

INSTRUCTIONS

Tom: 1st instruction for a kit.

This is an example of documentation that I have in mind for other kits.

INSTALLATION OF RL-PT MODULE TO

TYPE RL POWER CIRCUIT BREAKER

What do you think about it?

*Jensen
11/2/91*

THIS DOCUMENTATION DESCRIBES THE ASSEMBLY
OF THE RL-PT-MODULE RETROFIT KIT
SIEMENS PART NUMBER 18-487-906-501

PLEASE READ THE INSTRUCTIONS PRIOR TO THE
ASSEMBLY OF THE PT-MODULE KIT.

STANDARD DRAWING

DO NOT DESTROY, CHANGE OR
ADD MARK NO'S W/O APPROVAL
OF DESIGN ENGINEERING.

USED ON:

* CAD GENERATED, DO NOT CHANGE MANUALLY.

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		<i>1/8</i> <i>11/2/91</i>	1-PLACE DECIMAL ± .06	ANGULAR	<input checked="" type="checkbox"/>	SIMILAR TO
			2-PLACE DECIMAL ± .03			DR _____
			3-PLACE DECIMAL ± .01			CH _____
			DATA BASE	disc (H. Beck)	MACHINED SURFACE TEXTURE	APP <i>J.F.</i> 9 / 91
MATERIAL		N-C 2	CURRENT DATE 3-8	PART NUMBER 9-19 18-658-669-404		ISS 20-21 01
INSTRUCTIONS		N				
TYPE 22	REP 23	PART NAME 24-43		N.M. 44-48	SCALE 1X	CHARACTERISTICS SHEET NO.

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PACKAGE CONTENTS

QTY	ITEM	DESCRIPTION	PART NUMBER	
1	1	PT-MODULE	18-817-157	501
3	2	FUSEBLOCK	15-172-704	001
3	3	FUSE 0.75A, 600V	15-172-704	002
1	4	PLUG CONNECTOR, 4 POINT	15-172-638	248
3FT	5	600V WIRE 14 GA HIGH TEMP.	15-172-756	010
10	6	TY-RAP MOUNTING PLATE	00-857-271	750
10	7	TY-RAP .094 WIDE X 3.62 LONG	00-857-271	104
5	8	SPADE TERMINAL, UNINSULATED	15-172-099	022
		SIZE NO. 10, 14 GA WIRE		
11	9	RING TERMINAL, INSULATED	15-172-099	004
		SIZE NO. 10, 14 GA. WIRE		
2	10	RING TERMINAL, INSULATED	15-172-099	002
		SIZE NO. 6, 14 GA. WIRE		
2	10A	RING TERMINAL, INSULATED	00-851-078	072
		SIZE 1/4, 14 GA. WIRE		
6	11	INSULATOR .14" I.D. / .17" O.D.	15-172-638	316
4	12	SCREW, NO. 10-16	00-615-644	220
		THREAD CUTTING, PHILLIPS HD, 5/8 LNG.		
8	13	WASHER, NO. 10, .20" I.D. / .43" O.D.	00-651-007	087
7	14	LOCKWSHR, NO. 10, .19" I.D. / .33" O.D.	00-655-017	022
9	15	SCREW, NO. 6-20	00-615-651	124
		THREAD CUTTING, PAN HD. 0.5" LONG		
10	16	LOCKWSHR, NO. 6, .14" I.D. / .25" O.D.	00-655-047	060
3	17	SCREW, NO. 10-32	00-615-231	220
		MACH SCREW, FILLISTER HEAD, 5/8" LONG		
2	18	SCREW, NO. 10-32	00-615-245	216
		MACH SCREW, PAN HEAD, 3/8" LONG		

(CONTINUATION ON SHEET 3 OF 27)

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PI-PT-MODULE RETROFIT

DWG NO. 18-658-669-404

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QTY	ITEM	DESCRIPTION	PART NUMBER	
5	19	SCREW, NO. 8-32	00-615-641	903
		MACH SCREW, PAN HEAD, 3/8" LONG		
6	20	LOCKWSHR, NO. 8. 16" I.D. / .29" O.D.	00-655-017	020
3	21	SCREW NO. 10-32	00-615-413	220
		SELF-TAP (TAP-TITE), SEMS HEAD, 5/8" LONG		
2	22	SCREW, NO. 10-32	00-615-203	216
		SELF TAP (TAP-TITE), SEMS HEAD, 3/8" LONG		
3	23	WASHER .31" I.D. / .75" O.D.	00-651-007	160
4	24	WASHER, NO. 6 .14" I.D. / .31" O.D.	00-651-027	050
1	25	CARTON ASSY	18-751-748	501
1	26	LABE INFORMATION	18-751-749	001
1	27	ENVELOPE	18-751-736	001
1	28	INSTALLATION INSTRUCTIONS	18-658-669	404
3	29	RUBBER BAND	15-172-791	005
3	30	PLASTIC BAG 4 3/4" X 3"	00-953-033	201

HARDWARE SYMBOLS

THREAD CUTTING
WITH PAN HD.



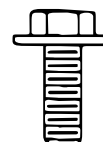
THREAD CUTTING
WITH PHILLIPS HD



MACH SCREW
WITH PAN HD



MACH SCREW
WITH SEMS HD



WASHER



LOCKWASHER



SPADE TERMINAL
UNINSULATED



RING TERMINAL
INSULATED



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TOOL REQUIREMENTS
FOR
RL-PT-MODULE RETROFIT

3/16" Allen wrench
5/32" Allen wrench
5/16" Nut driver
1/4" Screw driver
3/8" Screw driver
#32, 0.116"φ drill bit
#18, 0.169"φ drill bit
3/16, 0.187"φ drill bit
1/4, 0.250"φ drill bit
1/2", 0.500"φ drill bit
Hacksaw
Flat file
#14 wire stripper
#14 wire cutter
#14 lug crimper
Electric drill, 1/2" chuck
Mechanic's ruler, 6" with 32's
Tape measure with 1/16's fractions

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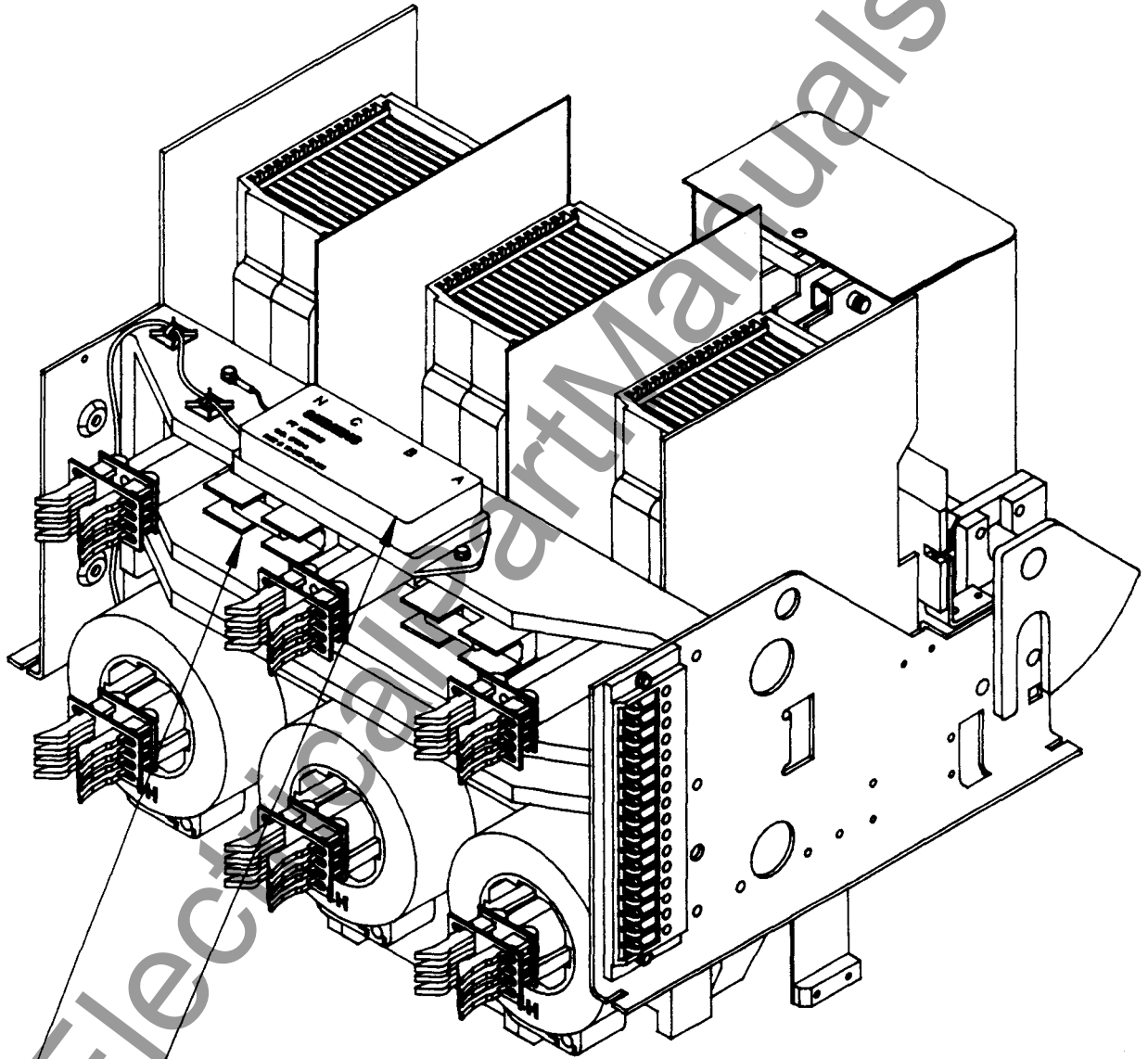
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RL-PT MODULE RETROFIT

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TYPICAL PT-MODULE INSTALLATION



PT-MODULE

PT-MODULE FUSE
ONE PER PHASE

BREAKER SHOWN:
RL800

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DETAIL 1

RL-PT-MODULE RETROFIT

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RL-PT-MODULE FIELD MOUNTING INSTRUCTIONS

1.0.0 PURPOSE

The RL-PT-module (part number 18-817-157-501) is used to feed the trip unit of the breaker with primary (bus) voltage information.

