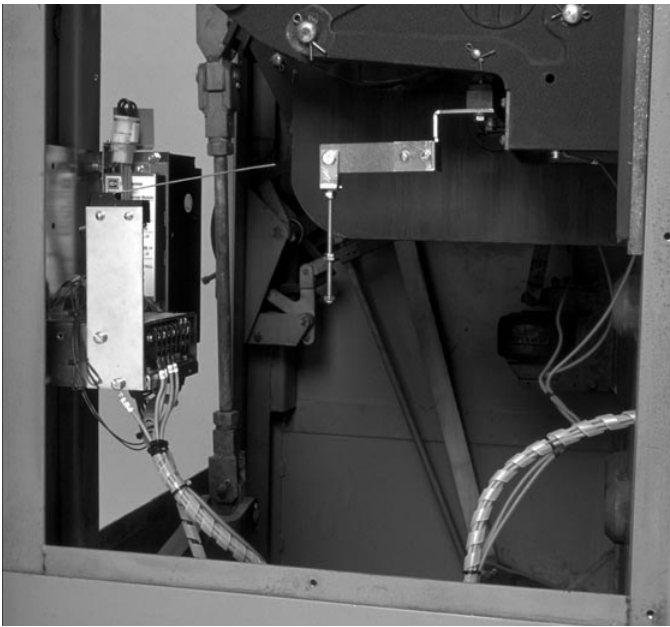


- A. Using Drilling Plan "B", drill three (3) .281" diameter holes in the right Door Frame channel of the Breaker Front Plate.

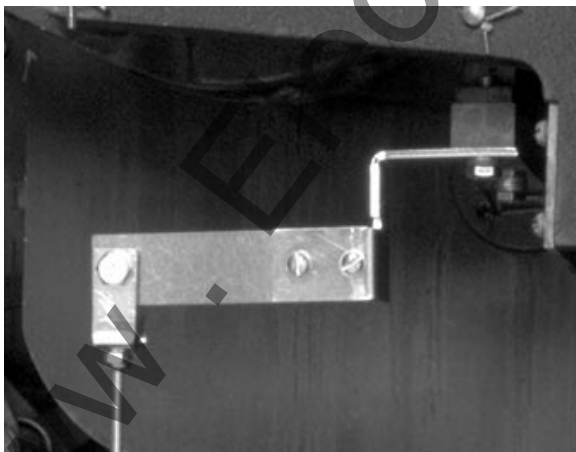
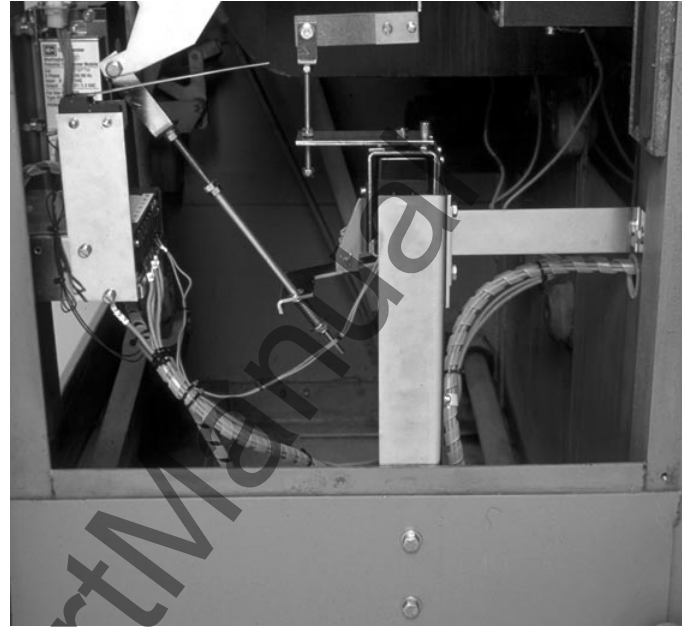
Drilling Plan "B"



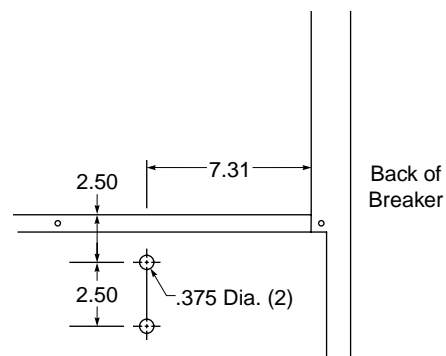
- B. Align the Trip Unit Assembly with the holes just drilled. Secure the Trip Unit Assembly to the Breaker Front Plate, as shown, using the (3) .250-20 x .750" hex bolts, (3) lock washers, and (3) flat washers supplied.

