SIEMENS-ALLIS

Information and Instruction Guide

F Frame
Types FJ6, F6, HF6

I-T-E® Molded Case Circuit Breakers

Bulletin IB-2.2.7-4C

I-T-E F Frame
Types FJ6, F6, HF6
Models ET, ETI, ET-H
2 and 3 Pole 70-250 Amperes

WARNING

Dangerous voltages are present inside the enclosures, or panels in which this circuit breaker is installed. Serious injury, electrocution, and/or equipment damage is possible unless extreme caution is used when examining this circuit breaker while it is still in service.

De-energize all incoming power if conditions exist which are contrary to those described in this instruction book or which are otherwise unusual.

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IMPORTANT

The information contained herein is general in nature and is not intended for specific application purposes nor is it intended as a training manual for unqualified personnel. Refer to Note for definition of a **qualified person***. It does not relieve the user of responsibility to use sound practices in application, installation, operation and maintenance of the equipment purchased or in personnel safety precautions. Should a conflict arise between the general information contained in this publication and the contents of drawings or supplementary material or both, the latter shall take precedence. ITE Electrical Products reserves the right to make changes in specficiations shown herein or add improvements at any time without notice or obligation.

NOTE

***Authorized and qualifed personnel-**

For the purpose of this manual a qualified person is one who is familiar with the installation, construction or operation of the equipment and the hazards involved. In addition, he has the following qualifications:

(a) **is trained and authorized** to de-energize, clear, ground, and tag circuits and equipment in accordance with established safety practices.

(b) **is trained** in the proper care and use of protective equipment such as rubber gloves, hard hat, safety glasses or face shields, flash clothing, etc., in accordance with established safety practices.

(c) **is trained** in rendering first aid.

WARRANTY DISCLAIMER

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance. Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, the matter should be referred to the local Siemens-Allis sales office.

The contents of this instruction manual shall not become part of or modify any prior or existing agreement, commitment or relationship. The sales contract contains the entire obligation of Siemens-Allis. The warranty contained in the contract between the parties is the sole warranty of Siemens-Allis. Any statements contained herein do not create new warranties or modify the existing warranty.

GENERAL INFORMATION FOR I-T-E F FRAME CIRCUIT BREAKERS AND SWITCHES 2 AND 3 POLE, 70-250 AMPERES

General

F-Frame circuit breakers, as shown in drawings on page 6, are for use in individual enclosures, switchboards, and in power and distribution panelboards.

They are available as thermal magnetic, with interchangeable trip units (Types F6 and HF6) and with non-interchangeable trip units (Type FJ6), instantaneous magnetic trip only (Type FJ6 ETI) and molded case switches.

Pressure wire connectors, suitable for use with aluminum or copper wire are available for all F-Frame circuit breakers. Rear connection studs or plug-in connector assemblies are also available (2 and 3 pole). The latter type of arrangement permits the removal of the circuit breaker from its leads without physically coming in contact with either the line or load terminals. Special features such as shunt trip, auxiliary and alarm switches and undervoltage trip devices are available for field adaptation. These devices are mounted internally and UL listed, page 35. Information concerning these special devices can be found on page 34.

Thermal Magnetic

F6, FJ6, HF6 circuit breakers provide complete overload and short circuit protection by use of a time-delay thermal trip element and an instantaneous magnetic trip device. Nominal instantaneous trip values are externally adjustable with eight trip points as shown below:

Breaker Ampere Rating	NOMINAL INSTANTANEOUS VALUES							
	Low	2	3	4	5	6	7	HI
70 - 90	600	640	690	730	770	810	850	900
100 - 110	700	770	840	920	990	1060	1140	1200
125 - 150	800	900	1000	1100	1200	1300	1400	1500
175 - 200	900	1060	1210	1370	1520	1780	1930	2000
225 - 250	1100	1300	1500	1700	1900	2100	2300	2500

All values ± 25% on Low Setting ± 20% on High Setting based on UL 489 Standards.