The PT-module is mounted on top of the RL-breaker back panel.

The primary voltage feeding the PT-module is picked up at the primary disconnect fingers of the RL-breaker and run through the breaker back panel mounted fuses into the PT-module.

The secondary voltage of the PT-module is fed into the trip unit.

2.0.0 MODIFICATION REQUIREMENTS

Prior to the performance of any work, you need to identify per the following guideline, the TYPE and VINTAGE RL-breaker to be modified and it needs to be known if the breaker is operating in a 3 WIRE or 4 WIRE power system.

2.1.0 RL-BREAKER TYPE TO BE MODIFIED

Obtain the RL-breaker type to be modified from the RL-breaker rating label and determine into which of the four categories below your breaker belongs.

2.1.1 RL800, RLX800, RLH800, RL1600, RLX1600, RL2000

2.1.2 RLE800, RLI 800, RLE2000

2.1.3 RL3200, RLX3200, RL4000, RLE4000, RLF3200, RLF4000

2.1.4 RLF800, RLF1600, RLF2000

Suffix "LM" and S (i.e., RL800 LM or RL2000S) may be ignored.

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NOTE THE CATEGORY THAT APPLIES TO THE BREAKER TO BE MODIFIED

The Category is:

2.1.

2.2.0 RL-BREAKER VINTAGE

Dependent upon the breaker manufacturing date, your breaker either has or has not pre-drilled HOLES & INSERTS at the breaker back panel to accept the PT module and the fuse holders. Determine your specific application:

holes are provided

holes are NOT provided

2.3.0 POWER SYSTEM

Determine the type power system in which your breaker is operating, "3-WIRE" or "4-WIRE". The trip unit wiring diagram (diagram # is listed on the breaker rating label) will provide the answer to that question.

A breaker wired for a 3-wire system uses three (3) current sensors (CT's); a breaker wired for a 4-wire system uses more than 3 CT's while the 4th+ CT(s) is physically external to the breaker but wired into the breaker through the secondary disconnects.

It is of great importance to know if the braker to be modified is operating in a 3-wire or 4-wire system because the neutral of the PT module will need to be **ISOLATED** in a **3-WIRE** system and it will need to be connected to **BREAKER GROUND** in a **4-WIRE** system.

Application is:

three-(3)-wire

four-(4)-wire

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PT MODULE RETROFIT

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3.0.0 DETERMINATION OF MODIFICATION SEQUENCE

Take the three answers, BKR-TYPE, VINTAGE & POWER SYSTEM and highlight the line, in Table 1 below, that describes the specific situation. You may want to write the modification sequence you just selected on a piece of paper. This will avoid flipping the pages back and forth and you have the option to cross out each step as completed.

Table 1:

RL-Breaker TYPE	HOLES PROVIDED	3- OR 4- WIRE	MODIFICATION SEQUENCE
2.1.1	YES	3	4.0.4, 7, 10, 12, 15, 16, 20, 23
2.1.1	YES	4	4.0.4, 7, 10, 12, 15, 16, 18, 20, 23
2.1.1	NO	3	4.0.4, 7, 10, 12, 15, 16, 20, 23
2.1.1	NO	4	4.0.4, 7, 10, 12, 15, 16, 18, 20, 23
2.1.2	YES	3	4.0.1, 4, 7, 10, 12, 16, 17, 20, 23
2.1.2	YES	4	4.0.1, 4, 7, 10, 12, 16, 17, 18, 20, 23
2.1.2	NO	3	4.0.1, 4, 7, 10, 12, 16, 17, 20, 23
2.1.2	NO	4	4.0.1, 4, 7, 10, 12, 16, 17, 18, 20, 23
2.1.3	YES	3	4.0.6, 8, 11, 13, 15, 16, 19, 20, 23
2.1.3	YES	4	4.0.6, 9, 11, 14, 15, 16, 19, 20, 23
2.1.3	NO	3	4.0.6, 8, 11, 13, 15, 16, 19, 20, 23
2.1.3	NO	4	4.0.6, 9, 11, 14, 15, 16, 19, 20, 23
2.1.4	YES	3	4.0.2, 3, 5, 7, 10, 12, 15, 16, 20, 21, 22, 23
2.1.4	YES	4	4.0.2, 3, 5, 7, 10, 12, 15, 16, 18, 20, 21, 22, 23
2.1.4	NO	3	4.0.2, 3, 5, 7, 10, 12, 15, 16, 20, 21, 22, 23
2.1.4	NO	4	4.0.2, 3, 5, 7, 10, 12, 15, 16, 18, 20, 21, 22, 23

4.0.0 MODIFICATION INSTRUCTIONS

PERFORM ONLY THOSE STEPS THAT APPLY TO YOUR SITUATION AS YOU HAVE IDENTIFIED IN TABLE 1 ABOVE. THE INSTRUCTIONS REFER TO DETAIL DRAWINGS WHICH ARE INCLUDED IN THIS INSTALLATION MANUAL. EXAMPLE: "DRILL 1/2"φ HOLES PER DETAIL 2". (YOU MAY WANT TO SEPARATE THE DETAIL DRAWINGS FROM THE ASSEMBLY INSTALLATION TO AVOID FLIPPING THE PAGES BACK AND FORTH.)

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4.0.1 REMOVAL OF GLASS POLYESTER SUPPORT

Category 2.1.2 has a 1/8" thick glass polyester barrier at the rear of the breakers, just behind the six primary finger disconnects. The barrier needs to be removed to install the fuses for the PT module. On older version barriers, three holes will need to be drilled.

- remove all six primary finger assemblies, using a 3/16" Allen wrench. Turn screws alternately.
- remove barrier and drill three 1/2" dia. holes per DETAIL 2 for RLE800 and RLI 800, or DETAIL 3 for RLE2000.
DO NOT FLIP THE BARRIER (TOP TO BOTTOM OR LEFT TO RIGHT). DRILL HOLES IN THE REQUIRED LOCATION AS THE BARRIER COMES OFF THE Breaker THIS WILL MAKE IT EASIER TO REINSTALL THE BARRIER, GETTING THE SLOTS LINED UP WITH THE PRIMARY STABS; IT'S A TIGHT FIT, NO FILING PERMITTED.
- if holes are in existence, just remove the barrier and mark its upper left corner to avoid flipping when reinstalling the barrier. Continue with the next step of the sequence identified.

4.0.2 REMOVAL OF POWER FUSES

- remove all three power fuses. When reinstalling, read paragraph 4.0.22. Caution is required.

4.0.3 REMOVAL OF POWER FUSE BARRIERS

- loosen the screws of the arc chute support bracket, the L-shape type brackets holding the glass polyester barrier at the front of the breaker across the 3 arc chutes. Tilt the barrier toward the front to pull out the two fuse barriers left and right to the center fuse.
- cut fuse barriers per DETAIL 4

4.0.4 PT-MOUNTING HOLES, Breakers \leq 2000A FRAME SIZE, UNFUSED

- drill six (6) holes at the top of the back panel to mount the PT-module per DETAIL 5, (top view). One-quarter drill bit and #18 drill (0.169"φ) are needed.

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4.0.5 PT MOUNTING HOLES, FUSED Breakers

- breakers with power fuses require drilling PT module mounting holes, regardless of whether or not your back panel is equipped with PT mounting holes and inserts.
- drill three (3) "A" holes for the primary wires per DETAIL 6, 1/4" drill bit.
- drill two (2) mounting holes per DETAIL 6, drill bit #18 (0.169") to mount the "feet" of the PT module.
- drill one (1) hole per DETAIL 6, drill bit #18 (0.169") for neutral wire mounting. A hole will not need to be drilled in case an insert for the neutral wire is already provided.

4.0.6 PT-MODULE MOUNTING HOLES, Breakers ≥3200A

- drill six (6) holes per DETAIL 7. Read the instructions in DETAIL 7 regarding the neutral hole requirement ("C"-hole). The size of the "C"-hole differs for breakers operating in a 3-wire system compared to breakers in a 4-wire system.

