INSTRUCTIONS

for Installation, Care and Operation of Circuit Breakers and Accessories

LA75A
LA100A

[illegible]-100A
[illegible] BREAKER
[illegible]-3

These instructions are not intended to cover all details or variations that may be encountered in connection with the installation, operation, and maintenance of this equipment. Should additional information be desired contact the Allen-Bradley Company.

ALLEN-BRADLEY MFG. CO.
BOSTON WORKS · BOSTON · MASS.

ALLIS-CHALMERS MANUFACTURING COMPANY

INDEX TO INSTRUCTION BOOK
COVERING
TYPE LA-75A & LA-100A CIRCUIT BREAKER

ALLIS-CHALMERS MANUFACTURING COMPANY

LIST OF ILLUSTRATIONS
COVERING ALLIS-CHALMERS TYPE LA-75A & LA-100A
LOW VOLTAGE AIR CIRCUIT BREAKER
AND AUXILIARY EQUIPMENT

ALLIS-CHALMERS MANUFACTURING COMPANY

CAUTIONS TO BE OBSERVED IN
THE INSTALLATION AND OPERATION OF
THE LA-75A & LA-100A AIR CIRCUIT BREAKER

1. DO NOT ATTEMPT TO OPERATE BREAKER OR INSERT IN CUBICLE UNTIL ALL PACKING TRACES HAVE BEEN REMOVED.

2. READ INSTRUCTION BOOK BEFORE MAKING ANY CHANGES OR ADJUSTMENTS ON THE BREAKER.

3. DO NOT INTERCHANGE PARTS OF TRIP DEVICES - TO DO SO MAY CHANGE CALIBRATIONS.

4. CHECK CURRENT RATINGS AND SERIAL NUMBERS AGAINST SINGLE LINE DIAGRAM TO ASSURE THAT BREAKERS ARE PROPERLY LOCATED IN SWITCHGEAR AT INSTALLATION.

5. CHECK THE ALIGNMENT OF THE SECONDARY DISCONNECT FINGERS TO INSURE AGAINST MISALIGNMENT DUE TO POSSIBLE DISTORTION OF FINGER DURING SHIPMENT AND HANDLING.

6. DO NOT OPERATE BREAKER ON THE EXTENSION RAILS OF SWITCHGEAR.

7. TO AVOID DAMAGE TO THE RACKING MECHANISM, DO NOT REVOLVE OPERATING CRANK UNLESS THE INTERLOCK LATCH IS RELEASED AND DO NOT OPERATE BEYOND THE LIMITS OF "DISCONNECT" OR "CONNECT" POSITION.

Instructions
For the Installation and Operation
of
Allis-Chalmers Type "LA"
Low Voltage Air Circuit Breakers
and Auxiliary Equipment

Part I
GENERAL INFORMATION

A. INTRODUCTION. The type "LA" air circuit breakers may be used in metal enclosed switchgear, on open type switchboards, or separately mounted in individual housings. All "LA" breakers are completely assembled, tested and calibrated at the factory in a vertical position and must be so installed to operate properly. Customer's primary connections should be adequately braced against the effects of short-circuit currents to prevent overstressing the breaker terminals.

B. WARRANTY. Allis-Chalmers' "LA" air circuit breakers are warranted to be free of defects in material and workmanship for a period of one year after delivery to the original purchaser. This warranty is limited to the furnishing of any part which to our satisfaction has been proven defective. Allis-Chalmers will not in any case assume responsibility for allied equipment of any kind.

C. RECEIVING AND INSPECTION FOR DAMAGE. Immediately upon receipt of this equipment, carefully remove all packing traces and examine parts, checking them against the packing list and noting any damages incurred in transit. If such is disclosed, a damage claim should be filed at once with the transportation company and Allis-Chalmers notified.

D. STORAGE. When breakers are not to be put into immediate use, they should be wrapped or covered to provide protection from plaster, concrete dust and other foreign matter. Breakers should not be exposed to the action of corrosive gases and moisture. In areas of high humidity or temperature fluctuations, space heaters or the equivalent should be provided. Circuit breakers should be handled carefully at all times.

E. CAUTIONS TO BE OBSERVED IN THE INSTALLATION AND OPERATION OF "LA" CIRCUIT BREAKERS.

1. Do not attempt to operate breaker or insert in cubicle until all packing traces have been removed.

2. Read Instruction Book before making any changes or adjustments on the breaker.

3. Do not interchange parts of trip devices - to do so may change calibrations.

4. On manually operated breakers, always operate closing handle quickly and decisively.

5. Check current ratings and serial numbers against single line diagram to assure that breakers are properly located in switchgear at installation.

6. Check the alignment of the secondary disconnect fingers to insure against misalignment due to possible distortion of fingers during shipment and handling.

7. Once the breaker is energized, it should not be touched, except for operating, since most of the component parts are also energized.

PART II-C

OPERATING MECHANISM

A. DESCRIPTION AND FUNCTION. The operating mechanism is the medium used to transmit power from the stored-energy closing springs to the contact structure to close the breaker. The breaker includes as an integral part the means to manually close the breaker for inspection prior to installation and for maintenance inspection. Cubicle mounted breakers of the drawout type are provided with the motivating means to rack the breaker in and out of the cubicle compartment.

A double-toggle, trip-free operating mechanism is used; that is, the breaker contacts are free to open at any time, if required, regardless of the position of the mechanism or the force being applied. For descriptive purposes the operating mechanism can be divided into two groups - the stored-energy mechanism and the closing mechanism:

1. Stored-Energy Mechanism. Refer to Figures 4, 5 and 6. Figure 5 shows the stored-energy springs in the discharged position. On electrically operated breakers, energization of the motor by actuation of the power charging switch (1-7) (1A-7) causes the motor to rotate pinion shaft (9) to drive gear (10). This gear is provided with a driving pin (12) positioned to engage with a corresponding pin (11) on eccentric (13). The eccentric is revolved clockwise about fixed center "A" driving the connecting rod (14) to the right. The motion of the connecting rod to the right compresses the pair of stored-energy springs (16) that function as a unit through links (15) and bar (34). At the instant the springs are fully charged, latch roll (18) affixed to connecting rod (14) engages prop latch (20) thus holding the fully charged springs latched and ready to be discharged to close the breaker either by manual release of the prop latch through mechanical closing button (1-6)(1A-6), or by electrical release through the solenoid release plunger.

   To guard against accidental overloading of the charging system, gear (10) that is driven by the pinion shaft (9) is shaped to disengage from the pinion shaft (see Fig. 2) at the fully charged position of the stored-energy springs. This disengagement is accomplished by the removal of a segment of the teeth from the periphery of the gear. Flexible teeth are provided at the end of the open segment to facilitate re-engagment.

2. Closing Mechanism. Fig. 6 shows the mechanism in the open position with the stored-energy springs charged. The stored-energy closing force is released either manually by depressing mechanical closing button (1-6) (1A-6) or electrically by actuation of the solenoid release plunger. In either case, prop latch (20) is rotated clockwise to release the connecting rod (14). The connecting rod is attached to the closing springs (16) through link (15) and bar (34) and to the bell crank (17) by pin (21). Release of the prop latch permits the closing springs to move the connecting rod clockwise to the left about fixed center "A" and the bell crank clockwise about fixed center "B". Clockwise rotation of the bell crank drives link (22) to rotate closing cam (23) which acts against toggle rolls (24) moving the toggle linkage to the right about releasable center "C" thus closing breaker contacts. When the full

4. Insert manual maintenance closing link (19) with the "U" shaped section over pin (44) in center crank (40). Align the hole in the maintenance closing link with the holes in arm (42) and insert the pin that is attached to the maintenance closing link.

5. As the closing mechanism is now linked to screw (43), clockwise rotation of the operating crank will slowly move the main contacts to the contact touch position.

6. Reversal of operating crank rotation to counterclockwise will slowly return the contacts to the open position.

7. Replace front sheet-metal cover after removing maintenance closing link.

During maintenance closing operation, observe that the contacts move freely without interference or rubbing between movable arcing contacts (3-1)(3A-1) and parts of the arc chutes (1-13)(1A-13).

C. RACKING MECHANISM AND DRAWOUT INTERLOCK. Cubicle mounted breakers of the drawout type include as integral parts the motivating means to rack the breaker in and out of the cubicle compartment, the drawout position indicator and the drawout trip interlock.

Refer to Figures 1, 1A and 2. Manual trip button (2-29)(1-1)(1A-1), which is an essential part of the drawout and interlock linkage, performs a dual function:

1. Within the limits of movement in the large slot, actuation of the button trips the breaker by means of engagement of trip rod (2-43) with angle (2-45). This rotates trip shaft (2-44) counterclockwise and releases trip latch (2-46), thus tripping the breaker.

2. By raising knob (1-2)(1A-2), the stop is removed from the large slot in trip button (2-29)(1-1)1A-1) and the button may then be pushed in to the limit of its travel. (Lowering the knob will place the stop in the narrow slot to hold the button in this position.) Through interlock crank (2-42), link (2-37) and eye end (2-38), the interlock latch (2-39) is raised above the fixed stop on the floor of the cubicle compartment. The breaker is then free to be racked in or out of the cubicle. The necessary actuation of the manual trip button to release the interlock latch prevents possible movement of a closed breaker out of the "CONNECT," "TEST" or "DISCONNECT" position.

With the breaker in position on the rail extensions, the following sequence should be used to rack the breaker into the fully connected position:

1. Raise the drawout release stop knob (1-2)(1A-2), push in the manual trip button (2-29)(1-1)(1A-1) its full travel, and lock the trip button in this position by resetting the drawout release stop in the last slot in the trip button. With the trip button in this position, interlock latch (2-39) is raised permitting movement of the interlock and breaker past the fixed stop on the floor of the cubicle compartment.

2. Move slide near the top of the sheet-metal cover to the right to uncover the square end of screw (2-19).

3. Closing the control switch (CSC) energizes the spring release coil discharging the energy in the springs. As the breaker closes, the b and 88a contacts open to cut off power to the spring release coil. The Y coil is energized simultaneously with the SRC, and causes the Y1 contact to open the circuit to the motor. Since the Y relay will remain energized as long as the control switch is held closed, it eliminates "pumping" or repeated attempts to charge the stored-energy springs.

Although variations may be necessary or other control elements added to suit a specific appl cation, the basic arrangement will be as shown in Fig. 9.

E. MAINTENANCE AND ADJUSTMENT. A semi-annual inspection and servicing is usually sufficient; however, in cases where unfavorable atmospheric conditions exist, more frequent inspections are recommended. In any case, the total number of breaker operations between servicing should not exceed 250.

The following items are listed for convenience in maintaining the operating mechanism in good condition:

1. Trip Latch Adjustment. The trip latch (2-46) should have an engagement of 3/64" to 1/16". The measurement is from the flat face of the trip shaft (2-44) to the bottom lip of the trip latch. Adjustment is obtained by positioning manual trip rod (2-29)(2-43) against angle (2-45) on trip shaft. This measurement may be checked by chalking the face of the latch.

2. Toggle Latch Adjustment. The toggle latch stop clearance should measure .010" to .015". The measurement is the clearance between the adjusting screw (2-59) and the extension on toggle latch (2-47) when the breaker mechanism is reset and the toggle latch is biased against the trip latch roll. Measurement is made with feeler gauge through hole in right-hand side plate.

3. Prop Latch Adjustment. The prop latch engagement should measure 3/16" to 1/4". The measurement is from the top edge of the latch (2-30) to the mean line of contact of the eccentric pin (2-35). Adjustment is obtained by positioning spacers on the end of solenoid release (1-15) (1A-15) plunger.

4. Limit Switch. This switch is adjusted by turning the adjusting screw (10-3) so that the "bb" contacts of the limit switch (10-1) open just prior to the spring charge latch position.

5. Motor Drive Unit. The motor drive unit (2-7) is mounted on the operating mechanism frame and held in position by four mounting screws (2-4). Should realignment of the unit be necessary, add or remove spacers (2-6) to provide proper alignment of the motor shaft with the pinion (2-9) vertically. The motor shaft should also be positioned as closely as possible to the center of the pinion horizontally.