Step 8: Installing the Trip Finger Assembly

- A. Remove the existing hardware from the right side of the Breaker Trip Bar.
- B. Align the holes in the Trip Finger Assembly mounting bracket with the holes in the Breaker Trip Bar from which the hardware was just removed.
- C. Secure the Trip Finger Assembly to the Breaker Trip Bar, as shown, using the (2) .250-20 x 1.25" hex bolts, (2) lock washers, and (2) flat washers supplied.

**Step 9: Installing the DTA Assembly**

- A. Using Drilling Plan "C", drill two (2) .375" diameter holes in the right Breaker Side Panel.

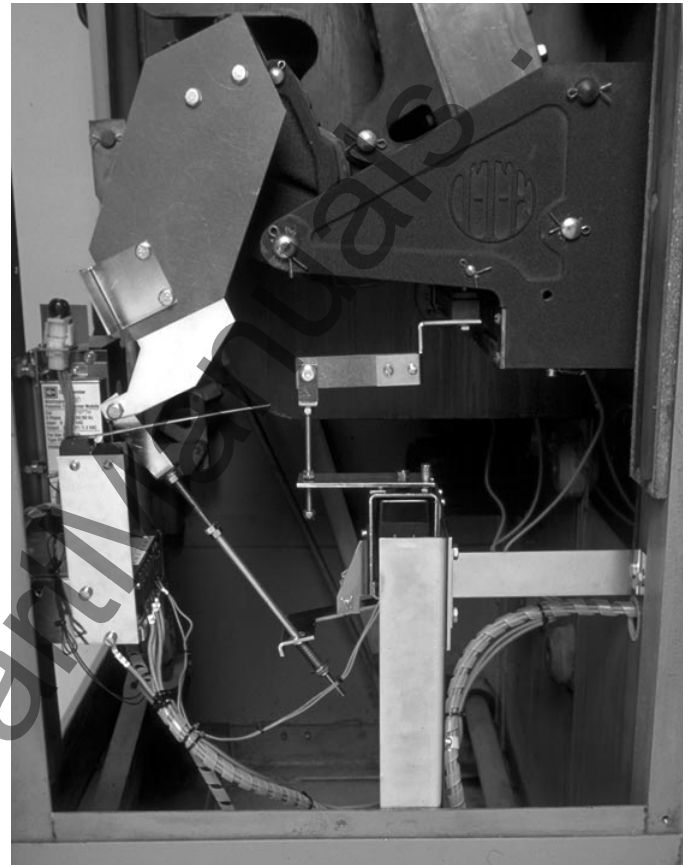
Drilling Plan "C"

- B. Remove the lock nut from the end of the Trip Shaft.
- C. Position the DTA Assembly inside the Breaker, as shown, and insert the Trip Shaft through the hole in the DTA Trip Lever. Install the lock nut on the end of the Trip Shaft.

- D. Align the hole in the DTA Assembly Rear Mounting Bracket with the existing hole in the Breaker Back Plate (just above the hole cut for the Sensor Harness).
- E. Secure the DTA Assembly Rear Mounting Bracket to the Breaker Back Plate, as shown, using the (1) .250-20 x .750" hex bolt, (2) flat washers, (1) lock washer, and (1) nut supplied.
- F. Insert the supplied spacer between the inside of the Breaker Right Side Panel and the DTA Assembly Bottom Mounting Bracket.
- G. Align the holes in the DTA Assembly Bottom Mounting Bracket with the holes in the spacer and the Breaker Right Side Panel.
- H. Secure the DTA Assembly and the spacer to the right Breaker Side Panel, as shown, using the (2) .312-18 x 1.00" hex bolts, (4) flat washers, (2) lock washers, and (2) nuts supplied.