4.0.7 PT-FUSE HOLDER MOUNTING HOLES, Breakers ≤2000A (fused & unfused)

- drill holes per DETAIL 5 (rear view), 3 holes each drill #18 (0.169")

4.0.8 PT-FUSE HOLDER & NEUTRAL MOUNTING HOLES, Breakers ≥3200A, 3-WIRE SYSTEM

- drill six "A" holes and one "B" hole per DETAIL 8 and pay careful attention to the different dimensions required on 3200A and 4000A breakers. Double-check your breaker rating label. **Do not drill the holes through. See hole depth requirement on DETAIL 8.**

4.0.9 PT-FUSE HOLDER MOUNTING HOLES, Breakers ≤3200A, 4-WIRE SYSTEM

- drill six "A" holes per DETAIL 8 and pay careful attention to the different dimensions required on 3200A and 4000A breakers. Double-check your breaker rating label. Do not drill the "B"-hole. **Do not drill the "A"-holes through; see depth requirement on DETAIL 8.**

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4.0.10 PT-MODULE FUSE HOLDER MOUNTING, Breakers \leq 2000A (fused & unfused)

- install fuse holders per DETAIL 9
- use hardware items 19 & 20 in case inserts and pre-drilled holes for fuse holders were provided
- use hardware items 15, 16, 24 in case holes for the fuse holders needed to be drilled.

4.0.11 PT-MODULE FUSE HOLDER MOUNTING, Breakers \geq 3200A

- install fuse holders per DETAIL 10
- use hardware item 15

4.0.12 PT-MODULE INSTALLATION & WIRING, Breakers \leq 2000A (fused & unfused)

- install the PT-module with the neutral wire exiting to the left when looking at the rear of the breaker. Run the 3 wires through "A" holes of DETAIL 5 on unfused breakers. Run the 3 wires through "A" holes of DETAIL 6 on fused breakers. See paragraph 4.0.5.
- use hardware items 13, 14, 17 in case inserts on unfused breakers are provided for PT-module feet mounting.
- use hardware items 12, 13, 14 for fused breakers and in case no inserts are provided on unfused breakers for PT-module feet mounting.
- run wires straight in exact pattern as shown on DETAIL 9. Use about a 1/4" radius for bends.
- connect wires to fuse terminals, using item 9, #10 insulated ring terminals. Use a stripper to take off the wire insulation. **DO NOT USE A WIRE CUTTER TO STRIP OFF THE WIRE INSULATION!**
- connect the neutral wire to the provided insert ("B"-hole DETAIL 5), using hardware items 9, 13, 14, 18 in case an insert was provided. Use hardware items 9, 13, 14, 22 in case you have drilled the hole.

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4.0.13 PT-MODULE INSTALLATION & WIRING, Breakers \geq 3200A, 3-WIRE SYSTEM

- install the PT module with the neutral wire exiting to the left when looking at the rear of the breaker per DETAIL 10.
- install four (4) wire insulators, item 11 per DETAIL 10.
- run primary wires through the insulators and connect to the fuse holders per DETAIL 10 using terminals, item 9 and tie-wrap items 6 and 7.
- if PT-feet mounting holes must be **drilled**, use hardware items 21 and 23 to mount the feet of PT module. If **tapped holes** were provided, use hardware items 13, 14, 17, 23.
- connect neutral wire per DETAIL 10 using hardware items 10, 15, 16, 24.

4.0.14 PT-MODULE INSTALLATION & WIRING, Breakers \geq 3200A, 4-WIRE SYSTEM

- install the PT module with neutral wire exiting to the left when looking at the rear of the breaker per DETAIL 11.
- install 3 wire insulators, item 11 per DETAIL 11.
- run primary wires through insulators, put washers item 23 underneath PTmod. feet and connect feet with item 21 in case no holes were provided. Use hardware items 13, 14, 17 in case tapped holes were provided.
- connect neutral wire per DETAIL 11, using hardware items 9 and 22 in case no hole was provided. If a tapped hole was provided, use hardware items 9, 13, 14 and 18.

4.0.15 FUSE HOLDER WIRE CONNECTION TO PRIMARY FINGERS
ALL Breakers EXCEPT CATEGORY 2.1.2

(2.1.2 are those breakers With a glass polyester support behind the primary fingers.)

- Loosen the lower screw of the upper primary fingers and install the wire per DETAIL 9 on breakers \leq 2000A, using spade terminal item 8. Assure that the spade terminals on the primary fingers are located underneath the washer of the screw. Do not install the spade terminal between the spring holder plate of the primary fingers and the copper stab of the breaker pole.

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- on breakers $\geq 3200A$, use the primary finger screw closest to the fuse terminal of the wire to be run to the primary finger. (The primary finger screw location is not fixed; it can be at any place along the circumference of the three screw holes.) Install wires per DETAIL 10, using spade terminal item 8.
- **NOTE** The terminals used on the primary fingers are **NON-INSULATED**, item 8.

4.0.16 PT-MODULE FUSE INSTALLATION, ALL Breakers

- check continuity of fuses, item 3; install fuses and check for secure fit.

4.0.17 FUSE HOLDER WIRE CONNECTION TO PRIMARY FINGERS ON Breakers, WITH REAR BARRIER CATEGORY 2.1.2

- run fuse wire through the barrier.
- reinstall the 1/8 glass polyester barrier. Watch that the three $\frac{1}{2}$ " holes in the barrier are located near the upper primary stabs and make sure that you do not flip the barrier to mix up left and right because the stab cutouts are symmetrically oriented but the holes for the wires to run-through **are not**. When reinstalling the barrier, some patience is required because of its tight fit. **DO NOT FILE THE SLOTS.**

MAKE SURE THAT THE BLACK PLASTIC PIECES ON 800A FRAME SIZES

- ! **HOLDING** THE CT's TO THE LOWER PRIMARY STABS ARE SITTING SECURELY IN ALL THREE LOWER SLOTS OF THE BARRIER ONCE YOU HAVE REINSTALLED THE BARRIER.

- reinstall primary fingers . Make a few turns of one screw, first, then start the second one and alternate tightening of screws. Use caution for the first few turns to avoid damage of threads in the copper. Use care also for the final turn to avoid stripping the threads in the copper bars. Tighten screws to 5 to 6 ft.-lbs.
- install wires to primary fingers, using the lower screws as shown per DETAIL 9. Use **uninsulated** spade terminals item 8.

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4.0.18 NEUTRAL WIRE CONNECTION ON Breakers \leq 2000A, FUSED & UNFUSED; 4-WIRE SYSTEM ONLY

- Breakers operating in a 4-WIRE system require a jumper from the neutral of the PT module to the breaker metal frame. Install that wire per DETAIL 12. DO NOT INSTALL THE JUMPER ON A BREAKER OPERATING IN A 3-WIRE SYSTEM.

4.0.19 NEUTRAL WIRE CONNECTION ON Breakers \geq 3200A

double-check the neutral connection:

- 3-wire system, PT-neutral is connected to the insulated breaker back panel
- 4-wire system, neutral is connected to the steel angle that holds the PT-module.

4.0.20 SECONDARY PT-WIRE CONNECTION, ALL Breakers

- use two tie-wrap holders with tie-wraps, items 6 and 7 on top of the back panel on breakers \leq 2000A. Using tie-wrap, tie cable to the steel angle on breakers \geq 3200, drill two holes $1/8"$ equally spaced between left side of PT-module and left side of breaker
- run cable along the left breaker frame plate/angle and then underneath the breaker at the height of the plug connection of the trip unit. Use tie-wrap holders (2 or 3) on the vertical run.
- cut the cable to suit and tie-wrap to non-moving breaker parts after you have installed the plug, part #15-172-638-248, item 4. See Detail 13.

make the following pin connections:

brown wire on pin #1
red wire on pin #2
orange wire on pin #3

The three remaining wires (same colors with a black stripe) go on pin #4.

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- check that the cable will not interfere with moving parts. Operate the breaker (close/open) a few times while moving tools and your body parts away from the breaker
- insert the plug into the trip unit with pin #1 of the 4-pin plug at the top.

4.0.21 RE-INSTALL POWER FUSE BARRIERS

- reverse process 4.0.3.

4.0.22 RE-INSTALL POWER FUSES

- reverse process 4.0.2.

CAUTION! TAKE A CLOSE LOOK AT THE POWER FUSE BOLTS LOCATED ABOVE THE PT MODULE. YOU NEED TO HAVE

!

ABOUT 1/16 CLEARANCE BETWEEN THE END OF THE BOLTS AND THE TOP OF THE PT-MODULE. SHOULD THE BOLT BE TOO LONG, GRIND IT OFF OR USE AN ADDITIONAL WASHER UNDERNEATH THE BOLT HEAD(S).