PART III-C

CONTACT STRUCTURE

A. DESCRIPTION AND FUNCTION. Refer to Figures 3 and 3A. The contact structure consists of main current carrying contacts and arcing contacts arranged so that contact make and break is by means of the arcing contacts. The main contacts are not subjected to arcing. Arcing contact surfaces are clad with an arcing alloy which greatly reduces mechanical wear and arc erosion. A positive wiping action of the arcing contacts prevents welding and sticking when interrupting high currents.

Both the stationary and the movable arcing contacts have arc runners which lead the arc away from the contact surfaces. This prolongs contact life as well as aiding arc interruption.

The main current carrying contacts are silver plated and have a positive wiping action. This insures high conductivity and maintains the current carrying areas clean, smooth and free from pitting or hammering. When the main contacts make, the first point of contact is at the lower end of contact finger (2). Further motion causes this contact finger to rotate in its socket, causing the contact point to move up toward the "knee" of the contact and separating the initial contact point.

When the breaker is called upon to interrupt a current, the main contacts (22), (20) and (2) separate, transferring the current to the arcing contacts (1) and (4) without arcing. When the arcing contacts part, an arc is drawn between the contact surfaces. Due to the inherent magnetic and thermal effects of the arc, it will rapidly move upwards along the arc runner and into the arc chute (1-13) (1A-13) where it is extinguished.

B. MAINTENANCE, ADJUSTMENT AND REPLACEMENT. A semi-annual inspection and servicing is usually sufficient; however, in cases where unfavorable atmospheric conditions exist, more frequent inspections are recommended. In any case, the total number of breaker operations between servicing should not exceed 250.

The following items are listed for convenience in maintaining the contact structure in good condition:

1. General. Check main contacts for cleanliness. (They should not be dressed.) Check arcing contacts for wear and arc erosion. Contacts should be replaced if arcing alloy shows indications of wearing through before the next inspection. With arcing contacts (1) and (4) just touching, if a 1/8" diameter rod cannot be passed between stationary contact fingers (2) and movable main contact (20) (22), arcing contacts should be replaced.

2. Contact Adjustment. The arcing contacts are connected to the main contacts and as such cannot be adjusted independently of the main contacts. The main contacts (20)(22) are factory adjusted and should not require any field adjustments unless parts have been disassembled. Adjustment is made by positioning connecting rod (2-48) on rod end (2-58). The main contacts are in proper adjustment when there is a clearance of 1/32" to

PART IV

SERIES OVERCURRENT PROTECTIVE DEVICES

A. DESCRIPTION AND FUNCTION. Series overcurrent trip devices function to trip the breaker whenever the current exceeds a predetermined value. The device includes a series coil, magnetic circuit, and a sealed oil time-delay device arranged per Figure 12.

The available trip elements are as follows:

Long-Time Delay Element: -for use with the instantaneous trip and/or the short-time delay element. The pick-up setting is adjustable in the field to 80, 100, 120, 140 or 160% of the continuous current rating of the trip coil. Settings in excess of 100% do not permit the continuous current rating to exceed 100% of the series coil rating.

Short-Time Delay Element: -for use with the long-time delay element on selective trip systems. The pick-up setting is adjustable in the field to 500, 750, or 1000% of the continuous current rating of the trip coil. On special applications, it is possible to add the instantaneous element to this combination.

Instantaneous Trip Element: -for use as noted above or as a single element. The pick-up is adjustable in the field between 500 and 1500% of the continuous current rating of the coil.

The devices are factory adjusted and should not be disturbed in the field without proper equipment and knowledge of the device. The time-delay devices are not interchangeable and are marked for identification as follows: The long-time delay device cover is red, while the short-time delay device cover is green. The time-delay band adjustments are made by locating plunger (12-1) im the proper hole on the trip element extensions. To decrease time band move plunger location closer to shaft (12-4) and to increase move away from shaft. The maximum, intermediate, and minimum time bands are marked by white bands on the trip element. All of the band locations are progressive, and intermediate settings may be made for finer selectivity.

The pick-up calibration is selected by rotating knob (12-2) which moves the calibration label (12-3) to the required setting.

The operation of the long-time delay element (12-15) is as follows: When the magnetic pull on the armature (12-15) increases due to an overcurrent condition in the series coil (12-7), the armature (12-15) will pick up and rotate about shaft (12-4). This magnetic attraction must overcome the tension in the pickup spring (12-20) and also displace the silicone oil in time-delay device (12-14) from the lower chamber to the upper chamber through the controlled metering element (12-12). As the armature closes the gap to the core (12-8), it engages trip block (2-44) and trips the breaker. When the breaker has tripped, the armature will reset due to tension in the pickup spring. The short-time delay element functions in the same manner, with the major difference being the controlled metering element.

B. INSPECTION, MAINTENANCE & REPLACEMENT. The series trip device should be inspected prior to being put in service to see that the pick-up calibration and

ACCESSORY ATTACHMENTS (STANDARD)

A. SHUNT TRIP ATTACHMENT. Each electrically operated breaker is equipped with a shunt trip attachment, Fig. 11, for remote control. Since the shunt trip coil is designed for a momentary duty cycle, an "a" auxiliary contact switch is used to interrupt its circuit immediately after the breaker is tripped. Energization of the coil (7) causes armature (2) to pick up and rotate trip shaft (8) thereby tripping the breaker. The extension spring (1) is used to return the armature to a neutral position after the breaker trips. In conjunction with the shunt trip, a 3-padlock device is provided for locking the breaker in the tripped position. See Fig. 1 and 1A. If adjustment of the shunt trip is necessary, make the following adjustments with the mechanism and trip shaft in the reset position:

1. Position screw (4) to provide 1/16" ± 1/64" clearance between washer and angle, and 1/4" ± 1/64" clearance between tubing and angle.

B. AUXILIARY SWITCH ATTACHMENT. The auxiliary switch, Fig. 7, is of the rotary type and functions by direct connection to the breaker mechanism. Electrically operated breakers are provided with two "a" and two "b" contacts in this switch. ("a" switches are closed when the breaker contacts are closed, and "b" switches are closed when the breaker contacts are open.) The auxiliary switch contacts are factory set for "a" and "b" position, but each rotor may be adjusted individually in steps of 15 degrees merely by pressing the contact to one side against the spring and rotating it with its insulated shell until it snaps into the desired position on the retainer.

ACCESSORY ATTACHMENTS (SPECIAL)

A. BELL ALARM SWITCH ATTACHMENT

Manual Reset: The bell alarm switch attachment, Fig. 14, functions to close an alarm circuit upon automatic overcurrent tripping of the breaker. The switch, which is a single-pole, double-throw type, is actuated by the counterclockwise rotation of trip block (6). This trip block is mounted on the overcurrent trip shaft which is rotated by the armatures of the trip device coming in contact with any one of the individual phase trip blocks. As the trip block (6) rotates, it comes in contact with adjusting screw (10) of the bell alarm mechanism. This in turn moves guide (1) to the forward position permitting the roller of switch (7) to seat in the groove of guide (1) opening one set of contacts and closing the other set.

As soon as the breaker has been tripped open, the trip shaft will return to its normal position. However, the alarm contacts will remain in this new position until the switch is reset by manual actuation of reset button (3).

Electrical Reset: The operational function of the bell alarm switch attachment is exactly the same as outlined in the manual reset. However, the switch is reset by electrical operations of solenoid (8).

PART V

THERMAL OVERCURRENT PROTECTIVE DEVICE

A. DESCRIPTION AND FUNCTION. Thermal magnetic trip devices function to trip the breaker whenever the current exceeds a predetermined value. This device includes a series coil, magnetic circuit, bimetallic element, heater coil, and a secondary coil arranged per Figure 13.

These devices are factory adjusted and should not be disturbed in the field without proper equipment and knowledge of the device. The pickup setting is adjustable in the field to 80, 100, or 120% of the continuous current rating. This selection is made by rotating knob (13-6) to the required setting. Settings in excess of 100% do not permit the continuous current rating to exceed 100% of the series coil rating.

Because of the inherent time delay of this device it is equipped with instantaneous trip armature (13-21), to provide high-overload protection, which is factory set between 800 to 1200% of the continuous current rating of the coil. This instantaneous element requires calibration to change the pick-up value. To adjust, loosen screw (13-22) and increase or decrease tension in pickup spring (13-20) by rotating bracket (13-23) about locking screw (13-17).

The thermal magnetic trip armature (13-19) functions to trip the breaker in the following manner: When an overcurrent exists in the series coil (13-12), it causes a similar overcurrent in the secondary coil (13-9). This overcurrent generates heat to bimetallic element (13-3) by means of heater coil (13-2) which surrounds this element. The heat generated causes the free end of the bimetallic element (13-3) to rotate along with cam (13-5). The rotation of this cam releases the thermal trip armature (13-19) which was restrained by roller (13-7) working against this cam. Upon being released, the thermal armature rotates on shaft (13-10) so as to close the air gap through which it is electromagnetically attracted to the core assembly (13-13). As the thermal armature (13-19) closes this gap, it picks up and engages the trip block (2-44) to trip the breaker. The breaker having tripped, the thermal armature is returned to its latched position by return spring (13-18). A short time interval may be required to completely reset cam (13-5) after trip cycle is completed to permit cooling of bimetallic element.

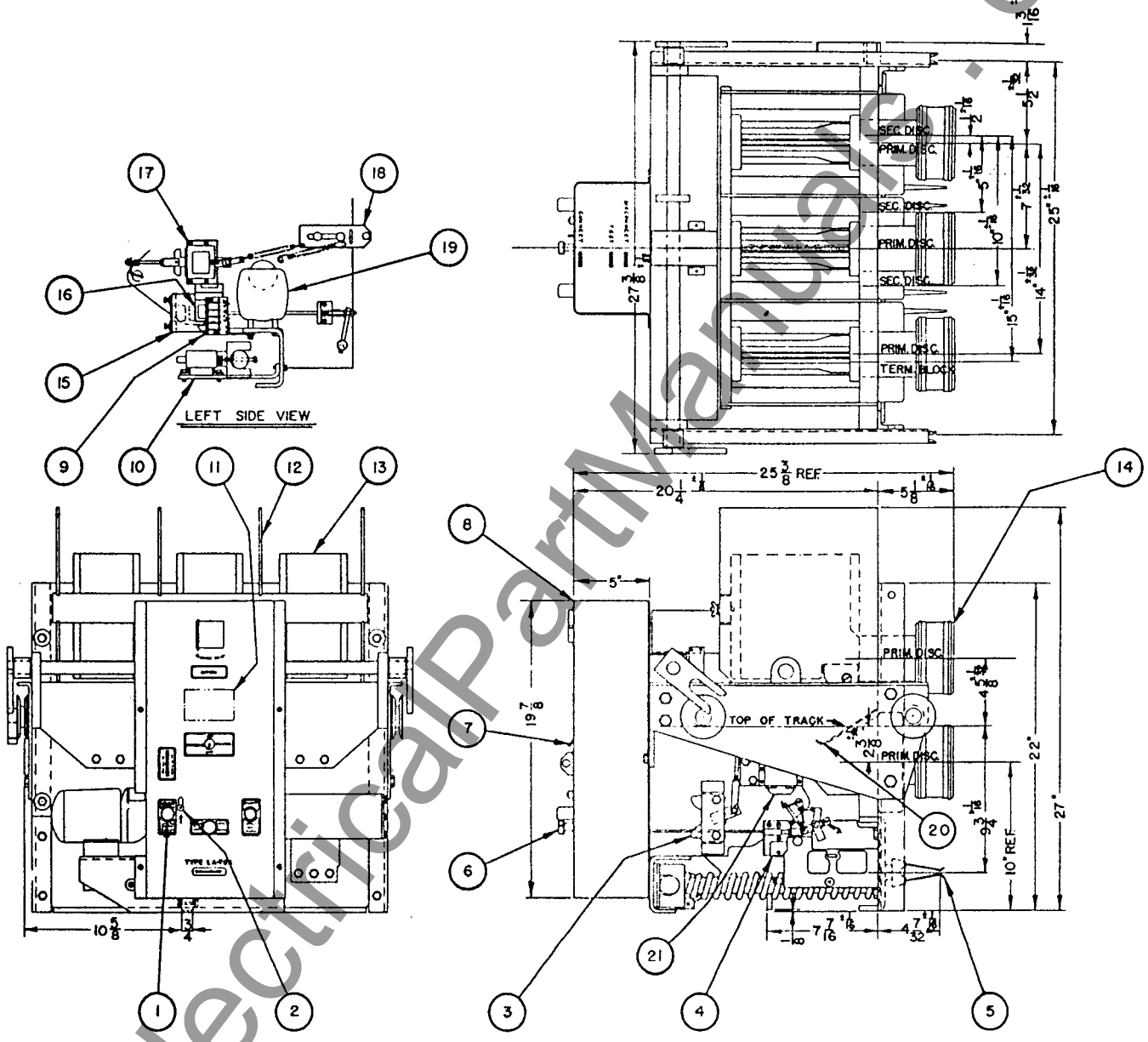
B. INSPECTION, MAINTENANCE AND REPLACEMENT. The thermal trip device should be inspected prior to being put in service to insure that the pickup calibration is in accordance with the application requirements. The device leaves the factory with the following setting unless otherwise specified in the purchase order:

(a) Thermal magnetic trip element set at 100% pickup
(b) Instantaneous trip element set at 1200% pickup

The following procedure for removing the thermal trip device and changing coils on "LA" circuit breakers up through 600 amperes should be used:

1. From the rear of the breaker, remove screws (2-35) which hold one side of series coil to connector (2-33).

2. Remove screws (2-32) and pull connector (2-33) through rear window of molded base.



1. MANUAL TRIP BUTTON
2. INTERLOCK BUTTON
3. AUXILIARY SWITCH
4. BELL ALARM (ATTACHMENT)
5. SECONDARY DISCONNECTS
6. MECHANICAL CLOSING BUTTON
7. POWER CHARGING SWITCH
8. COVER
9. TERMINAL BLOCK
10. LIMIT SWITCH
11. BREAKER NAMEPLATE
12. PHASE BARRIER
13. ARC CHUTE
14. PRIMARY DISCONNECTS
15. SOLENOID RELEASE
16. "Y" RELAY
17. SHUNT TRIP
18. TRIP LOCKOUT
19. STORED ENERGY MOTOR
20. GROUNDING FINGER
21. UNDERVOLTAGE (ATTACHMENT)

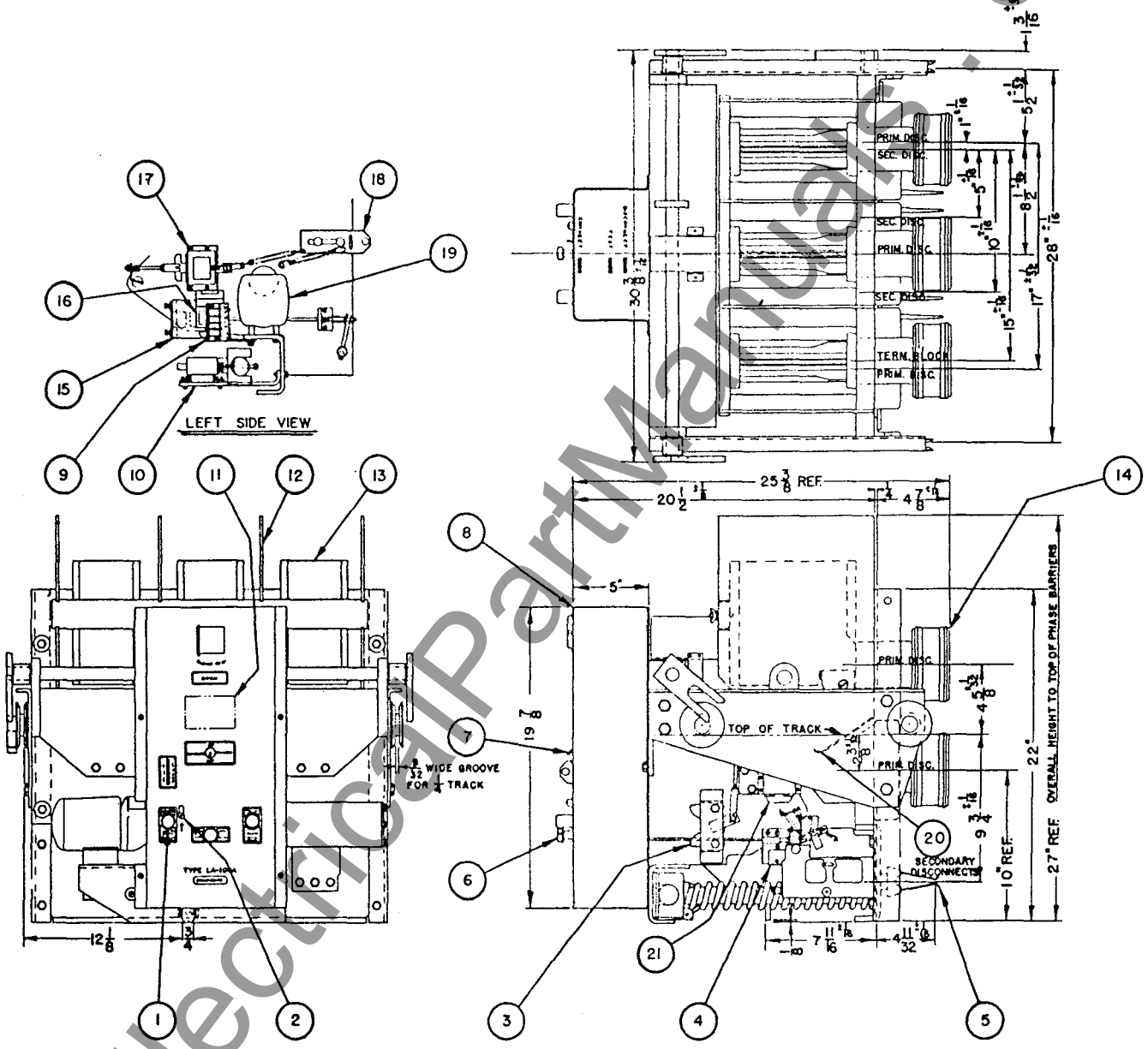
FIG. 1

TYPICAL LA-75 A BREAKER OUTLINE

JULY 12, 1960

71-440-103

ALLIS-CHALMERS MANUFACTURING COMPANY



1. MANUAL TRIP BUTTON
2. INTERLOCK BUTTON
3. AUXILIARY SWITCH
4. BELL ALARM (ATTACHMENT)
5. SECONDARY DISCONNECTS
6. MECHANICAL CLOSING BUTTON
7. POWER CHARGING SWITCH
8. COVER
9. TERMINAL BLOCK
10. LIMIT SWITCH
11. BREAKER NAMEPLATE
12. PHASE BARRIER
13. ARC CHUTE
14. PRIMARY DISCONNECTS
15. SOLENOID RELEASE
16. "Y" RELAY
17. SHUNT TRIP
18. TRIP LOCKOUT
19. STORED ENERGY MOTOR
20. GROUNDING FINGER
21. UNDERVOLTAGE (ATTACHMENT)

FIG. 1A

TYPICAL LA-100 A BREAKER OUTLINE

JULY 11, 1960

71-440-102

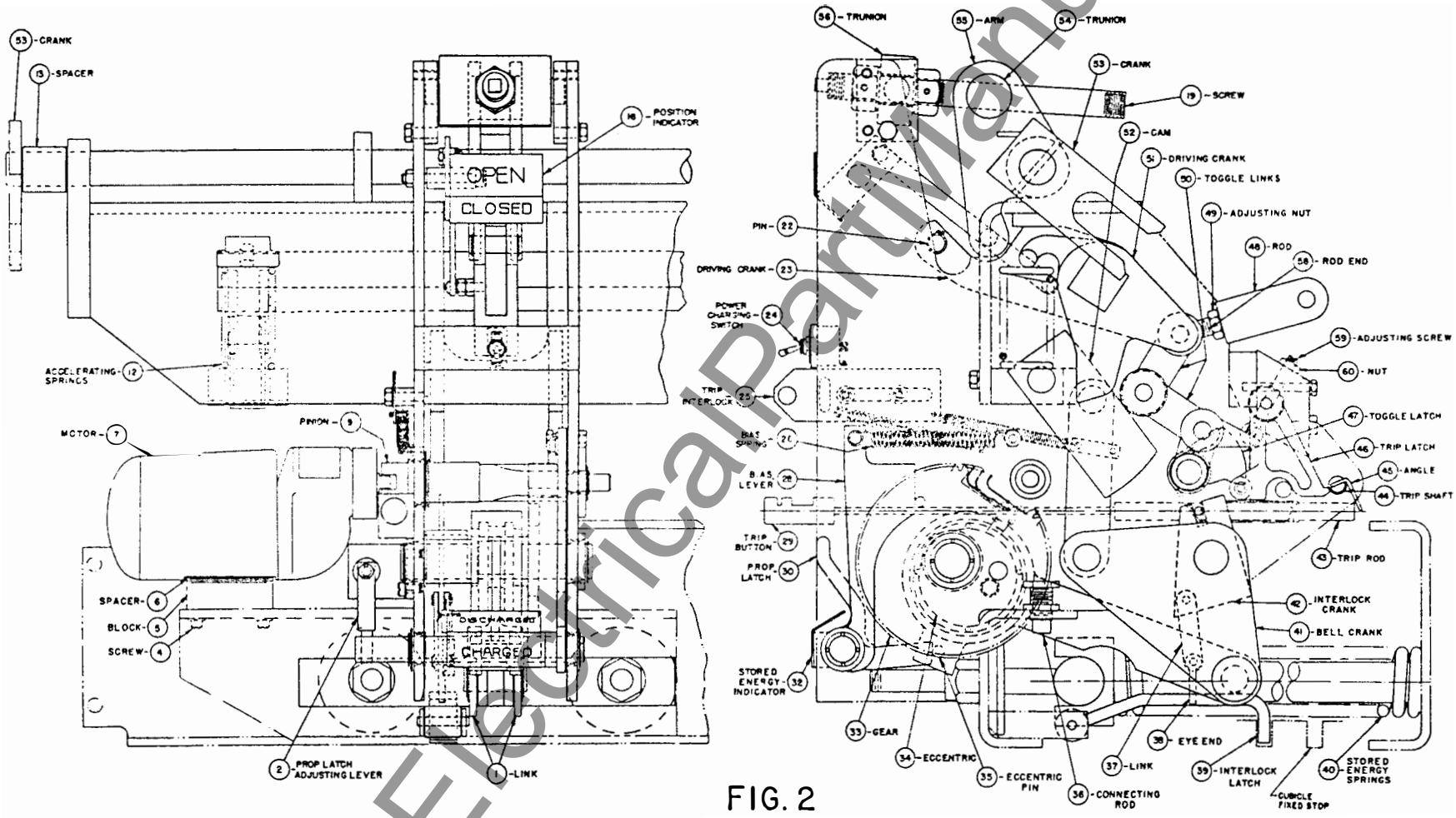
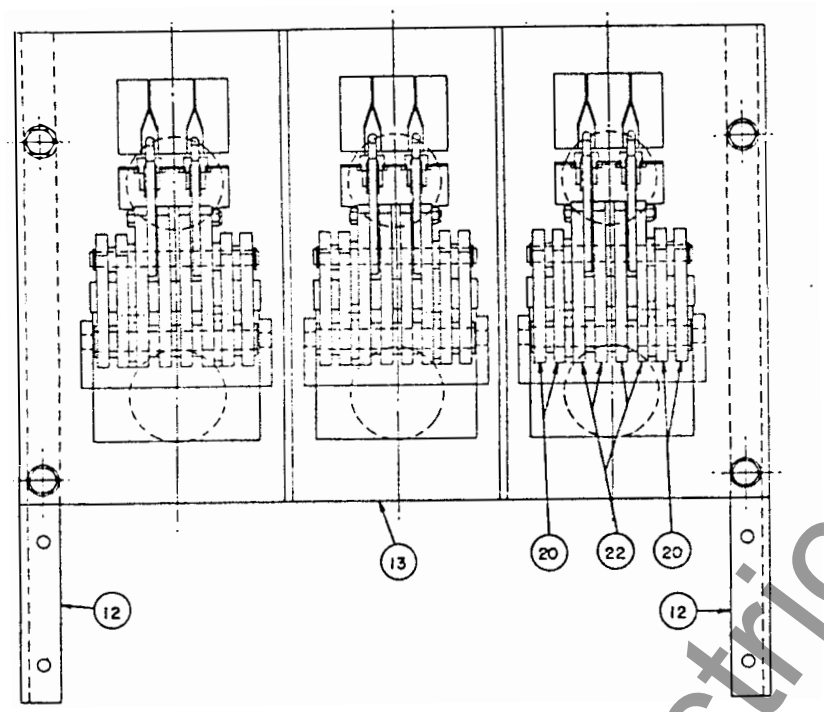