Circuit breakers are calibrated at the factory, under controlled temperature conditions of a 40°C (104°F) ambient. The cover on the trip unit is sealed to prevent access to the trip elements. Alterations of the calibration of these elements should not be attempted. Removal of the special sealed line cover voids the Underwriters' Laboratories, Inc. listing for that specific circuit breaker.

Catalog numbers for ordering and informational purposes can be found pages 33, 34.

Instantaneous Trip

ETI circuit breakers (adjustable instantaneous magnetic trip only) are designed for use in welding circuits, motor circuits and combination starters where short circuit protection only is required. When used in combination starters, they serve in conjunction with motor protective relays to offer complete protection. The relays guard against motor overloads, the circuit breaker provides short circuit protection.

The available instantaneous adjustments are as follows:

Rating	NOMINAL INSTANTANEOUS VALUES							
	LOW	2	3	4	5	6	7	HI
250	1100	1300	1500	1700	1900	2100	2300	2500

All Values ±20%

Molded Case Switch

A molded case switch is available in the FJ6 type circuit breaker. This device employs the same operating mechanism as the thermal magnetic and magnetic only units. A preset instantaneous function is factory installed to allow the switch to trip and protect itself at a high fault condition. No overload or low fault current protection is provided. This protection must be supplied by separate overcurrent devices. Catalog information is located on page 33.

Interrupting Ratings

The interrupting ratings of the FJ6, FJ, HF6 circuit breakers are based on circuits adjusted to the rated short circuit (at specified voltage) before the insertion of the circuit breaker.

Based on UL 489 Standards Symmetrical Rms Amperes				
Breaker Type	240VAC	480VAC	600VAC	250VDC
F6-FJ6	25,000	22,000	18,000	10,000
HF6	65,000	35,000	22,000	20,000

Circuit Breaker Operation

With the mechanism latched and the contacts open, the operating handle will be in the "OFF" position. Moving the handle to the "ON" position closes the contacts and establishes a circuit through the breaker. Under overload or short circuit conditions sufficient to trip or open the breaker automatically, the operating handle moves to a position between "ON" and "OFF" as previously described. To relatch the circuit breaker after automatic operation, move the operating handle to the extreme "OFF" position. The circuit breaker is now ready for reclosing.

The overcenter toggle mechanism is trip free of the operating handle. The circuit breaker, therefore, cannot be held closed by means of the handle should a tripping condition exist. The handle will assume an intermediate position between "ON" and "OFF" after automatic operation, thus giving a clear indication of tripping.

Warning for Circuit Breaker Removal

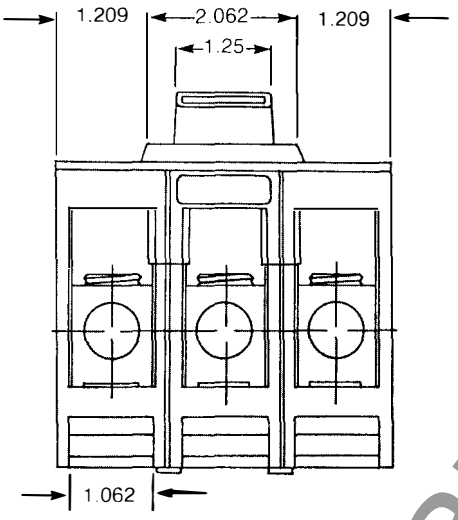
The circuit breaker should always be in the "TRIPPED" or "OFF" position; and if practical, the switchboard de-energized before inspecting, changing, installing or removing the circuit breaker. Never attempt to add features pod with the circuit breaker mounted in any panel or switchboard. If the bus cannot be de-energized, use insulated hand tools, rubber gloves and a rubber floormat.