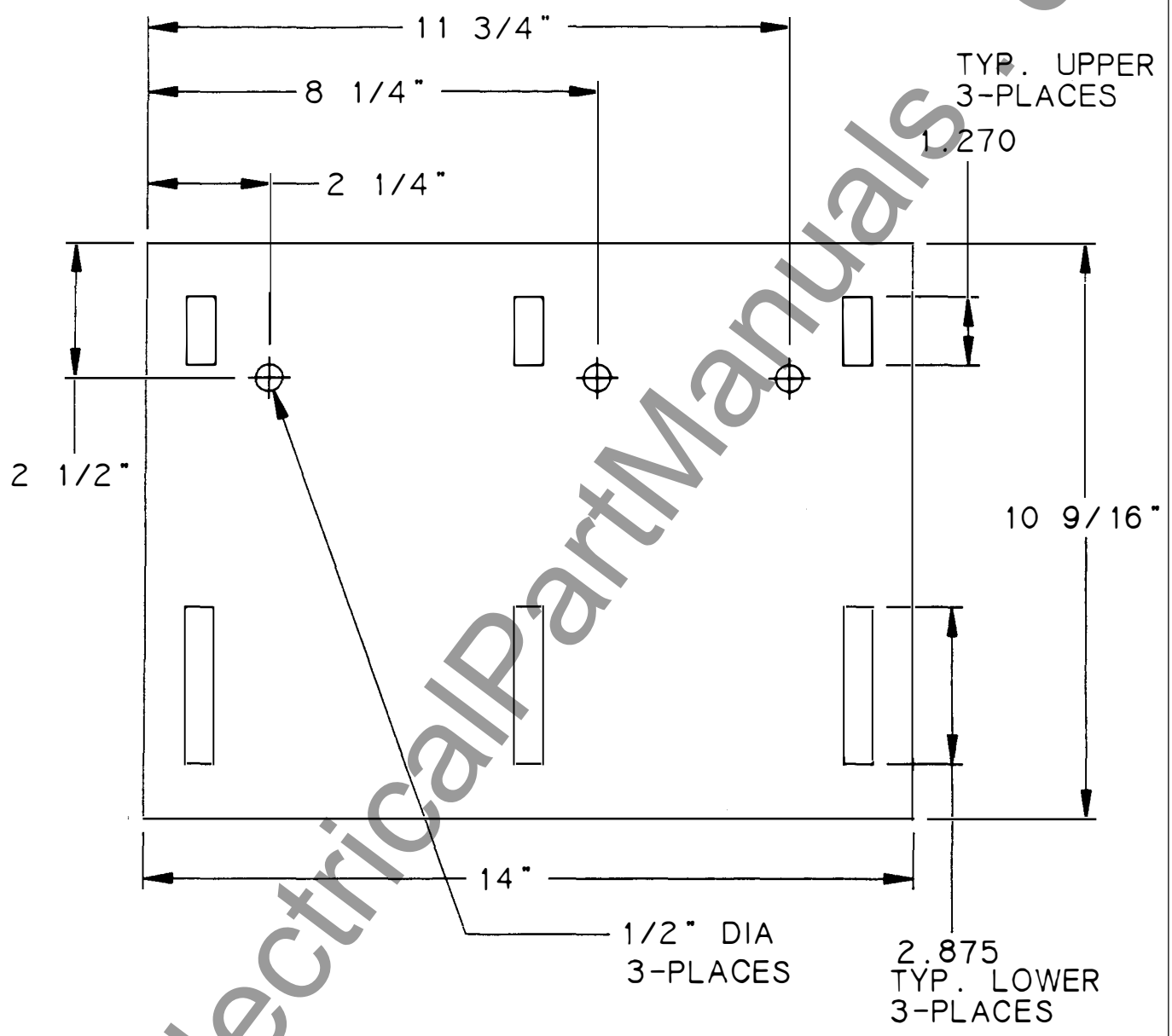
4.0.23 ELECTRICAL TESTING

The testing of the PT-module is covered by the trip unit test procedure and is not part of this package. The following check, however, is recommended:

- a.) disconnect the PT-module neutral from case ground and insulate the terminal of that wire with electrical scotch tape.
- b.) Disconnect the 4-pin plug from the trip unit. Connect 120VAC between ϕA & ϕB of the upper breaker primary disconnects and measure the voltage, about 1.2 VAC on pin 1 & 2 of the 4-pin plug and about 0.6 VAC between pins 1 & 4.
Respectively, 120VAC on ϕA & ϕC , 1.2 VAC pin 1 & 3, 0.6 VAC pin 3 & 4 and 120VAC on ϕB & ϕC , 1.2 VAC pin 2 & 3, 0.6 VAC pin 2 & 4
- c.) Reinstall the neutral in case it needed to be disconnected.
- d.) Reinstall the 4-pin plug on the trip unit with pin #1 being the upper pin.

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USED ON RLE800 AND RLI800



PART: REAR BARRIER (PRIMARY CONNECTOR SUPPORT)
 MATERIAL: 1/8" THICK GLASS POLYESTER

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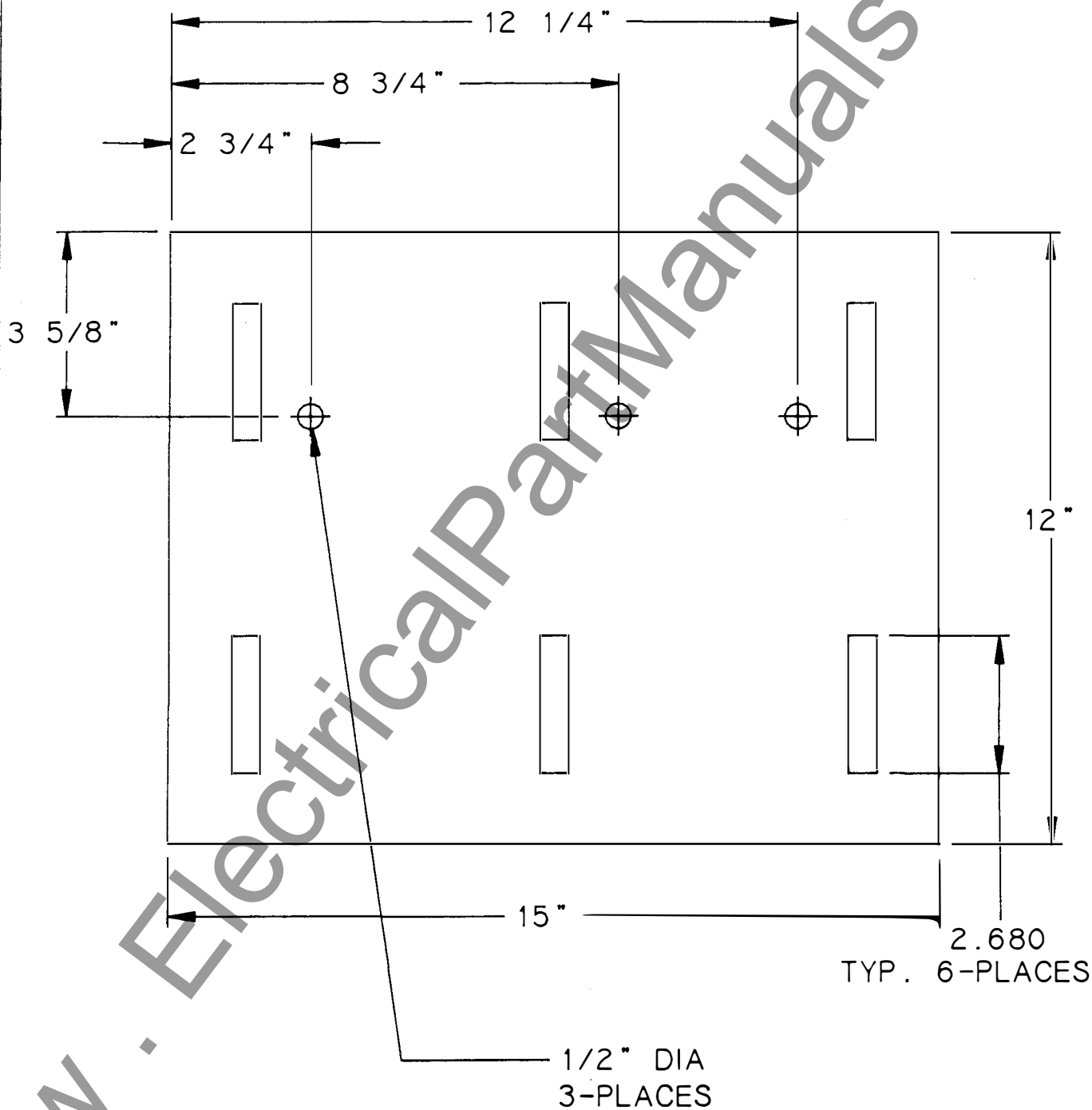
DETAIL 2