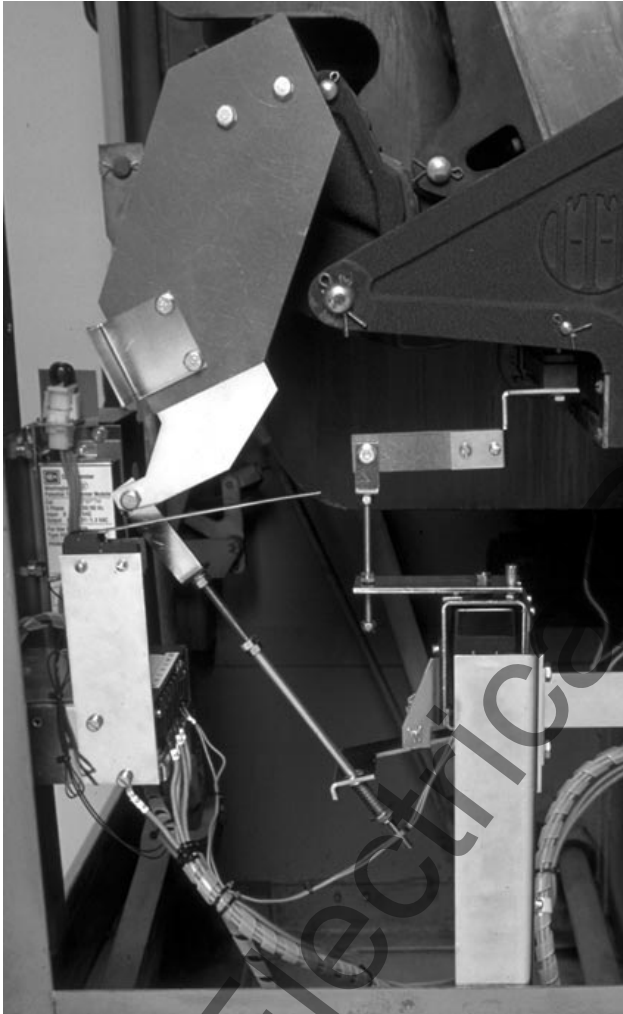


Step 10: Installing the Reset Assembly

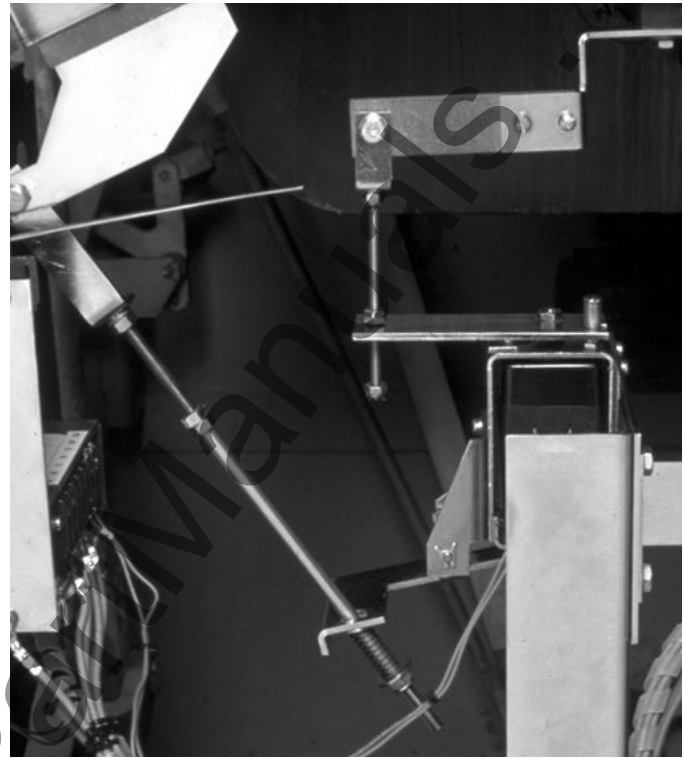


- A. Remove and save the two bolts and washers from the right side of the Breaker Crossbar.
- B. Note the number of threads between the lock nut and the end of the Reset Shaft. Remove the lock nut, (2) washers, and spring from the end of the Reset Shaft.
- C. Insert the Reset Shaft into the hole in the DTA Assembly Reset Lever. Reinstall the spring, washers, and lock nut removed in Step 10-B. The lock nut should be wound onto the Reset Shaft until the same number of threads, noted in Step 10-B, are between the lock nut and the end of the Reset Shaft.