FIG. 2

TYPICAL OPERATING MECHANISM

JULY 27, 1960

71-540-113



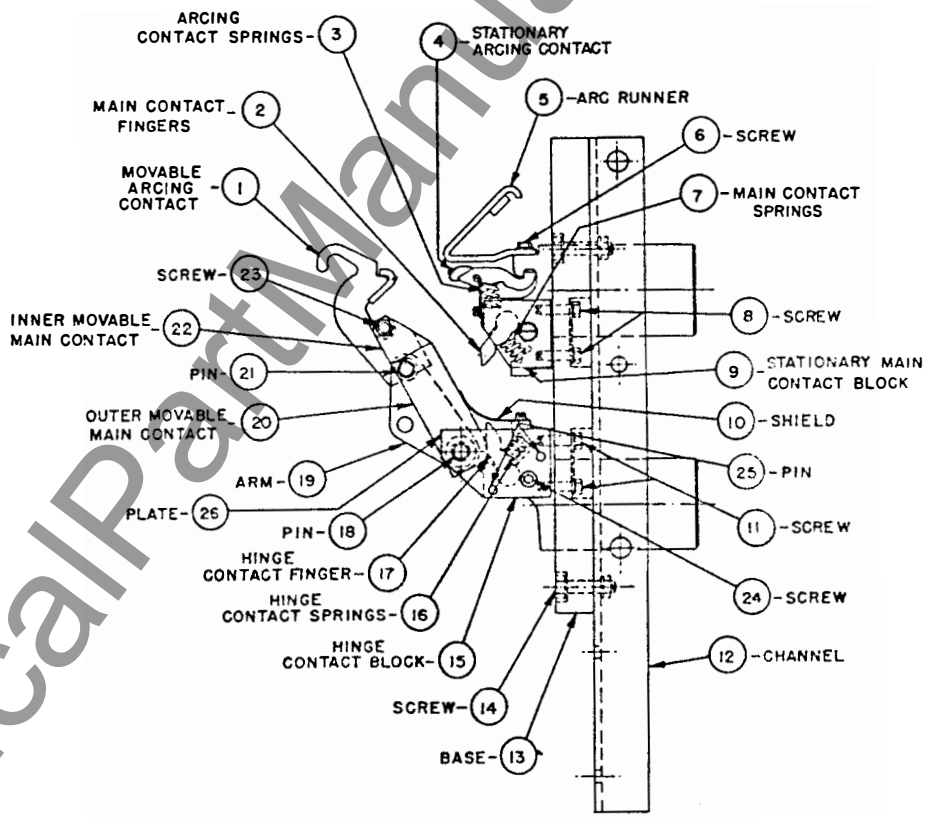


FIG. 3

LA-75A 3000 AMPERE BREAKER PANEL ASSEMBLY

SEPT. 17, 1958

71-440-088

ALLIS-CHALMERS MANUFACTURING COMPANY

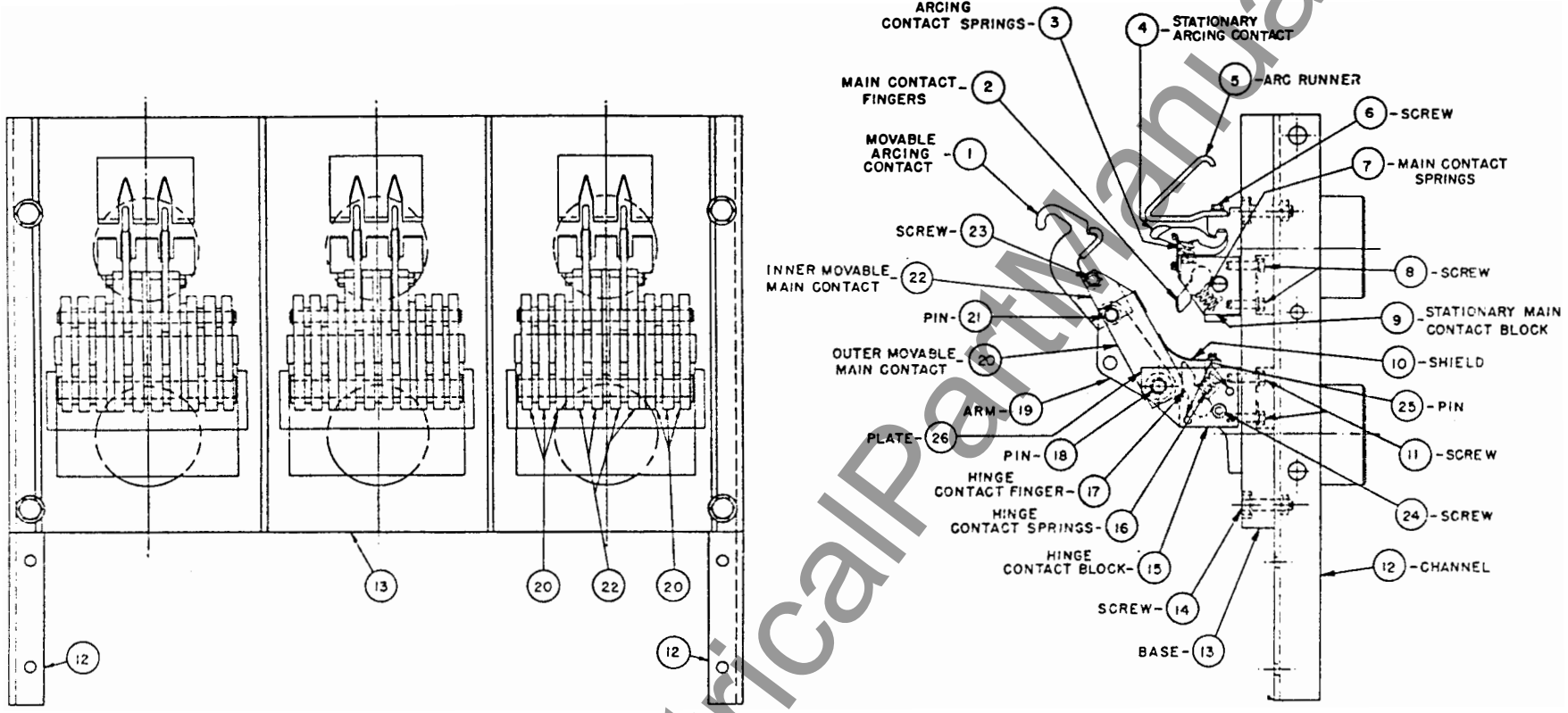


FIG. 3A

LA-100A 4000 AMPERE BREAKER PANEL ASSEMBLY

JULY 27, 1960

71-440-104

ALLIS-CHALMERS MANUFACTURING COMPANY

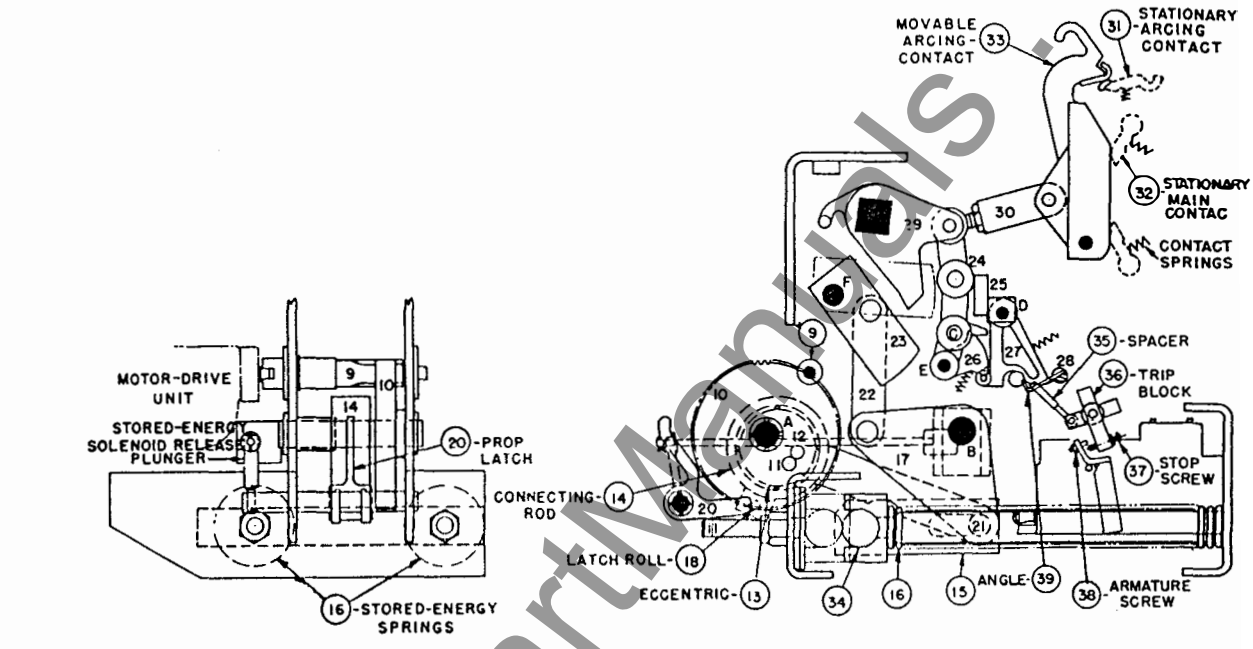


FIG. 4
CLOSED POSITION