RL-PT-MODULE RETROFIT

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USED ON RLE2000



PART: REAR BARRIER (PRIMARY CONNECTOR SUPPORT)
MATERIAL: 1/8" THICK GLASS POLYESTER

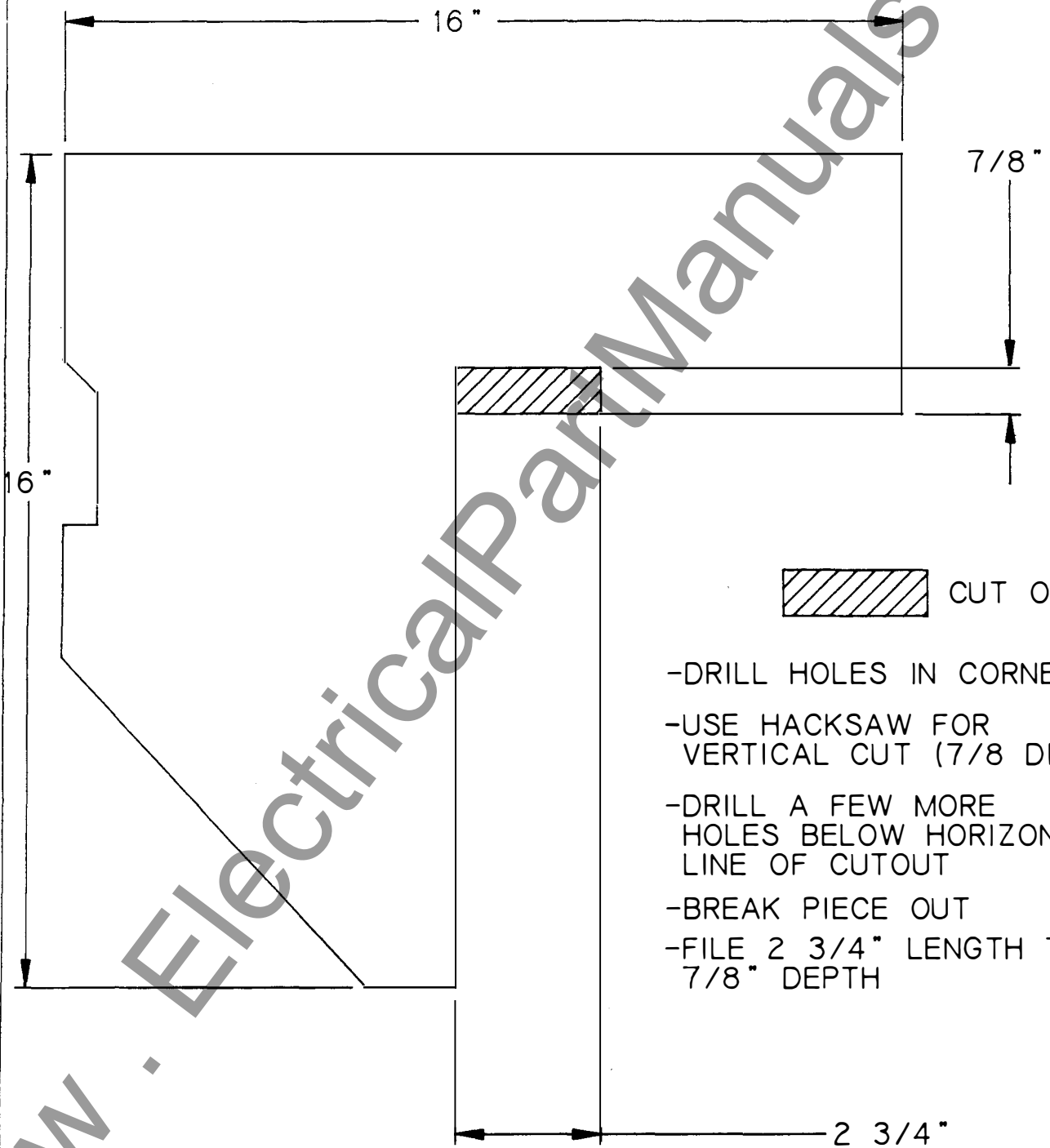
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DETAIL 3

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FUSE BARRIER MODIFICATION



 CUT OUT

- DRILL HOLES IN CORNERS
- USE HACKSAW FOR VERTICAL CUT (7/8 DIM.)
- DRILL A FEW MORE HOLES BELOW HORIZONTAL LINE OF CUTOUT
- BREAK PIECE OUT
- FILE 2 3/4" LENGTH TO 7/8" DEPTH