Maintenance

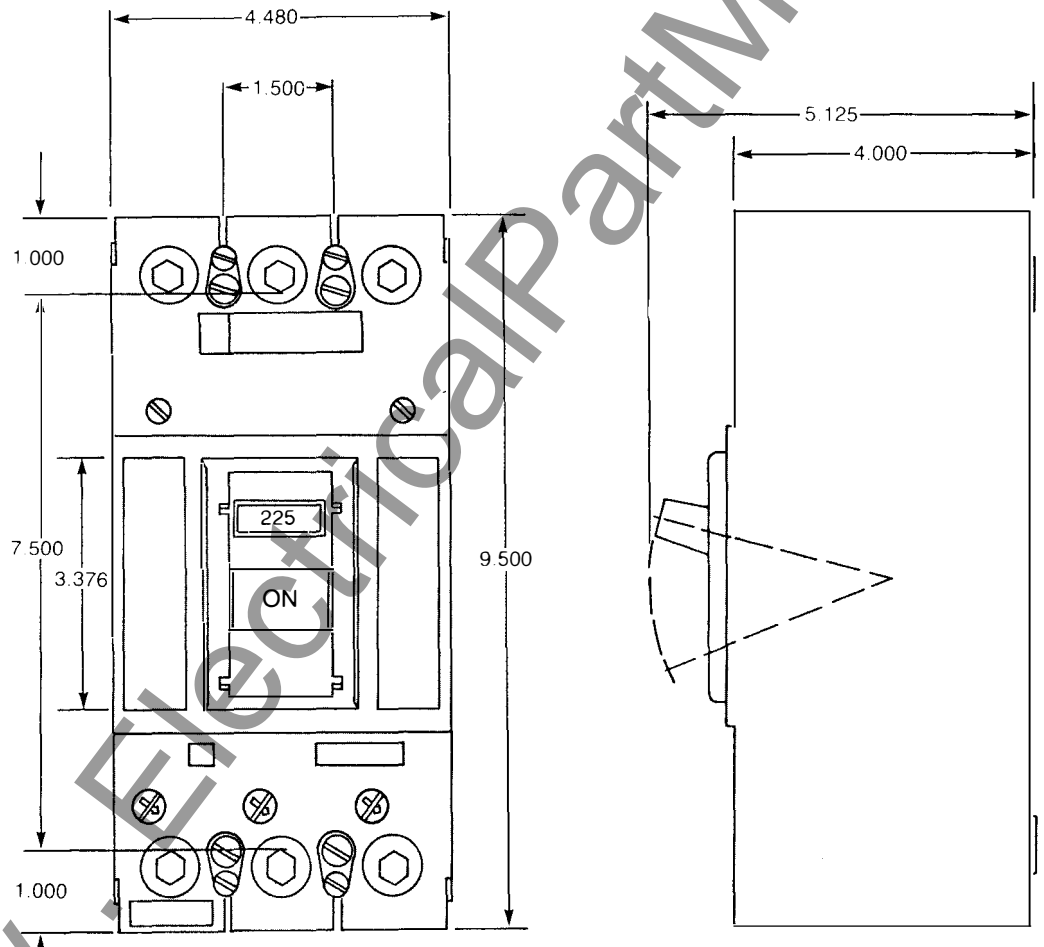
Specific maintenance schedules are recommended in order to assure a proper functioning circuit breaker. This schedule should include the following items:

1) Breaker should trip when push to trip button is pushed.
2) All terminal connector screws are at recommended torque values.
3) Visual inspection for broken or cracked case. (Damage caused by external sources)
4) Trip unit attachment screws are at recommended torque value.
5) For additional testing information consult NEMA - PROCEDURES FOR VERIFYING PERFORMANCE OF MOLDED CASE CIRCUIT BREAKERS.

SPECIAL NOTE:
FJ6 circuit breakers are not UL listed as interchangeable trips—DO NOT REMOVE TRIP UNIT and replace with another. Removal of trip unit voids UL listing.