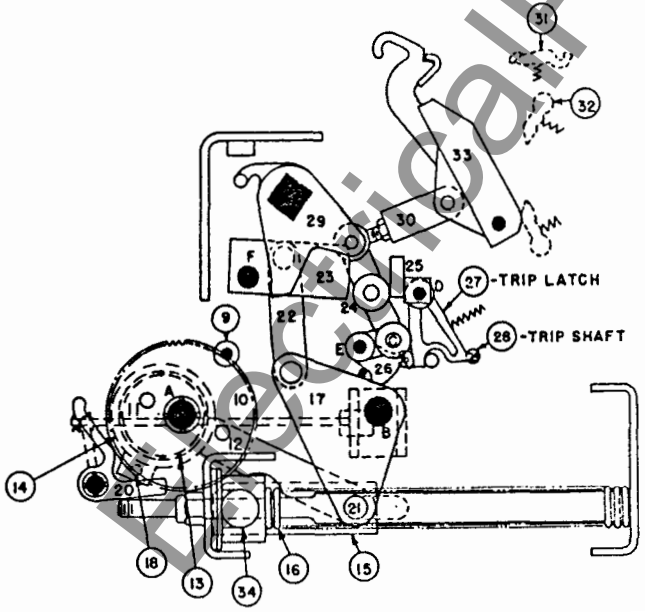


FIG. 5
TRIP-FREE POSITION

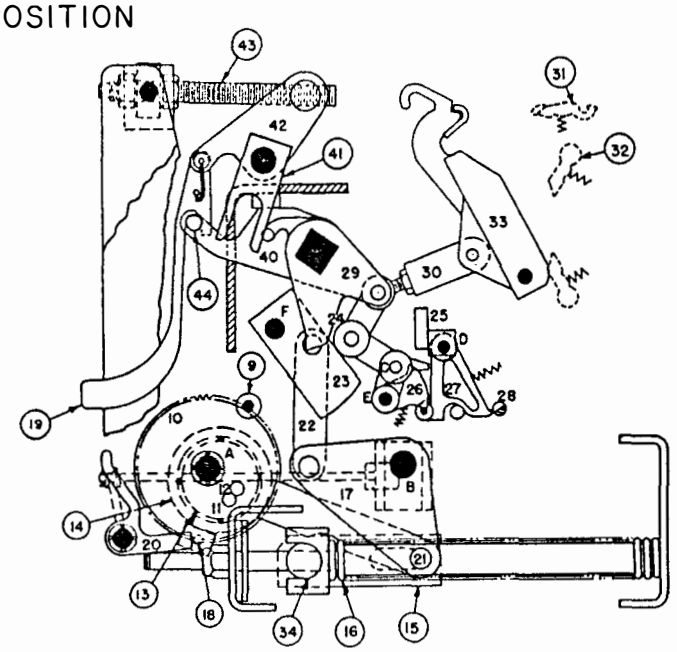


FIG. 6
OPEN POSITION

TYPE "LA" OPERATING MECHANISM

JULY 26, 1960

71-440-098

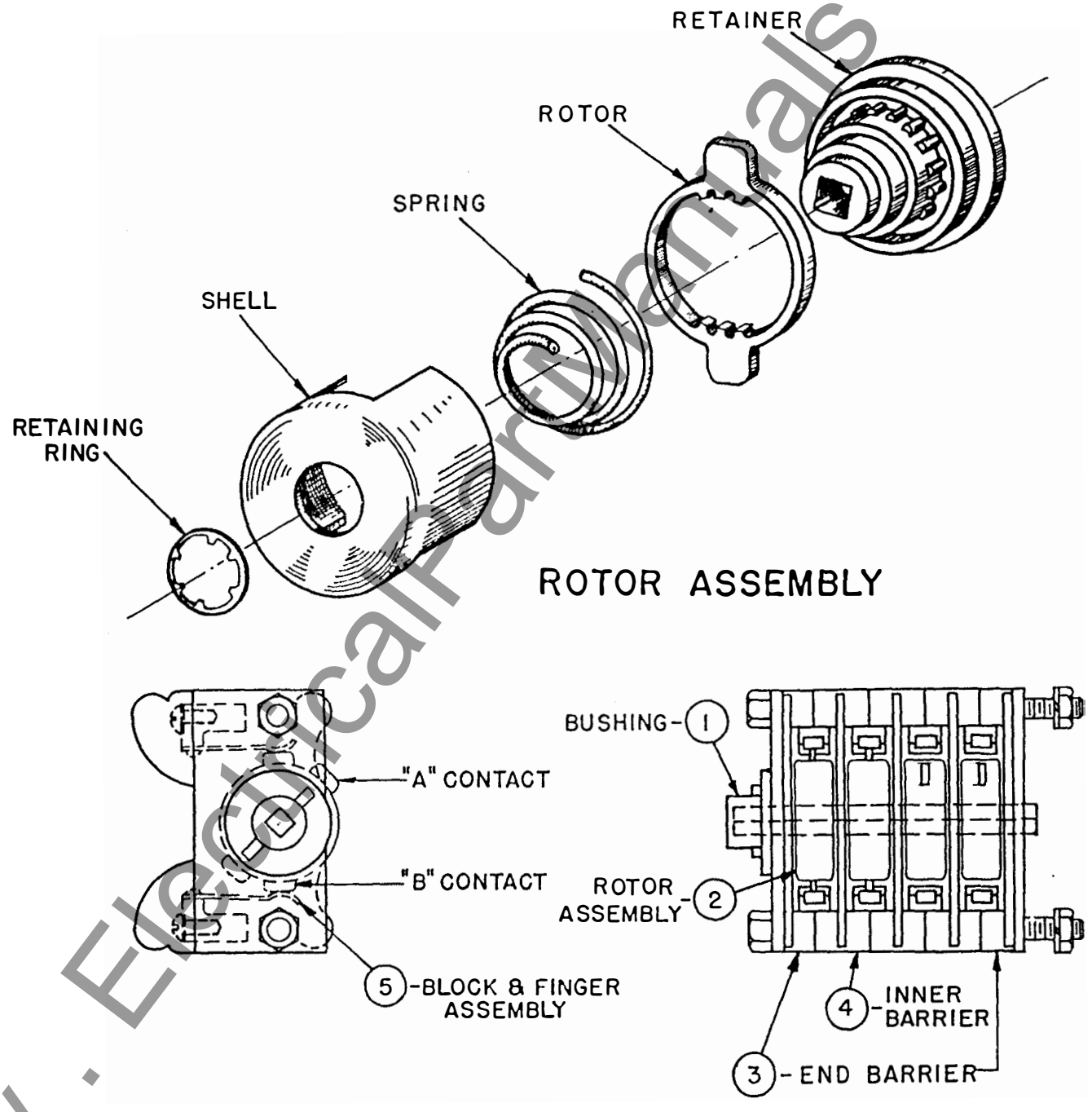


FIG. 7

TYPICAL AUXILIARY SWITCH

AUG. 29, 1958 71-340-194

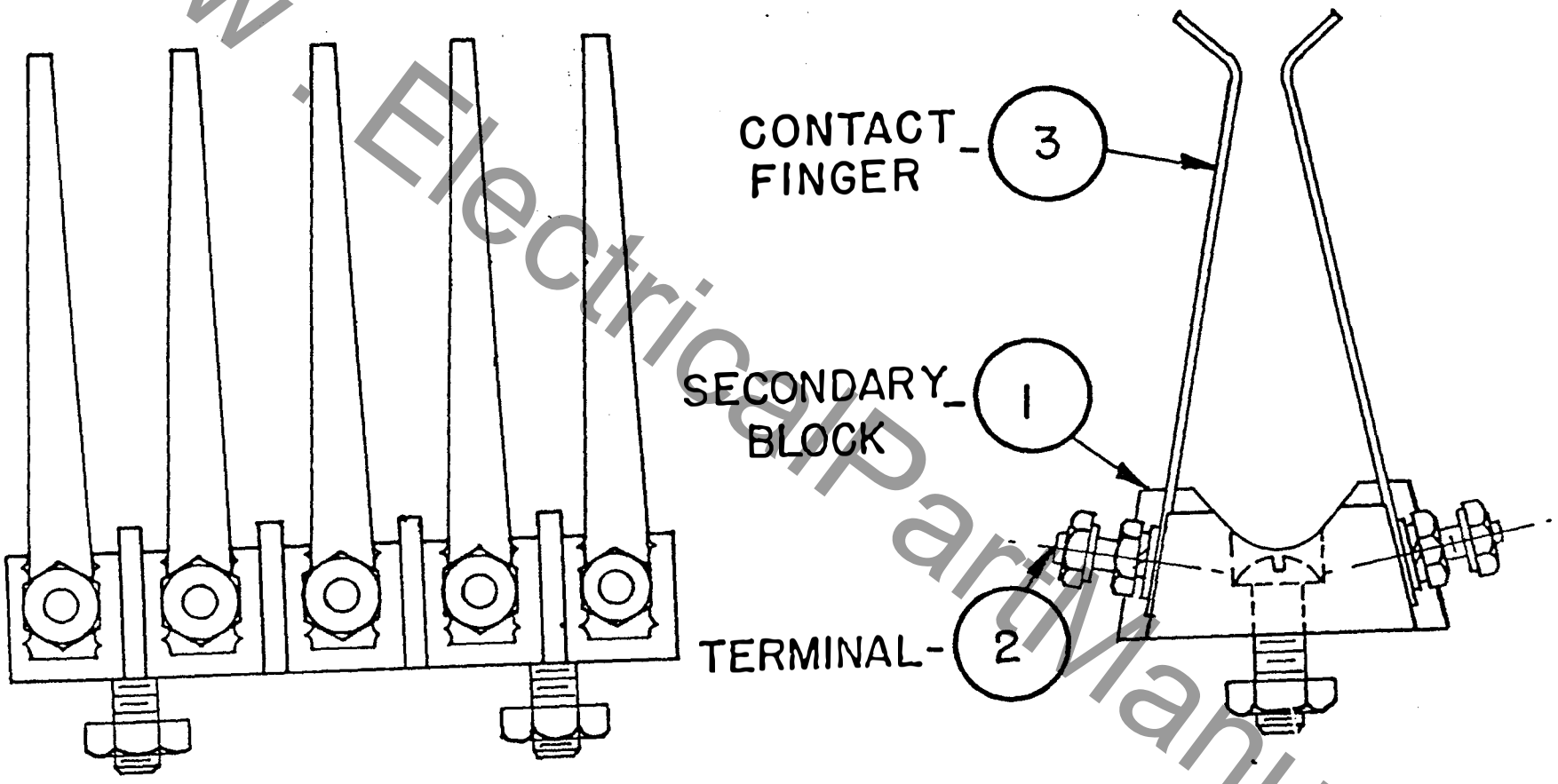


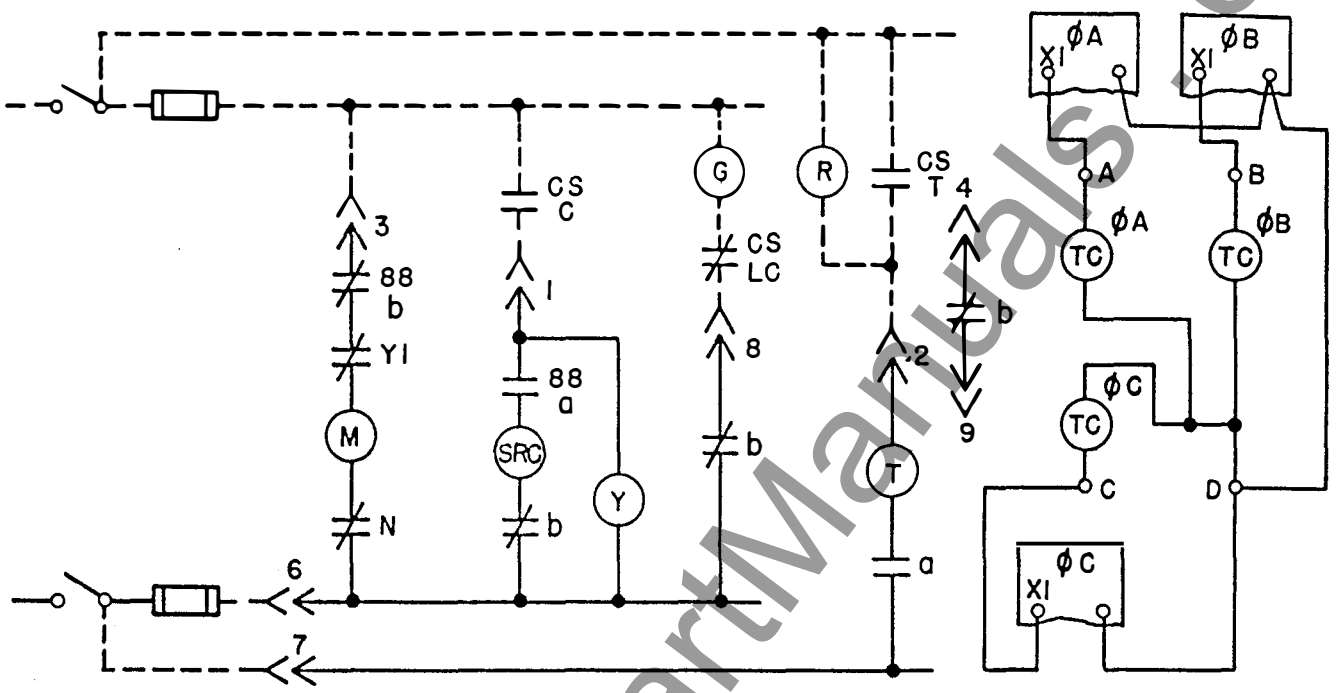
FIG. 8

TYPICAL SECONDARY DISCONNECT ASSEMBLY

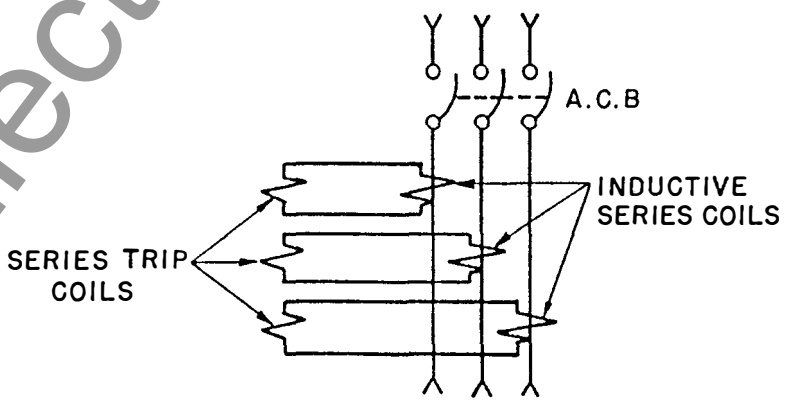
JULY 31, 1958