MATERIAL: 1/16" THICK GLASS POLYESTER

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INSTRUCTIONS

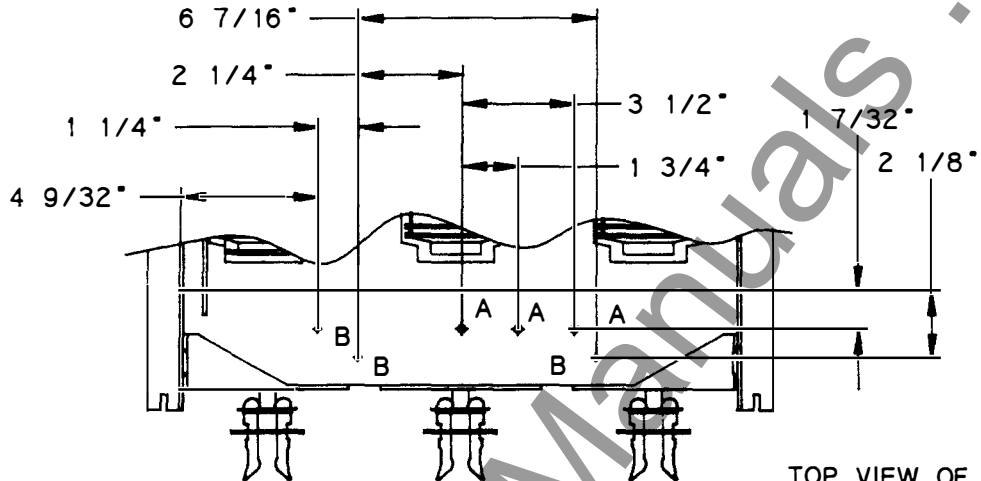
DETAIL 4

PART MODULE RETROFIT

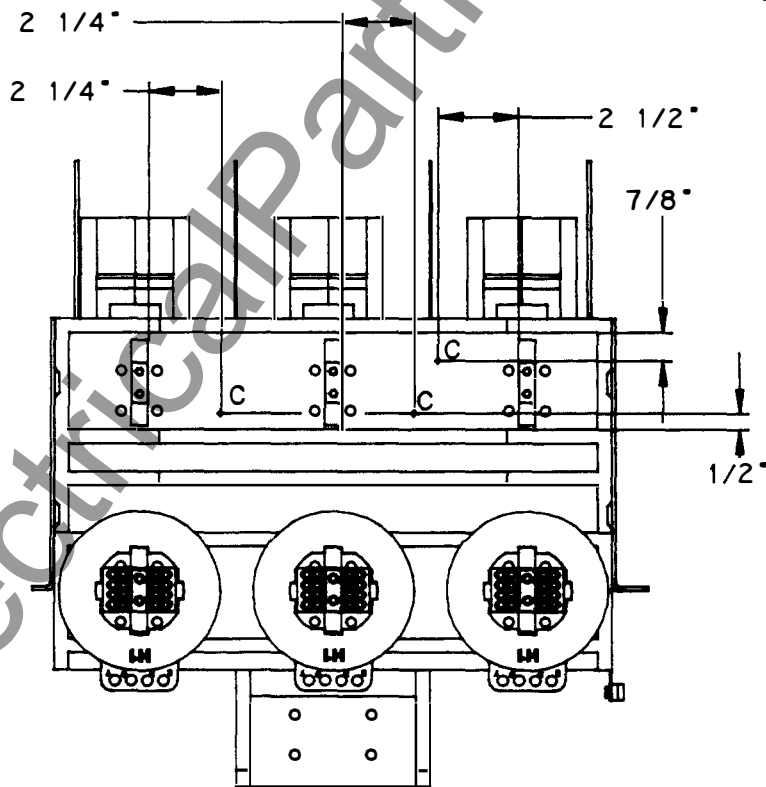
DWG NO. 18-658-669-104

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**PT AND FUSE MOUNTING HOLES
ON UNFUSED RL-BKRS. ≤ 2000A**



TOP VIEW OF BREAKER
BACK PANEL



HOLE CHART

A	1/4" DIA THRU	
B	0.169" DIA THRU	DRILL NO. 18
C	0.116" DIA	DRILL NO. 32

BREAKER REAR VIEW

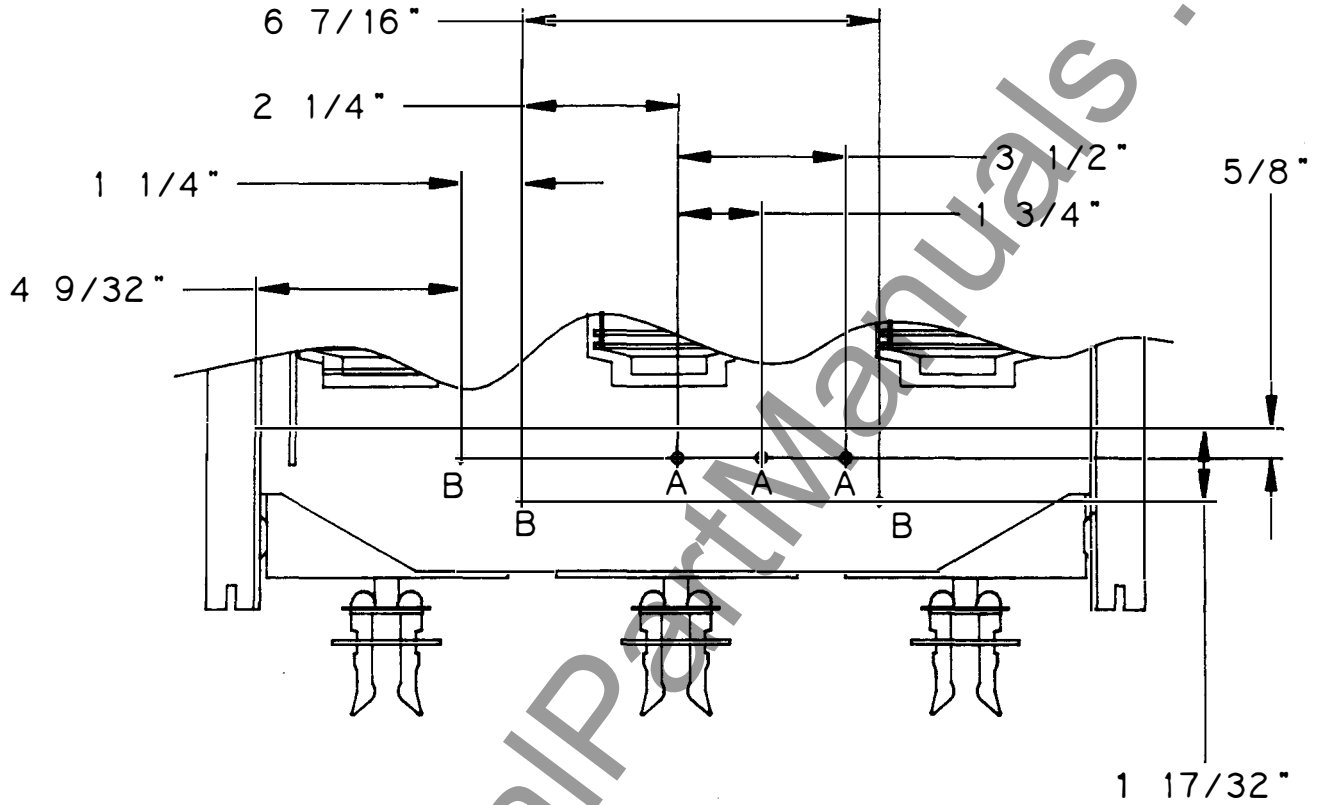
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INSTRUCTIONS

DETAIL 5

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**PT-MOUNTING HOLES ON
FUSED BREAKERS**



TOP VIEW OF BREAKER BACK PANEL

HOLE CHART

A	1/4" DIA THRU
B	0.169" DIA THRU

DRILL NO. 18

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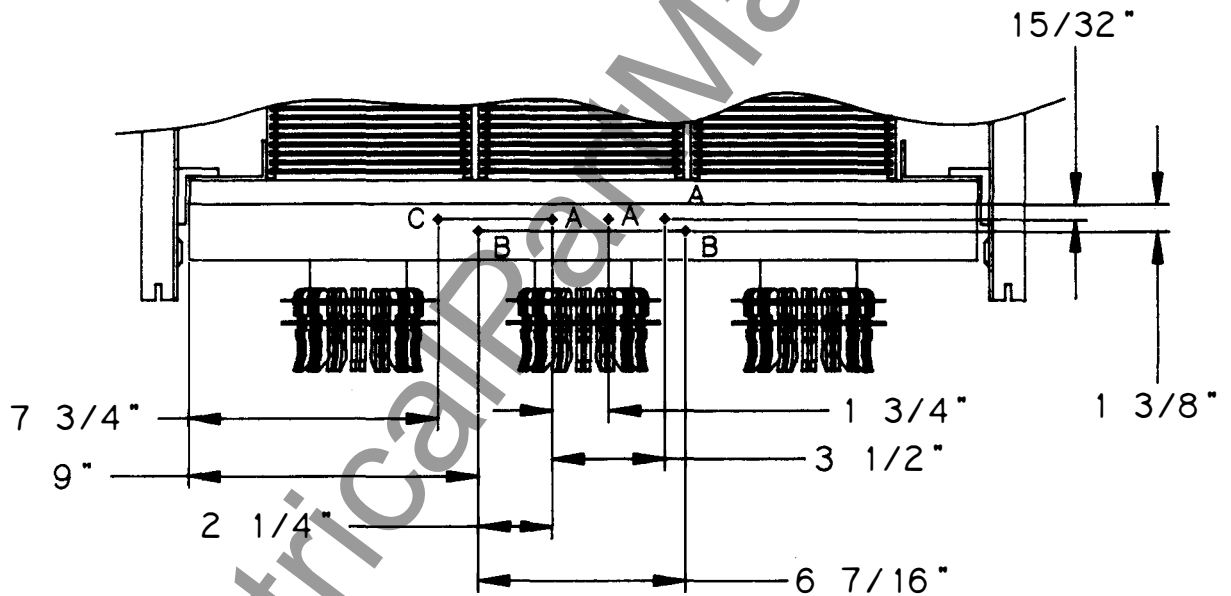
DETAIL 6

RL-PT-MODULE RETROFIT

DWG NO. 18-658-669-404 SHT. 20 OF 27

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PT-MOUNTING HOLES ON BRKRS. \geq 3200A



TOP VIEW OF BRKRS. \geq 3200A

HOLE CHART

A	DRILL 0.187", DRILL NO. 3/16
B	DRILL 0.169", DRILL NO. 18
C	DRILL EQUAL TO "A" FOR 3-WIRE SYSTEM DRILL EQUAL TO "B" FOR 4-WIRE SYSTEM

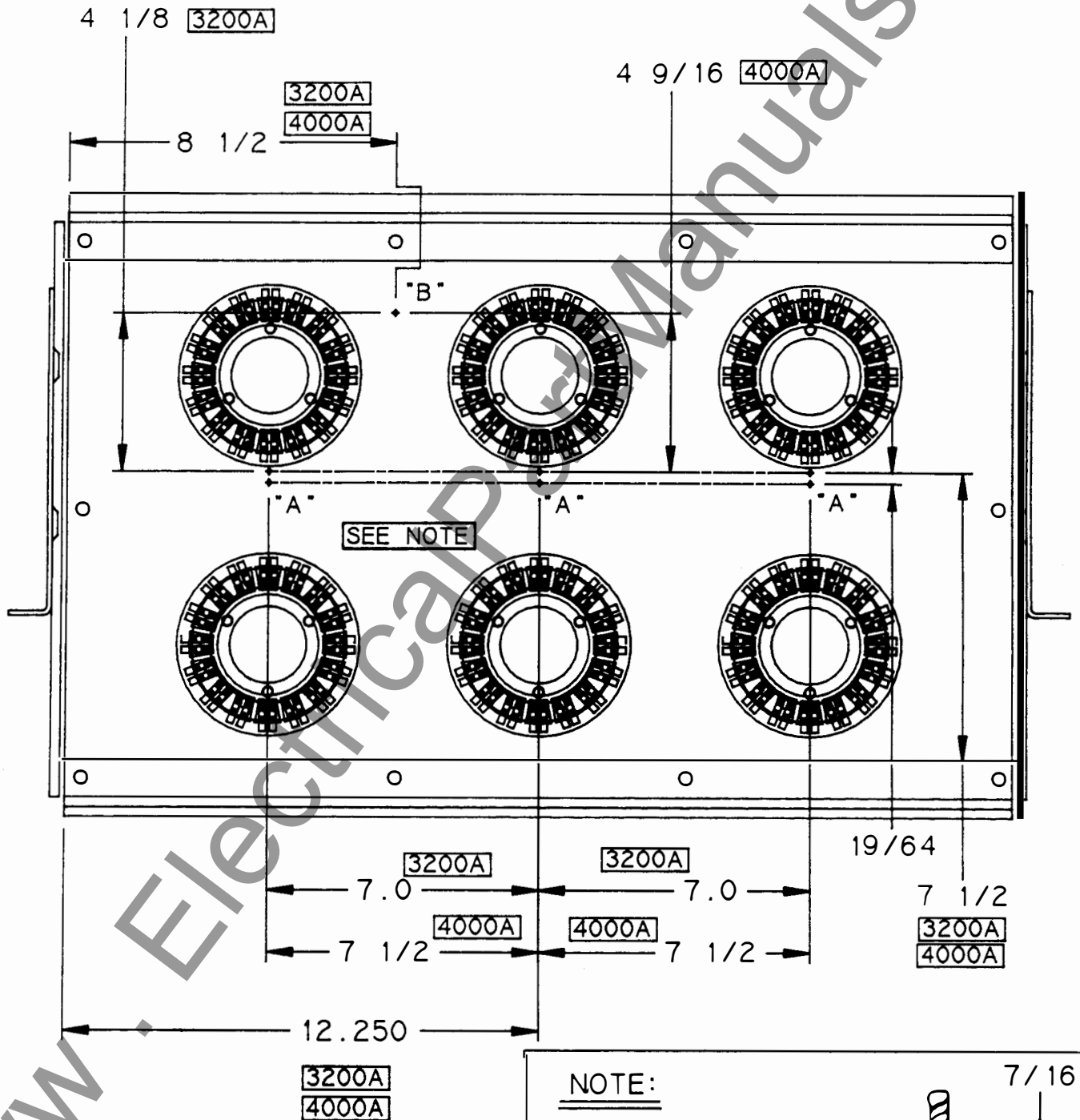
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ELECTRICAL APPARATUS DIVISION