END VIEW



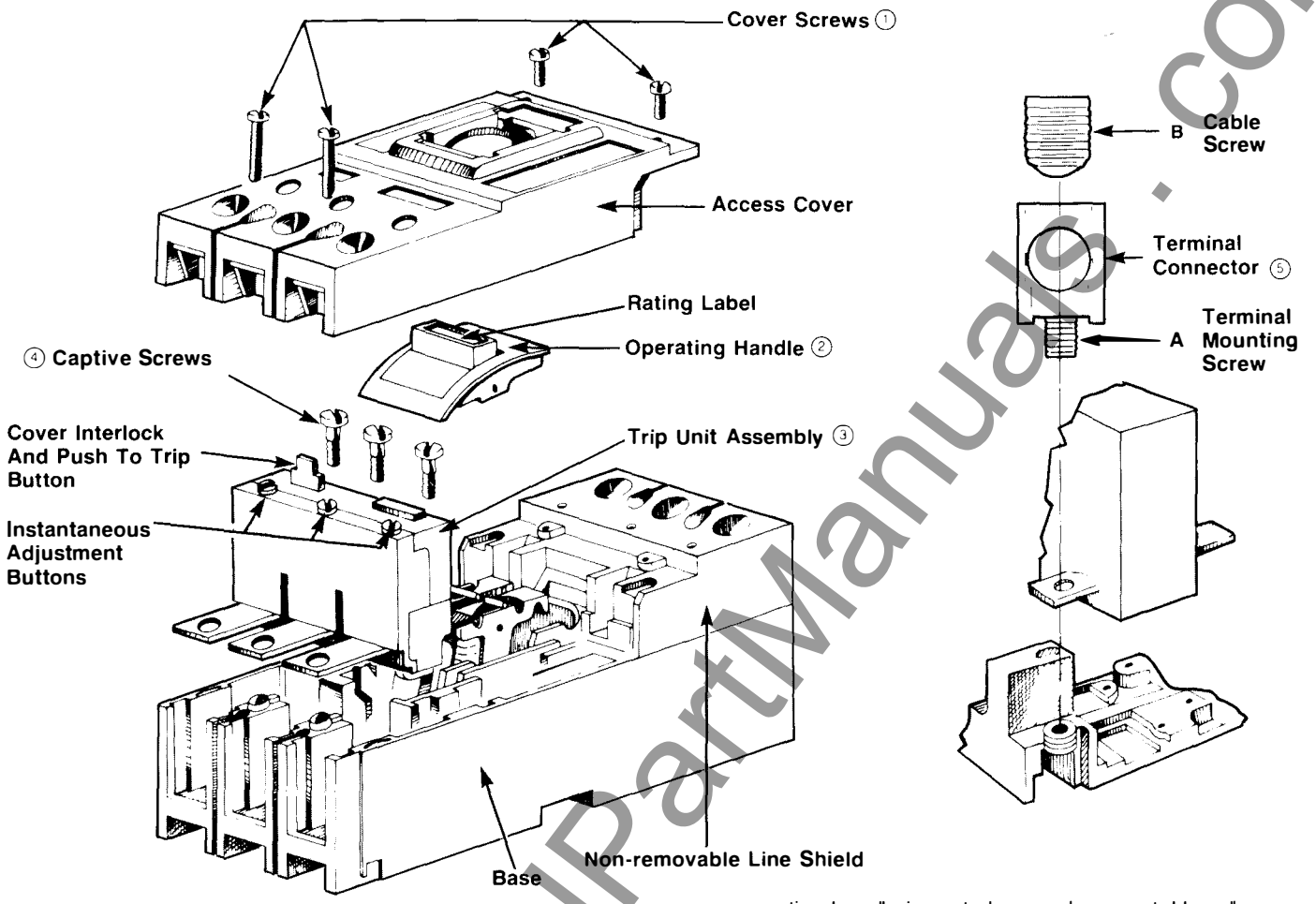
FRONT VIEW

SIDE VIEW

DIMENSIONS IN INCHES

NOTE: 2 and 3 pole breakers are the same physical size; in the 2 pole breakers the current carrying parts are omitted from the center pole.

INSTRUCTIONS FOR INSTALLING I-T-E TRIP UNITS



WARNING
HAZARD OF ELECTRICAL SHOCK OR BURN. TURN OFF POWER SUPPLYING THIS DEVICE BEFORE REMOVING COVER OR DEVICE. FOR THE PURPOSE OF THIS MANUAL AND PRODUCT LABELS, WARNING INDICATES DEATH, SEVERE PERSONAL INJURY OR SUBSTANTIAL PROPERTY DAMAGE CAN RESULT IF PROPER PRECAUTIONS ARE NOT TAKEN.