71-240-366

ALLIS-CHALMERS MANUFACTURING COMPANY



TYPICAL WIRING DIAGRAM
FOR LA-75A BREAKERS
FIG. 9



APPLICATION OF SERIES TRIP COILS
FOR LA-75A BREAKERS
FIG. 9A

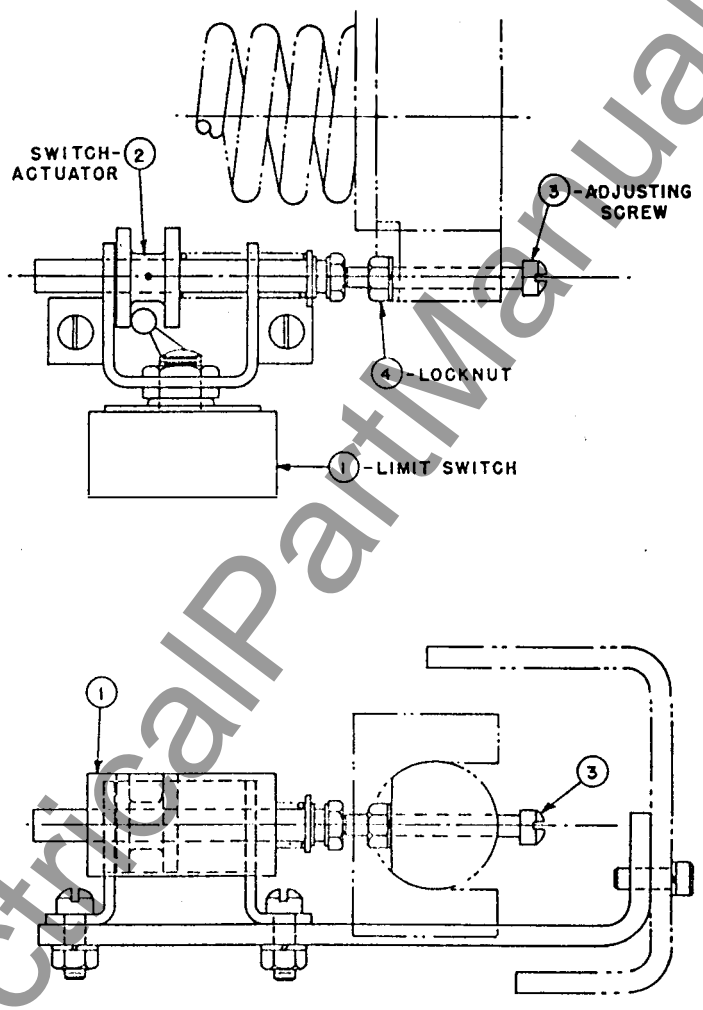


FIG. 10
TYPICAL LIMIT SWITCH
CLOSED POSITION
DEC. 10, 1958 71-240-447

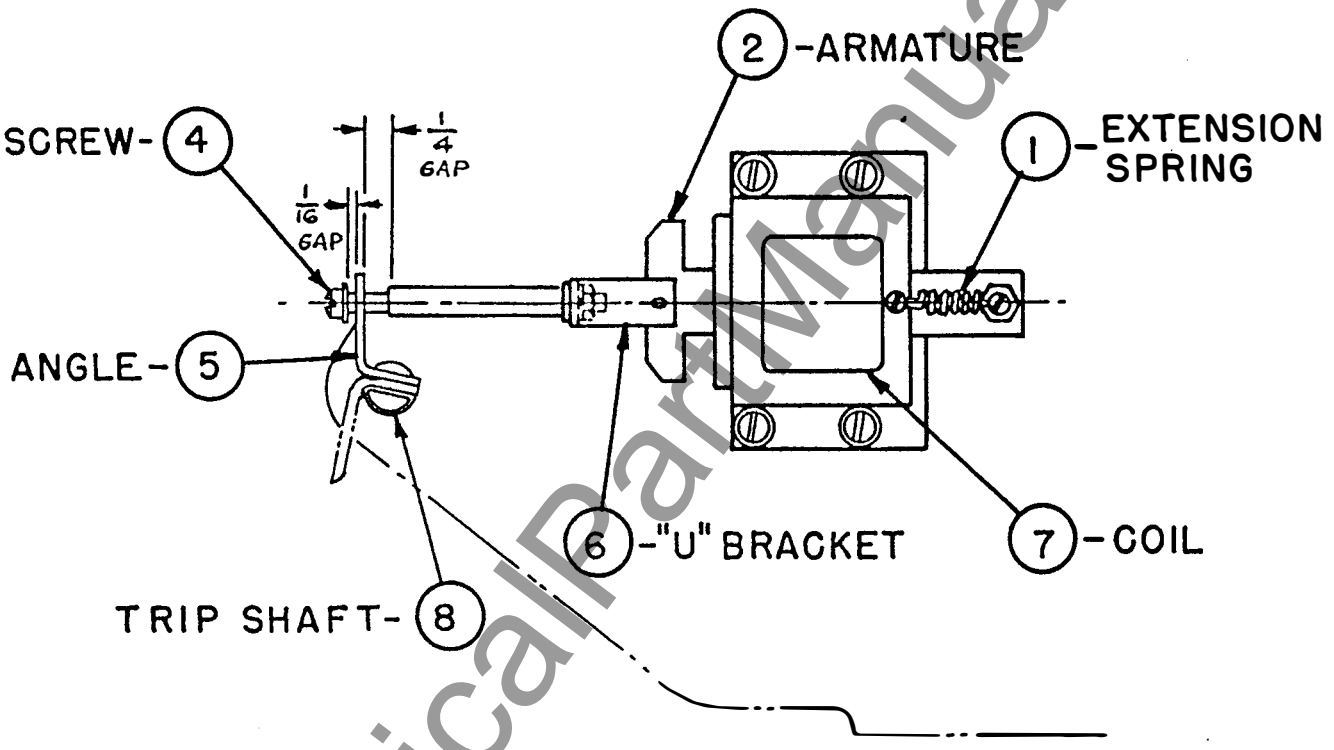


FIG. 11

TYPICAL
SHUNT TRIP DEVICE

DEC. 10, 1958 71-141-314

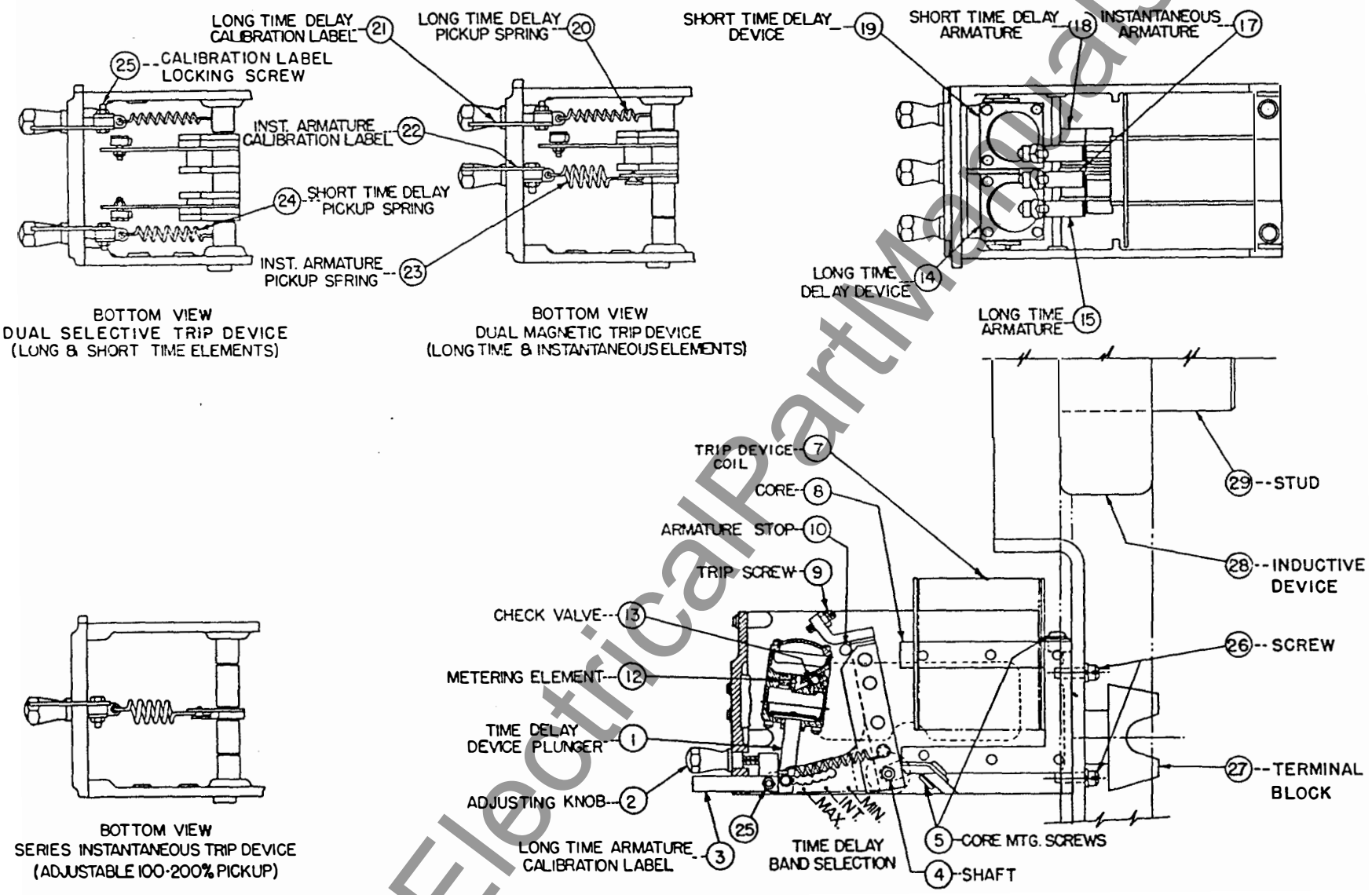
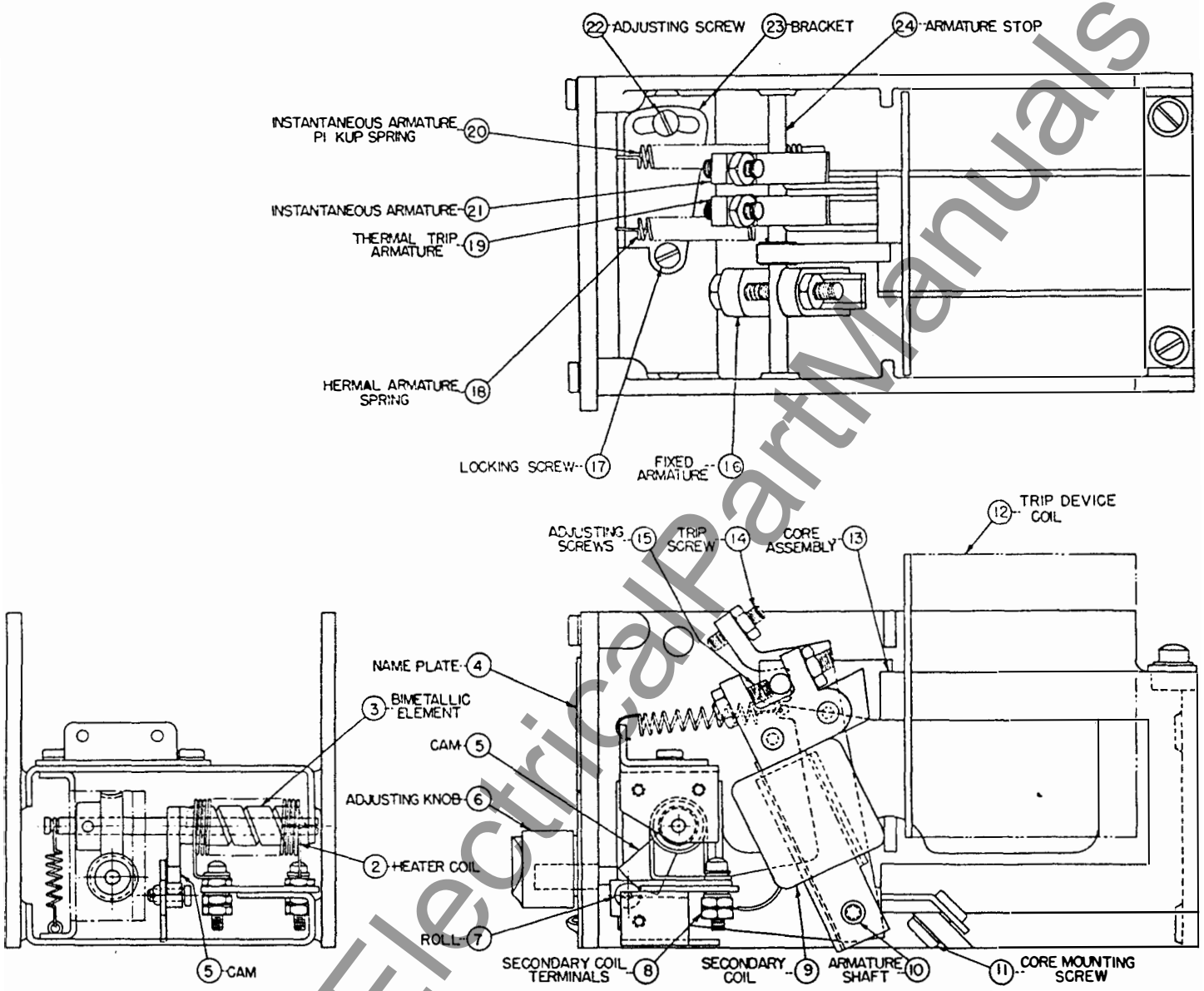