INSTRUCTIONS

DETAIL 7

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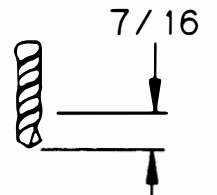
PT-FUSE HOLDER MOUNTING HOLES ON BRKRS. \geq 3200A



REAR VIEW OF BKRS. \geq 3200A

NOTE:

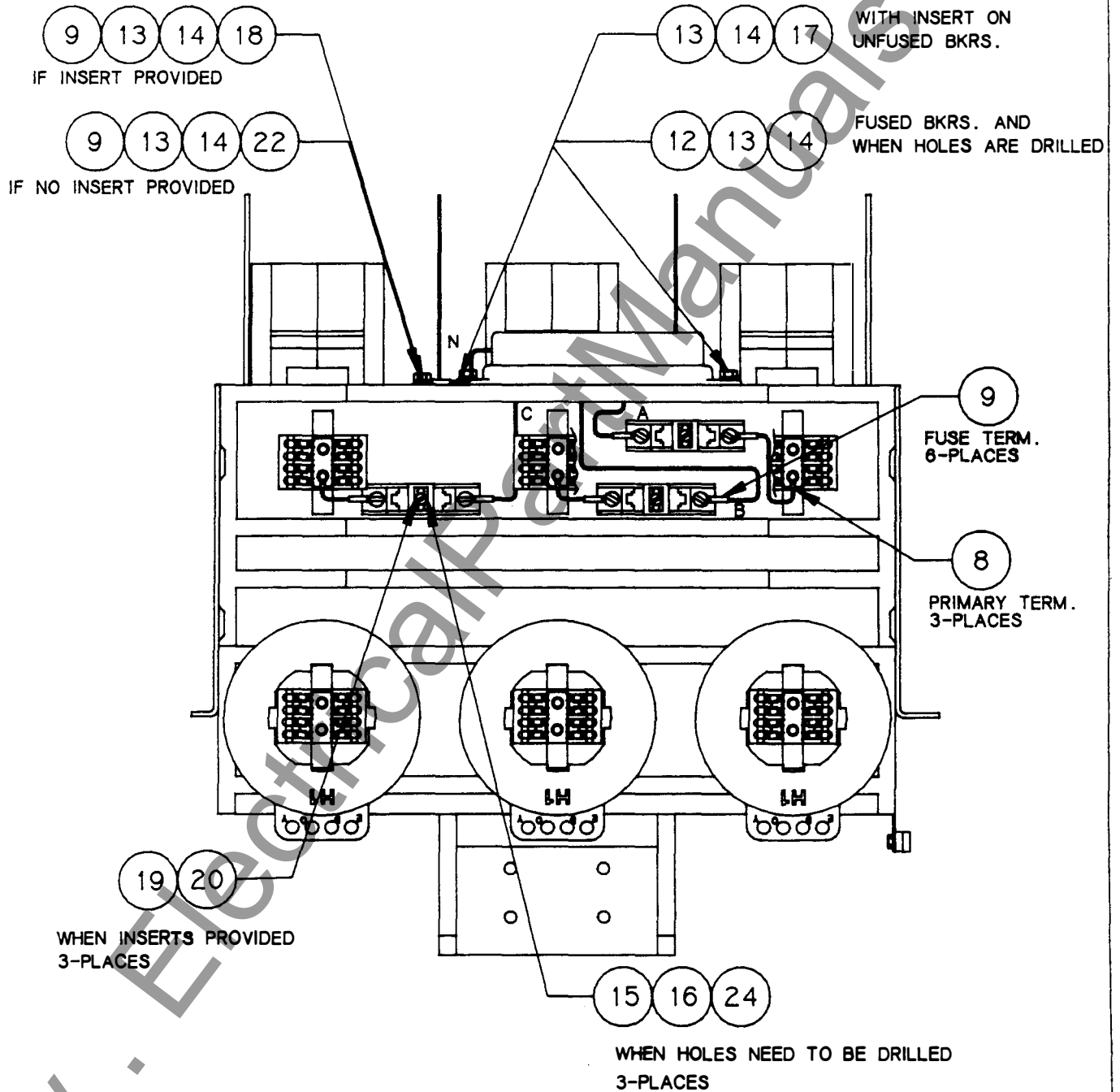
DO NOT DRILL THROUGH. SET A GAGE AT YOUR DRILL BIT AND DRILL 7/16 DEEP. ALL SEVEN(7) HOLES 0.116 DIA., DRILL NO. 32



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**PT-MODULE & FUSE HOLDER MOUNTING
AND WIRING ON FUSED & UNFUSED
BREAKERS ≤ 2000A**



REAR VIEW OF FUSED AND UNFUSED BKRS. ≤ 2000A

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INSTRUCTIONS

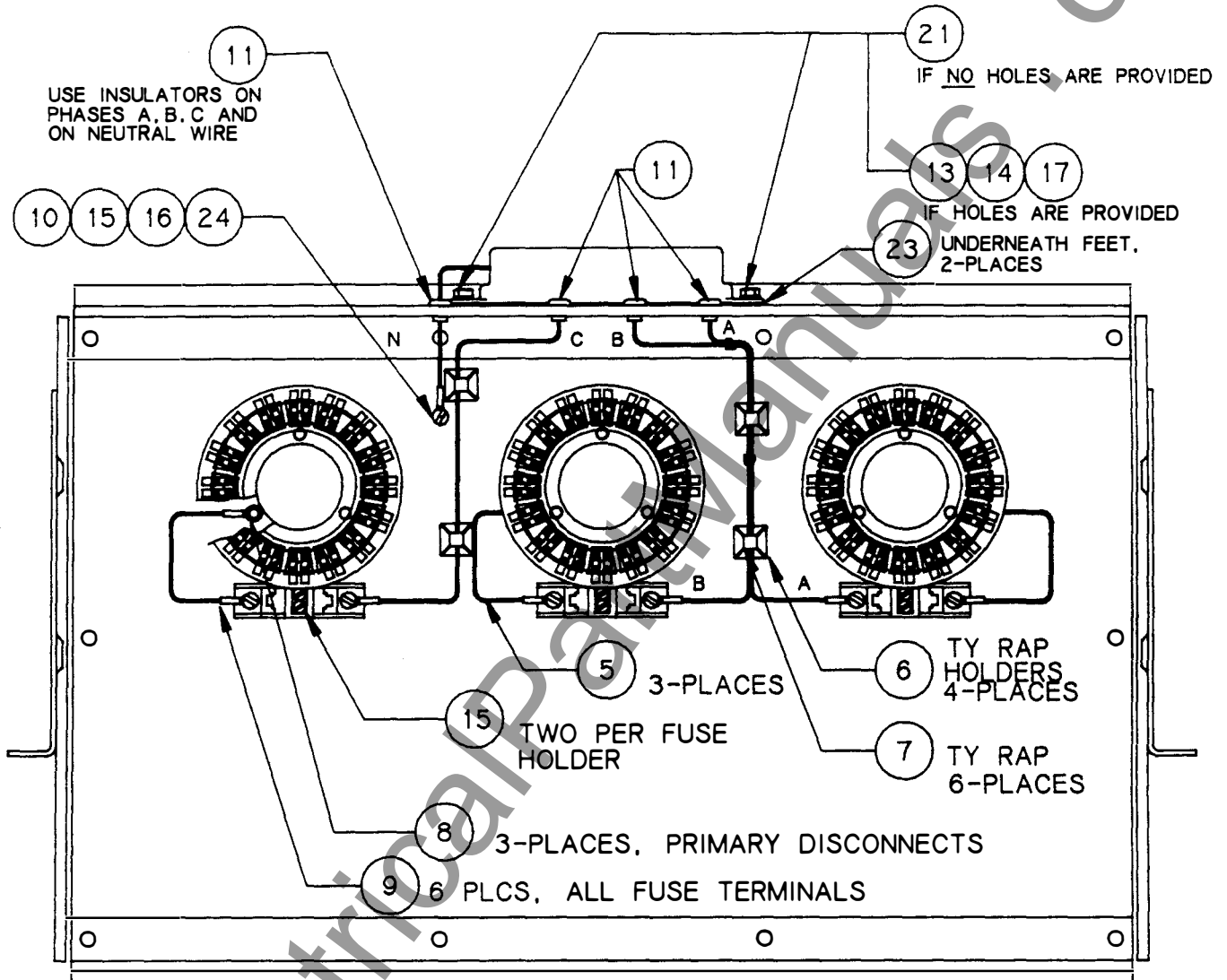
DETAIL 9

PT MODULE RETROFIT

DWG NO. 18-658-669-404

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**PT-MOD & FUSE HOLDER MOUNTING AND WIRING
ON BKRS. $\geq 3200A$ OPERATING IN A THREE (3) WIRE SYSTEM**