NOTE: CIRCUIT BREAKER MUST BE IN THE "TRIPPED" POSITION BEFORE REMOVING ACCESS COVER. TO TRIP THE BREAKER SIMPLY DEPRESS THE RED "PUSH TO TRIP" BUTTON.

To Add Trip Unit To Breaker Frame:

① Remove cover attachment screws and cover.
Note: If breaker frame is mounted, load-end breaker mounting screws must also be backed-out before cover can be removed.
② Remove operating handle.
③ Lower trip unit assembly into base. Make sure trip unit latch pin engages slots in mechanism frame.
④ Tighten (3) three trip unit captive screws. (Recommended torque 6 ft. lbs.)
⑤ Add the load lugs and fasten per instructions furnished with connector kits.
6. Apply rating label, supplied with trip unit, to recessed area on top of operating handle. Note: Make sure rating label agrees with amperage rating of trip unit installed.
7. Replace operating handle. Operating handle must be installed with word "On" toward trip unit. Note: Make sure operating handle is seated squarely on metal handle arm and that spherical embossments engage holes on each side of operating handle.
8. Replace access cover and cover attachment screws. (Recommended torque 8 in. lbs.) Replace load-side breaker mounting screws if applicable.
9. Move operating handle to extreme "Off" position (reset).

Solderless Connector Torque Values			
Cat. No.	"A" Torque	"B" Torque	Cable Range
TAIF350	175 in. -lbs.	375 in. -lbs.	#6-350 MCM CU. #4-350 MCM AL.
TCIF350	175 in. -lbs.	375 in. -lbs.	#6-350 MCM CU.

To Replace Trip Unit In Breaker Frame:

NOTE: CIRCUIT BREAKER MUST BE IN THE "TRIPPED" POSITION AND BREAKER TERMINALS MUST BE DISENGAGED FROM ANY SOURCE OF POWER BEFORE REMOVING COVER.

1. Remove cover attachment screws and cover.
Note: If circuit breaker is mounted, load-end breaker mounting screws must also be backed-out before cover can be removed.
2. Remove operating handle.
3. Back-out (3) three trip attachment screws.
Note: Attachment screws will remain captive to trip unit assembly.
4. Remove load-end cable connector mounting screws and connectors if applicable.
5. Lift trip unit assembly from circuit breaker.
6. Add new trip unit as outlined under steps 3 to 9 of "Add Trip Unit" instructions.

ATTACHING I-T-E HANDLE BLOCKING DEVICE CAT. NO. F6HB1

To Block Handle "On".

Turn Breaker "On". Assemble blocking device to breaker by positioning over handle as shown, with handle opening of blocking device toward the line end. Insert tab **A** into slot **A1**. Push toward handle and downward in area shown until tab **B** drops into slot **B1** as shown in Fig. 2.

To Block Handle "Off".

Turn breaker "Off". Reverse handle blocking device so that handle opening of blocking device is toward the load end. Insert tab **A** into slot **B1**. Push toward handle and downward in area shown until tab **B** seats in slot **A1**.