- D. Align the holes in the Reset Assembly's Glass Poly Mounting Bracket with the holes in the right side of the Breaker Crossbar from which the hardware was removed in Step 10-A.
- E. Secure the Reset Assembly to the Breaker Crossbar, as shown, using the original hardware removed in Step 10-A.

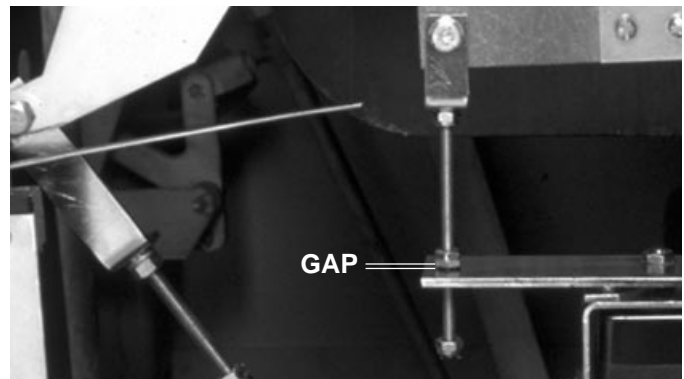


Step 11: Setting the Gap and Cage Height

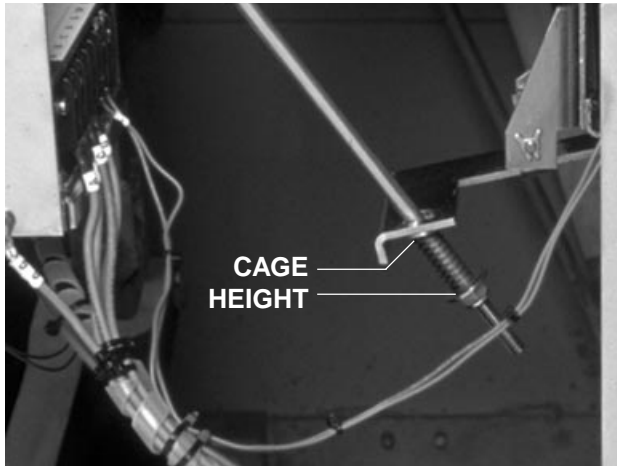


- A. With the Breaker in the Open position, loosen the lock nut (top nut) on the Trip Shaft. Turn the adjusting nut until a gap of .009" to .011" is achieved between the adjusting nut and the DTA Trip Lever with the Trip Assembly at rest. Tighten the lock nut.

Note: Make sure the lock nut on the end of the Trip Shaft has been installed so the crown of the nut is flush with the end of the Trip Shaft.

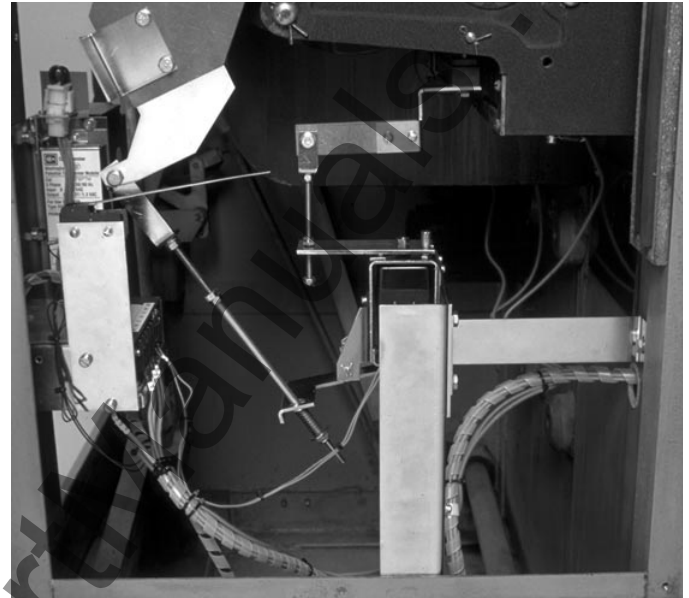


- B. Loosen the lock nuts on the Reset Shaft, below and above the brass spacer. Turn the adjusting nuts until a cage height of approximately .73" to .77" at the centerline of the Reset Shaft is achieved. Tighten the lock nuts.