LOWER PRIMARIES NOT SHOWN

REARVIEW OF BKRS. $\geq 3200A$, 3-WIRE SYSTEM

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INSTRUCTIONS

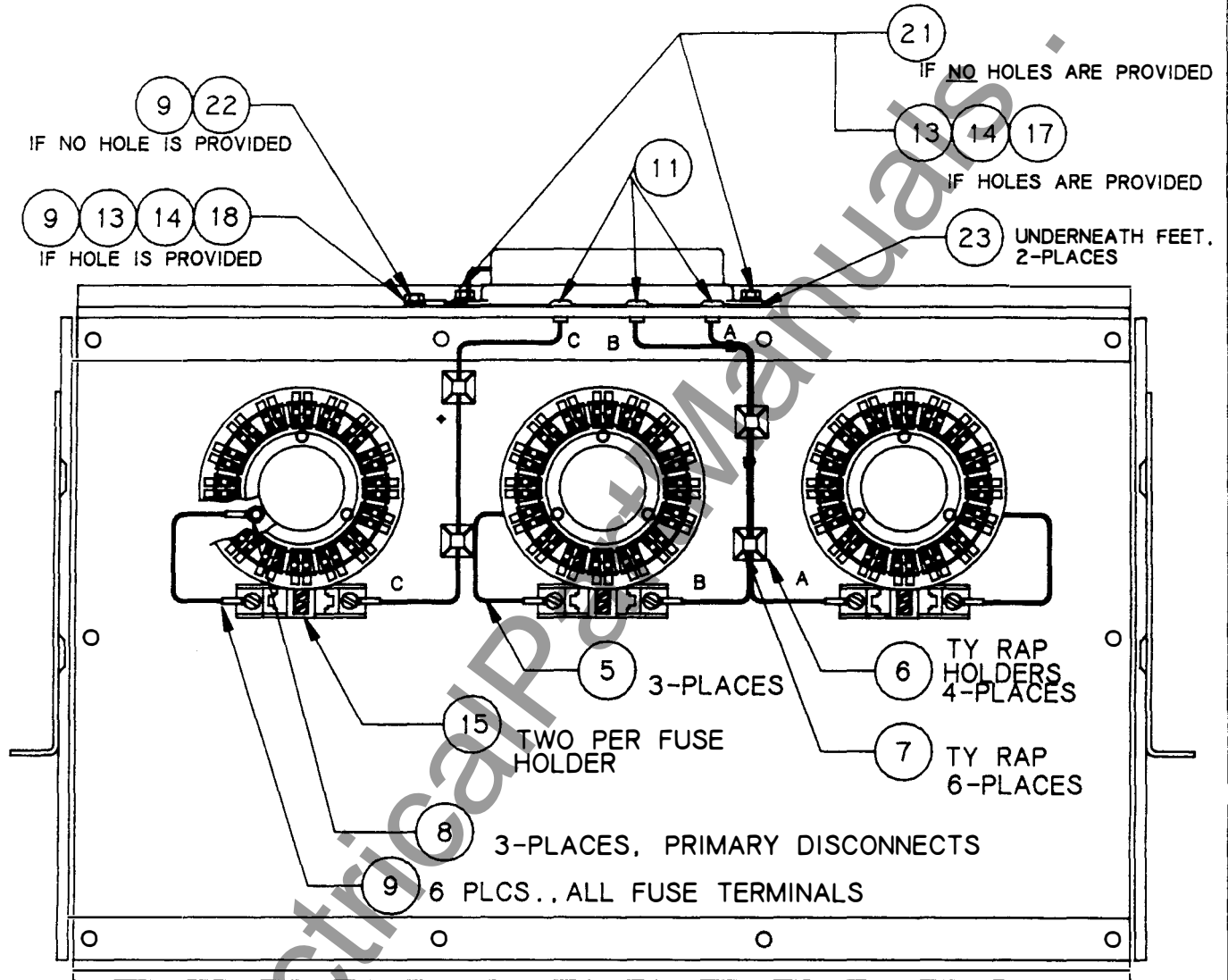
DETAIL 10

PT-MOD & FUSE HOLDER MOUNTING AND WIRING

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**PT-MOD & FUSE HOLDER MOUNTING AND WIRING
ON BRKRS. \geq 3200A OPERATING IN A FOUR (4) WIRE SYSTEM**



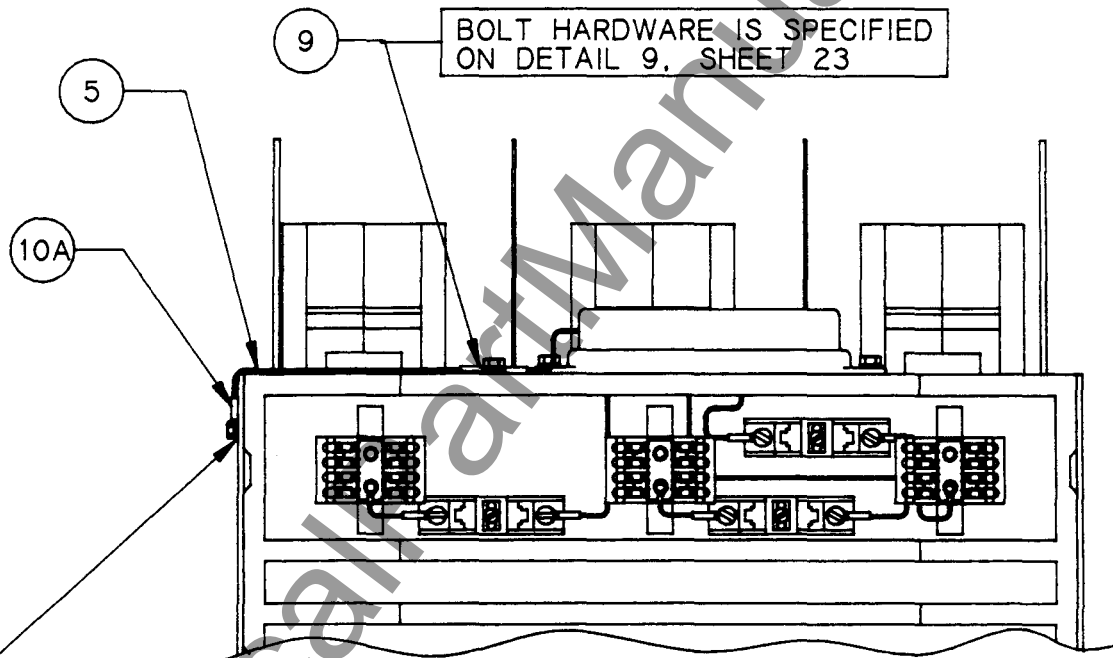
LOWER PRIMARIES NOT SHOWN

REARVIEW OF BKRS. \geq 3200A, 4-WIRE SYSTEM

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NEUTRAL WIRE CONNECTION ON
BRKRS \leq 2000A OPERATING IN A (4)
FOUR WIRE SYSTEM



BOLT HARDWARE IS SPECIFIED
ON DETAIL 9, SHEET 23

THIS BOLT CONNECTS THE BREAKER FRAME PLATE TO THE
MOLDED BACK PANEL. ITS LOCATION IS 3 1/4" FROM THE REAR
EDGE OF THE BREAKER FRAME AND 3/4" DOWN FROM
THE TOP. THE BOLT IS 1/4-20 X 1/2 LG., 5/32 ALLEN HEAD

REAR VIEW OF BKRS \leq 2000A, 4 WIRE SYSTEM

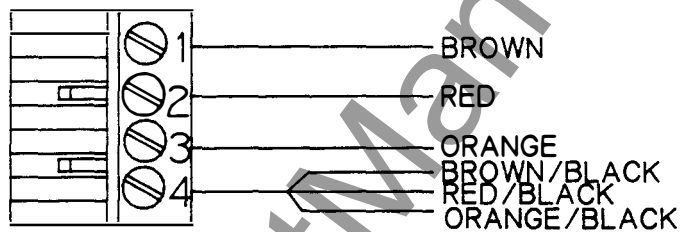
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INSTRUCTIONS

DETAIL 12

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SECONDARY WIRING OF PT-MODULE



NOTES:

1. PIN NO. 1 PLUGS INTO THE TOP OF THE 4 PIN TRIP UNIT CONNECTOR AT THE REAR OF THE TRIP UNIT.
2. DO NOT CHANGE THE WIRING ON THIS PLUG IN CASE OF NEGATIVE POWER READINGS DISPLAYED BY ELECTRONIC DEVICES IN THE SWITCHGEAR. NEGATIVE POWER READINGS CAN BE CORRECTED BY REPROGRAMMING THE TRIP UNIT OF THE BREAKER. SHOULD THERE BE A NEED FOR REPROGRAMMING PLEASE REFER TO SIEMENS TRIP UNIT LITERATURE.

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