FIG. 12
SERIES OVERCURRENT TRIP DEVICE "LA" TYPE BREAKERS

DEC. 16, 1958

71-440-090

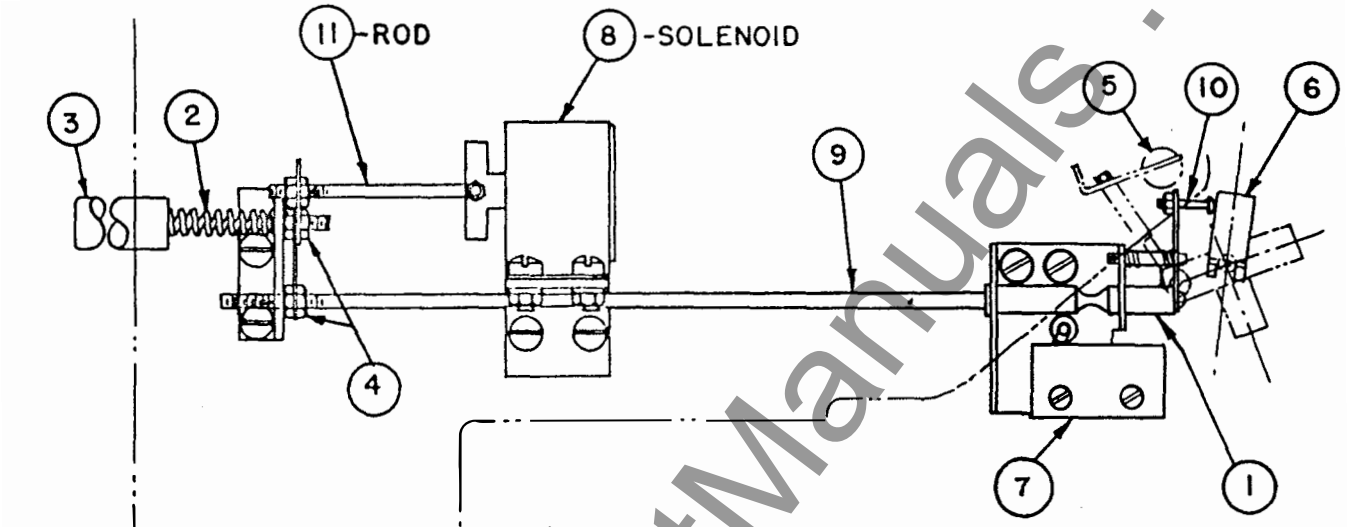


THERMAL MAGNETIC OVERCURRENT
TRIP DEVICE
FIG. 13

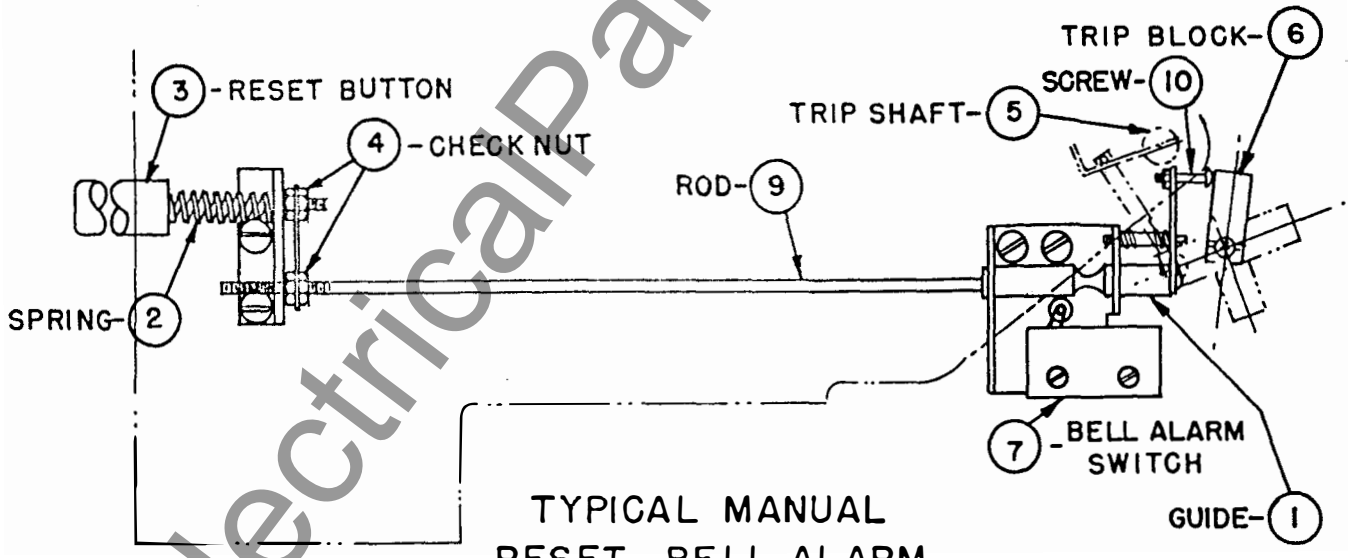
DEC. 12, 1958

71-540-122

ALLIS-CHALMERS MANUFACTURING COMPANY



TYPICAL ELECTRICAL
RESET BELL ALARM



TYPICAL MANUAL
RESET BELL ALARM

FIG. 14

JUNE 19, 1959 71-240-460

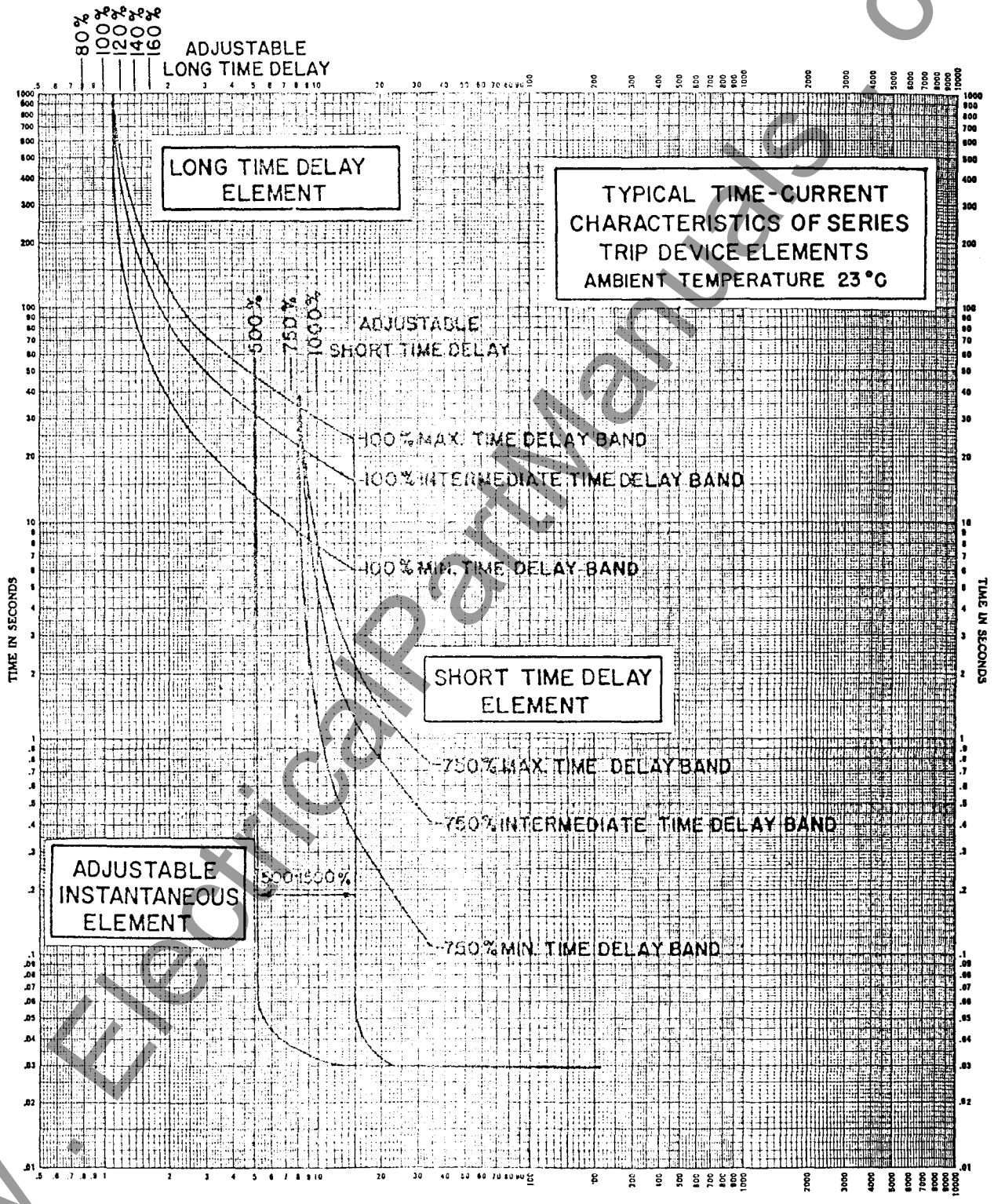


FIG. 16D

TIME CURRENT CURVES OF SERIES TRIP ELEMENT

APRIL 7, 1960 71-340-214

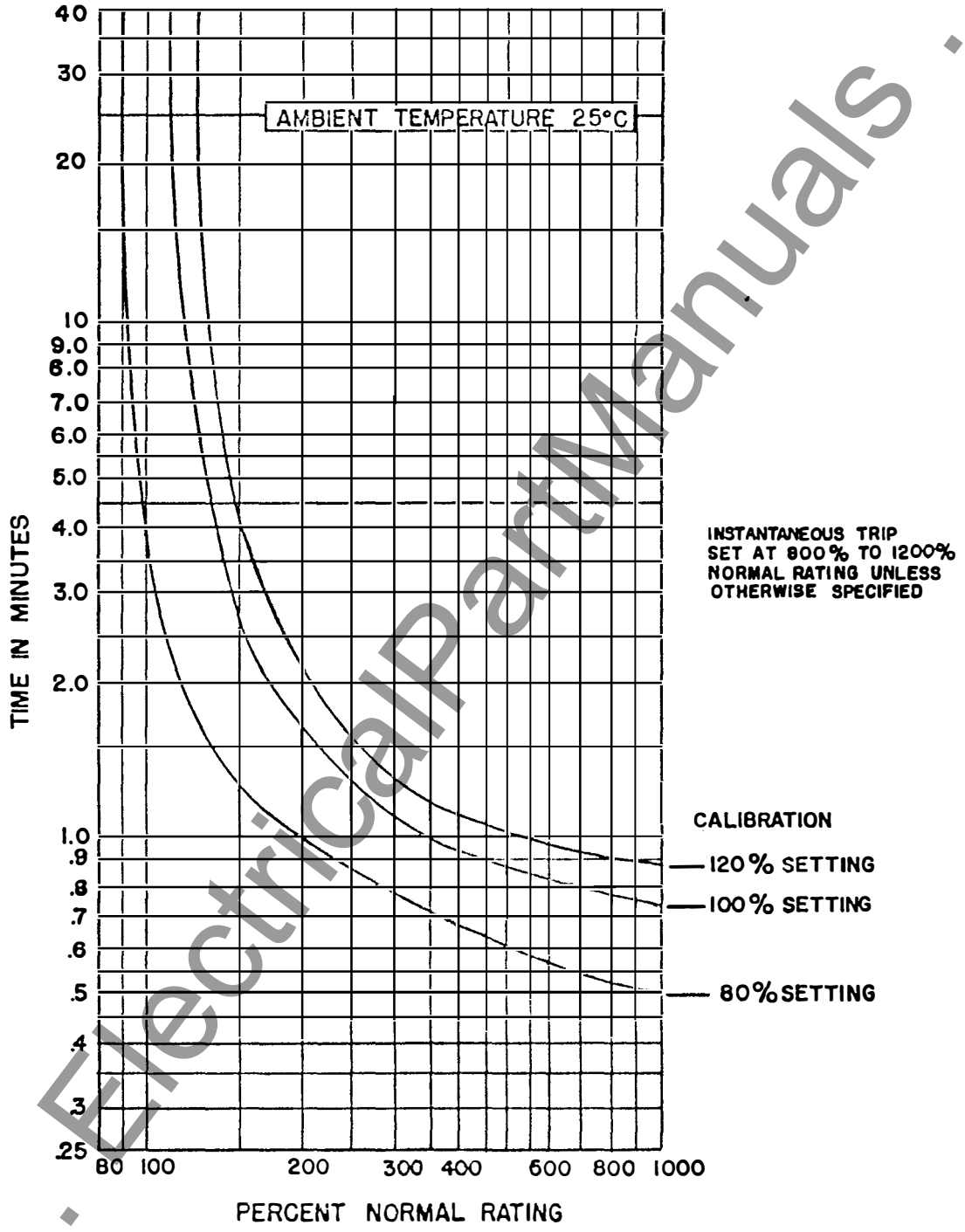