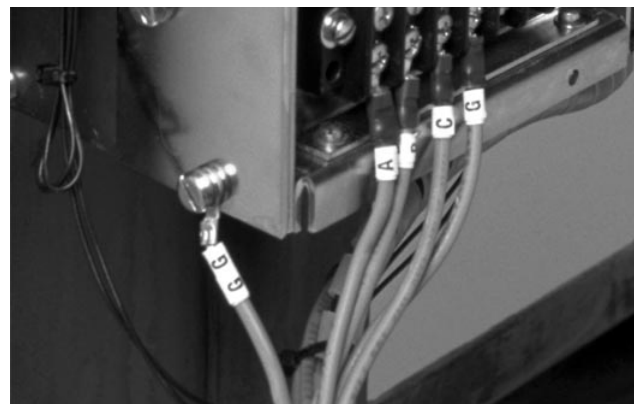
- C. Connect a 24 VDC power supply to the DTA terminals; positive to positive and negative to negative. Close the Breaker manually. Energize the DTA to trip the Breaker; de-energize when the Breaker trips. Make certain that the DTA resets. If the Breaker fails to properly trip or reset, it may be necessary to readjust the cage height. Make the necessary adjustments until the trips and resets are sure and positive each time.

Step 12: Connecting the Sensor Harness and DTA Wires



- A. Route the Sensor Harness from the back of the Breaker to the terminals on the Aux. CT Module.
- B. Connect the Sensor Harness to the proper terminals on the Aux. CT Module. Refer to Section 12 of the Retrofit Application Data, supplied with the Retrofit Kit, for detailed wiring specifications.

Connect the green ground wire from the Sensor Harness (with the ring terminal) to the right side (top) of the Aux. CT Module, as shown, using the existing screw.



- C. Secure the Sensor Harness to the DTA Assembly Mounting Brackets, as shown, using the (2) wire clamps, (2) .164-32 x .750 screws, (4) flat washers, (2) lock washers, and (2) nuts supplied.



- D. Route the DTA Wires from the DTA Assembly to the Aux. CT Module. Connect the "+" DTA Wire to the "OP" terminal of the Aux. CT Module and the unmarked wire to the "ON" terminal.

For Kits Supplied with a PT Module Only.

Step 13: Connecting the PT Wires



- A. Refer to Section 7-3, Power Flow Convention of the Retrofit Application Data, supplied with the Retrofit Kit for additional wiring information and to verify the Phase Convention used on this Breaker Application.

Note: Before cutting the PT Wires, verify the Phase Convention used on the Breaker Application.

- B. Route the wires to a position suitable for attachment to the bottom of the Phase Frames. Move the PT Wire markers to a position where they will still be attached to the wires after cutting. Cut the wires to length, strip each wire .250", and install a .250" ring terminal on each wire.
- C. Connect the wires to the bottom of each Phase Frame using the original hardware removed in Step 2-C.



For Kits Supplied with a Breaker Mounted CPT Only.

Step 14: Connecting the Breaker Mounted CPT

- A. Strip .250" of insulation and attach a .138" ring terminal to each wire of the CPT Harness. Connect the wires to the X1 and X2 terminals of the CPT.
- B. Attach the HV Wires to the CPT terminals to achieve the required voltage. (See the following table.)

Voltage Required	CPT Terminals Used
480 Volt Circuit	H1 & H4
240 Volt Circuit	H1 & H3
208 Volt Circuit	H1 & H2

Note: The terminals to which the HV wires are connected determine the voltage of the CPT which, in turn, limits the voltage of the Breaker. Verify that the line voltage of the circuit matches the CPT voltage BEFORE putting the Breaker into service.

Note: The power convention of the ITE LG-3000 (Framed) Breaker is normally Top to Bottom, meaning the Top Breaker Phase Frames are on the Line Side of the Breaker and the Bottom Breaker Stabs are on the Load Side.

The HV Wires from the CPT MUST BE ATTACHED to the Line Side of the Breaker. If it is determined that the power flow for the Breaker application is opposite the normal convention, the HV Wires must be attached to the Bottom Phase Frames. In this case, the same bolts used to attach the PT Wires to the Phase 1 and 2 or Phase 2 and 3 Phase Frames can be used to mount the HV Wires.

Note: The Line Side HV Wires are longer than necessary and are cut during the following steps. Before cutting the wires, be

sure that sufficient length is left so that the connections can be made to the correct Finger Clusters or Phase Frames.

- C. Route the HV Wires from the CPT to the back of the Breaker following the path of the Sensor Harness. Position the HV Fuses so they are accessible from the right side of the Breaker.
- D. Feed the HV Wires through the same hole as the Sensor Harness, then up towards the top Finger Clusters. Using the wire ties provided, secure the HV Wires to the Sensor Harness.
- E. Cut the HV Wires to the appropriate length for attachment to the appropriate top Breaker Stabs. Strip .250" from each HV Wire and attach a .250" ring terminal.
- F. Using the existing hardware that secures the Finger Clusters to the top Breaker Stabs, connect the HV Wires to the Phase 1 & 2 or Phase 2 & 3 Breaker Stabs.
- G. Attach the appropriate label for the Breaker in a clearly visible position. Three (3) labels are included with the CPT, one (1) for 480 Volt, one (1) for 240 Volt, and one (1) for 208 Volt systems.



Step 15: Connecting the External Harness

- A. Connect the External Harness to the Trip Unit.

Note: For 510 Basic Retrofit Kits, the External Harness is the plug pictured here. It is to be plugged into the right side of the Trip Unit.



- B. Secure the External Harness to the Trip Unit Mounting Bracket using the (2) wire clamps, (2) .190-16 x .500" thread cutting screws, (2) flat washers, and (2) lock washers supplied.
- C. *For Kits Supplied with a PT Module Only.* Connect the PT Harness to the External Harness.
- D. *For Kits Supplied with an Auxiliary Switch Only.* Connect the External Harness to the Auxiliary Switch by routing the two (2) wires (with ring terminals) from the External Harness to the Auxiliary Switch. Connect one wire to the normally "Closed" terminal and the other wire to the "Common terminal".
- E. *For Kits Supplied with a Breaker Mounted CPT Only.* Remove the External Harness plug installed in the Trip Unit. Insert the black plug of the CPT Harness into the same receptacle in the Trip Unit. Reinsert the External Harness Plug just removed into the female receptacle on the CPT Harness.
- F. Use the wire ties and wire clamps provided to dress all wires and harnesses to keep them away from any moving parts within the Breaker.

Step 16: Testing the Breaker

- A. Measure the force necessary to trip the Breaker at the point where the Trip Shaft contacts the Trip Finger on the DTA. The force necessary to trip the Breaker **MUST NOT EXCEED THREE (3) lbs.**
- B. The Retrofit must be tested using primary injection. Refer to Section 8 of the *Instructions for the Application of Digitrip RMS Retrofit Kits on Power Circuit Breakers* (Publication AD-33-855-1, June, 1997), supplied with the Retrofit Kit, for detailed testing procedures and specifications. For test information specific to the Trip Unit, refer to the IL publication supplied with the Retrofit kit (see the Pick List for the IL number).
- C. While Section 8 of the Instructions for the Application of Digitrip RMS Retrofit Kits on Power Circuit Breakers provides the information necessary for testing the Breaker, please keep the following notes in mind when reviewing other sections of the publication.

CAUTION: When all testing is complete, the Trip Unit must be reset. Failure to do so may cause the battery in the Rating plug to run down.

Notes:

- Publication AD-33-855 was created specifically for the "hundred" series (500, 600, 700, etc.) Retrofit Kits. Therefore certain sections and figures do not apply to the "ten" series (510, 610, 810, etc.) Retrofit Kits. Specifically, these are Sections 13 and 14, as well as Figures 3-2, 3-3, and 3-4.**
- For All Kits Other Than 510 Basic.** If testing the Breaker with Short Delay or Ground Fault functions, be sure to either plug in the Cell Harness Assembly or use the Zone Interlock Shorting Plug. Failure to do so may result in shorter than expected trip times.

3. **For 810 and 910 Kits Only.** Without any power applied to the system (neither the 120 volt power supply nor the Aux. Power Module connected), plug the External Harness into the Cell Harness and check the impedance between COM 1 and COM 2. The impedance should be between one (1) and three (3) ohms. If the impedance is not within this range, trace the wiring and examine each connection to assure its integrity.