FIG. 17A

TYPICAL TIME CURRENT CURVE
THERMAL TRIP DEVICE

NOV. 4, 1955 71-240-179

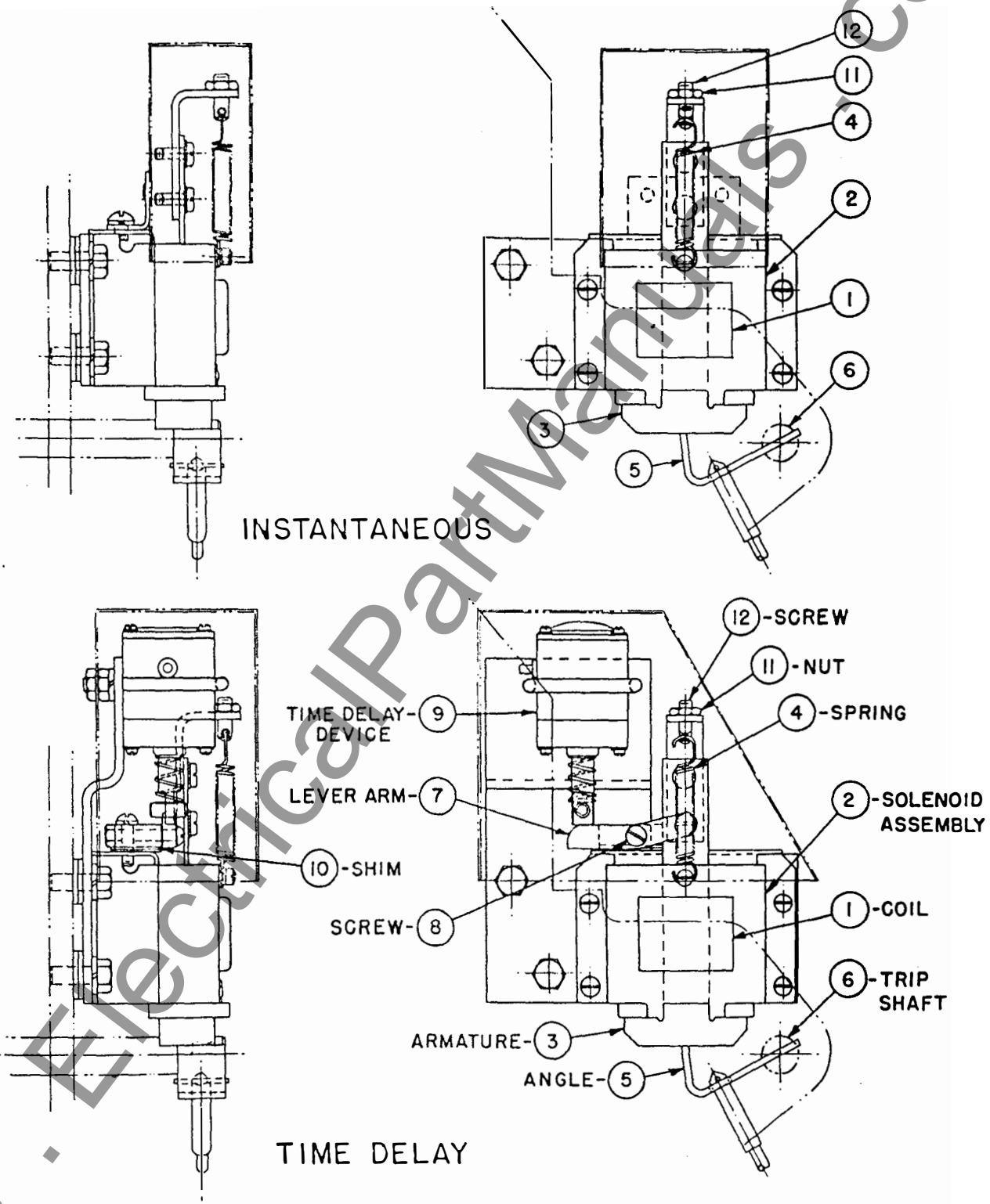
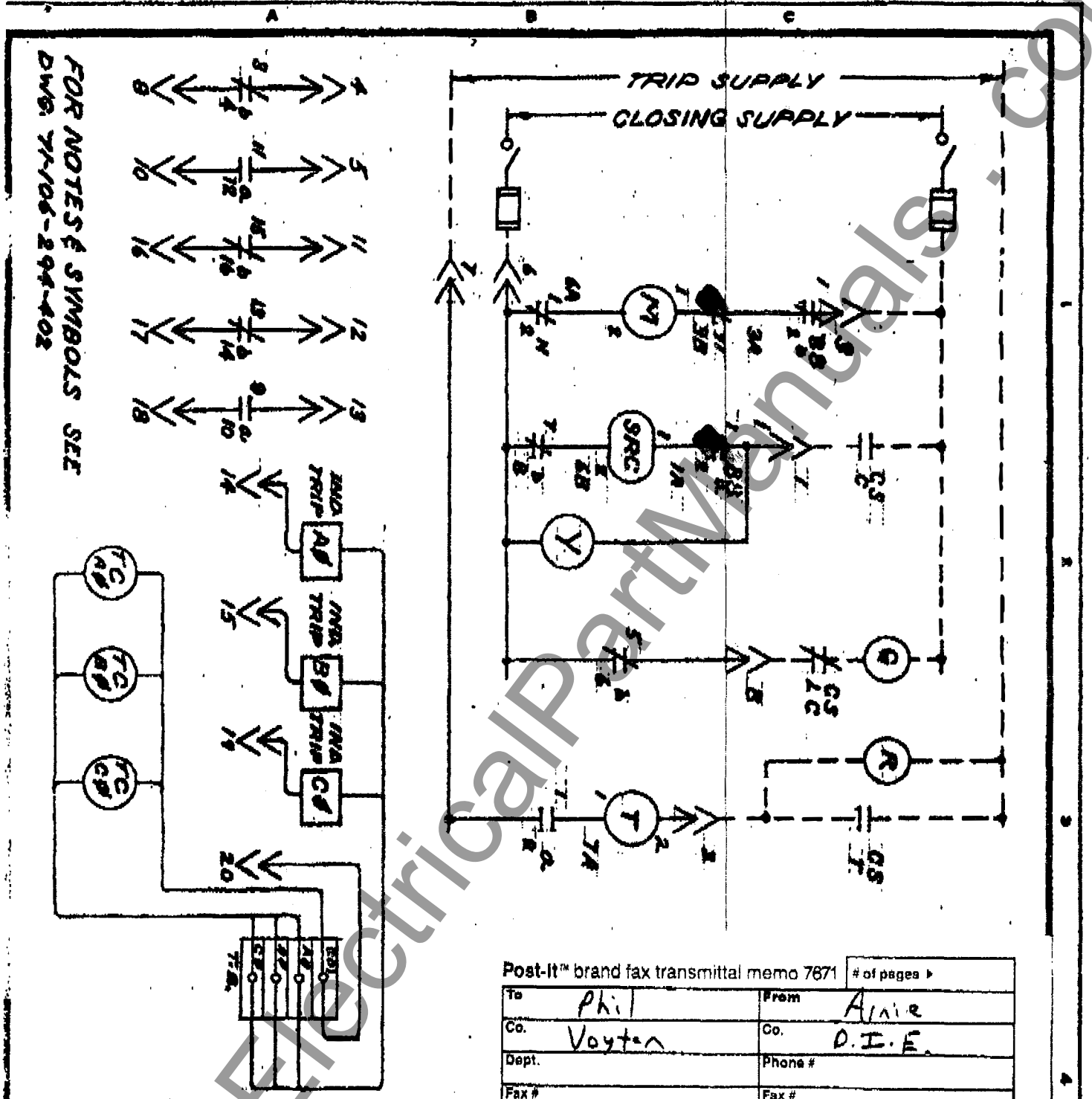


FIG. 18

TYPICAL UNDERVOLTAGE TRIP DEVICE

FEB. 5, 1959

71-340-257



Post-it™ brand fax transmittal memo 7671 | # of pages ▸

To	Phil	From	Alvie
Co.	Voyton	Co.	D.I.E.
Dept.		Phone #	
Fax #		Fax #	

7-12356-1

22-3-11	WIRING DIAG LA-75A ACB (SPECIAL)	ALLIS-CHALMERS MFG. CO. BOSTON WORKS BOSTON, MASS., U.S.A.
	·CONFIDENTIAL· PROPERTY OF ALLIS-CHALMERS MFG. CO.	71-141-715