Confirm that the IMPACC communication wiring is correct by following the procedures detailed in Section 7.4 of the Instructions for the Application of Digitrip RMS Retrofit Kits on Power Circuit Breakers. Note that for 810 and 910 Kits, the impedance between COM 1 and COM 2 should be between one (1) and three (3) ohms.

When testing is complete, disconnect the External Harness from the Cell Harness. Final External Harness connection will be performed in Step 17.

For Kits Supplied with a Cell Harness Only.

Step 17: Mounting the Cell Harness

- A. The Cell Harness is to be mounted in the Breaker Cell. The connector end is to be mounted on the right front side of the Cell, in a location suitable for connection with the External Harness. The Terminal Blocks can be mounted anywhere space is available in the Cell as long as connection to the External Harness can be made.
- B. Route the Cell Harness wiring to keep it away from any moveable parts within the Cell Housing.

Step 18: Completing the Retrofit Process

- A. Reinstall the Front Enclosure Door using the original mounting hardware.
- B. Reinstall the right Breaker Side Panel using the original mounting hardware.

Step 19: Installing the Retrofitted Breaker in the Cell



WARNING

Do not leave the Breaker in an intermediate position in the switchgear cell. Always leave it in the **CONNECTED**, **DISCONNECTED**, or (Optional) **TEST** position. Failure to do so could lead to improper positioning of the Breaker and flashover, causing death, serious personal injury, and / or property damage.

NOTE: It is the responsibility of the Retrofitter to insure proper Breaker / Cell fit. When racking the Breaker into the Connected position, the Retrofitter **MUST FOLLOW BOTH** the manufacturer's instructions and the customer's safety standards and procedures for racking a Breaker into the Connected position.

- A. With the Breaker in the Open position and the springs discharged, slowly rack the Breaker into the Connected position, making sure there is no interference or binding. The Breaker should rack smoothly and without mechanical interference between any Breaker and Cell parts. The Retrofitter will feel some resistance when the primary fingers connect onto the stabs of the Cell. This is normal.

However, if any unusual resistance is detected that could be abnormal interference between the Breaker and Cell parts, stop immediately and move the Breaker out of the Connected position. Examine what is causing the interference and correct the situation.

Digitrip Retrofit Kit Installation Components for the ITE LG-3000 Framed Series Breaker

Step	Description	Style No.	Qty.	Comment	
Step 3	Sensors		3	See Pick List	
	Sensor Mounting Parts	4A35747G04	1		
	Mounting Plate		6		
	.190-32 x 2.00 Lng. Screw Nylon		12		
	.190-32 Nut Hex Stl.		12		
	Sensor Harness Parts	4A35747G12	1		
	Sensor Harness		1		
	.164-32 x .750 Lng. Screw Fil.		2		
	.164 Flat Washer Stl.		4		
	.164 Lock Washer Stl.		2		
	.164-32 Nut Hex Stl.		2		
	Cable Clamp Nylon		2		
	Wire Tie Nylon		12		
	Step 4	Trip Unit		1	See Pick List
		Rating Plug		1	See Pick List
Trip Unit Assembly Parts		4A35747G05	1		
Mounting Bracket			1		
.190-32 x 4.00 Lng. Screw Fil.			2		
.190 Flat Washer Stl.			4		
.190 Lock Washer Stl.			2		
.190-32 Nut Hex Stl.			2		
Spacer Brass			2		
PT Module		6502C82G01	1		
PT Module Mounting Parts		4A35747G07	1	} Comm. Only	
Insulation Barrier			1		
Bracket			1		
Warning Label			1		
.138-32 x .375 Lng. Screw Fil.			2		
.138 Flat Washer Stl.			2		
.138 Lock Washer Stl.			2		
Aux. CT Module		6503C59G__	1		
Aux. CT Module Mounting Parts		4A35747G06	1		
.190-16 x .500 Lng. Screw T.C.			4		
.190 Flat Washer Stl.		4			
.190 Lock Washer Stl.		4			
Aux. CT Harness	6502C84G01	1			

Digitrip Retrofit Kit Installation Components for the ITE LG-3000 Framed Series Breaker (Continued)

Step	Description	Style No.	Qty.	Comment
Step 5	Breaker Mounted CPT Kit	8259A91G05	1	} CPT Only
	Ring Terminals (.138, .190, .250, .312, .375, .500 - Each Size)		2	
	CPT Mounting Parts	4A35747G20	1	
	.190-32 x .500 Lng. Screw Fil.		4	
	.190 Flat Washer Stl.		8	
	.190 Lock Washer Stl.		4	
	.190-32 Nut Hex Stl.		4	
Step 6	Aux. Switch Kit	4A35747G02	1	} Comm. Only
	Microswitch		1	
	Mounting Bracket		1	
	.190-16 x .500 Lng. Screw T. C.		2	
	.190 Flat Washer Stl.		2	
	.190 Lock Washer Stl.		2	
	.138-32 x 1.00 Lng. Screw Fil.		2	
	.138 Flat Washer Stl.		4	
	.138 Lock Washer Stl.		2	
.138-32 Nut Hex Stl.		2		
Step 7	Trip Unit Mounting Parts	4A35747G08	1	
	.250-20 x .750 Lng. Hex Bolt		3	
	.250 Flat Washer Stl.		3	
	.250 Lock Washer Stl.		3	
Step 8	Trip Finger Parts	4A35747G09	1	
	Trip Finger Assembly		1	
	.250-20 x 1.25 Lng. Hex Bolt		2	
	.250 Flat Washer Stl.		2	
	.250 Lock Washer Stl.		2	
Step 9	DTA Assembly	4A35747G33	1	
	DTA Mounting Parts	4A35747G10	1	
	Spacer		1	
	.312-18 x 1.00 Lng. Hex Bolt		2	
	.312 Flat Washer Stl.		4	
	.312 Lock Washer Stl.		2	
	.312-18 Nut Hex Stl.		2	
	.250-20 x .750 Lng. Hex Bolt		1	
	.250 Flat Washer Stl.		2	
	.250 Lock Washer Stl.		1	
	.250-20 Nut Hex Stl.		1	

Digitrip Retrofit Kit Installation Components for the ITE LG-3000 Framed Series Breaker (Continued)

Step	Description	Style No.	Qty.	Comment
Step 10	DTA Reset Assembly	4A35747G11	1	
Step 12	.164-32 x .750 Lng. Screw Fil.		2	} From Step 3
	.164 Flat Washer Stl.		4	
	.164 Lock Washer Stl.		2	
	.164-32 Nut Hex Stl.		2	
	Cable Clamp Nylon		2	
Step 14	Ring Terminals (.138, .190, .250, .312, .375, .500 - Each Size)		2	From Step 5
	Wire Tie Nylon		2	From Step 3
Step 15	External Harness	6502C83G	1	
	External Harness Parts	4A35747G13	1	
	.190-16 x .500 Lng. Screw T. C.		2	
	.190 Flat Washer Stl.		2	
	.190 Lock Washer Stl.		2	
	Cable Clamp Nylon		2	
	Wire Tie Nylon		10	From Step 3
Step 17	Cell Harness	6503C57G__	1	Except 510 Basic

NOTE: Due to the wide vintage of breakers and the multiple functions of the Retrofit components, some excess hardware may remain when the Retrofit is complete.

Torque Values for General Mounting

Decimal Size (in)	Standard Size	Torque (in-lbs)	Torque (ft-lbs)
.112	4-40	10	0.8
.138	6-32	18	1.5
.164	8-32	36	3.0
.190	10-32	46	3.8
.250	1/4-20	100	8.3
.312	5/16-18	206	17.2
.375	3/8-16	356	29.7
.438	7/16-14	572	47.7
.500	1/2-13	856	71.3

Torque Values for Copper BUS Connectors

Decimal Size (in)	Standard Size	Torque (in-lbs)	Torque (ft-lbs)
.250	1/4-20	60	5
.312	5/16-18	144	12
.375	3/8-16	240	20
.500	1/2-13	600	50

We wish to thank you for purchasing the Digitrip Retrofit System. Digitrip Retrofit Kits are designed and manufactured in America with pride. All the components are engineered to fit the existing Circuit Breaker with little or no modifications to the existing Breaker. However due to the wide variety and vintage of Breakers in use today, an occasional problem may arise. Please contact us with any questions, comments or concerns.

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