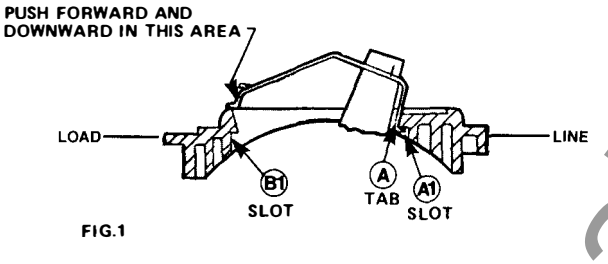


FIG.1

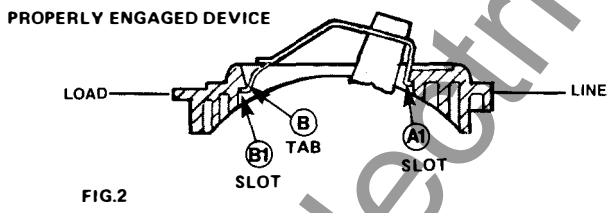


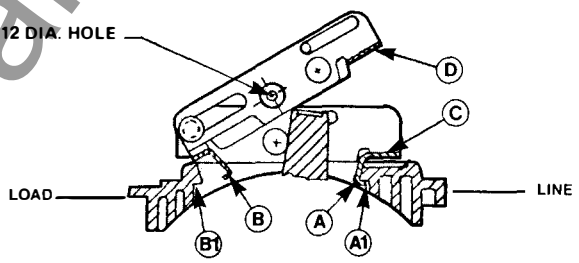
FIG.2

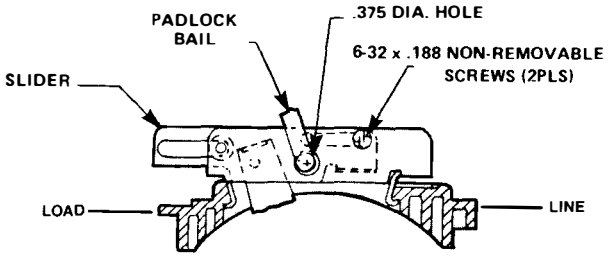
ATTACHING I-T-E PADLOCKING DEVICE CAT. NO. F6PL1

With breaker in tripped position, assemble padlocking device to breaker by positioning over handle as shown. Insert tab **A** into slot **A1**. Pivot tab **B** into slot **B1** until surface **D** is resting on surface **C**.

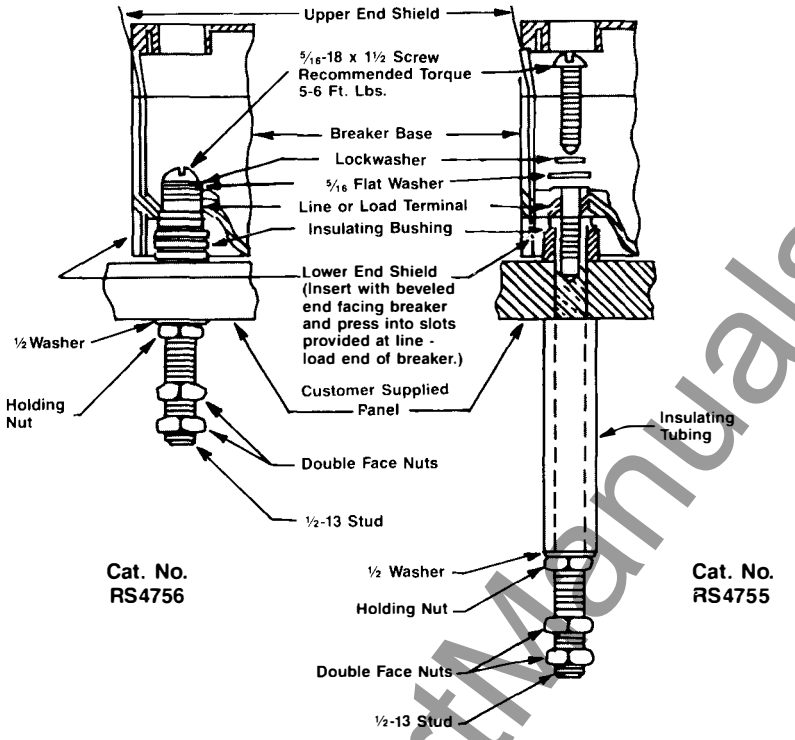
Install 6-32 x .188 non-removable screws (2PLS). To padlock handle in "Off" position move breaker handle to off and move slider to the left as shown below until .375 dia. holes line up allowing padlock to be installed.

NOTE: To padlock circuit breaker in "On" position, enlarge .12 dia. hole of slider to .375 dia. before assembly to breaker. File away burrs after drilling. Assemble padlocking device to breaker as explained above, then turn breaker "On" and install padlock.

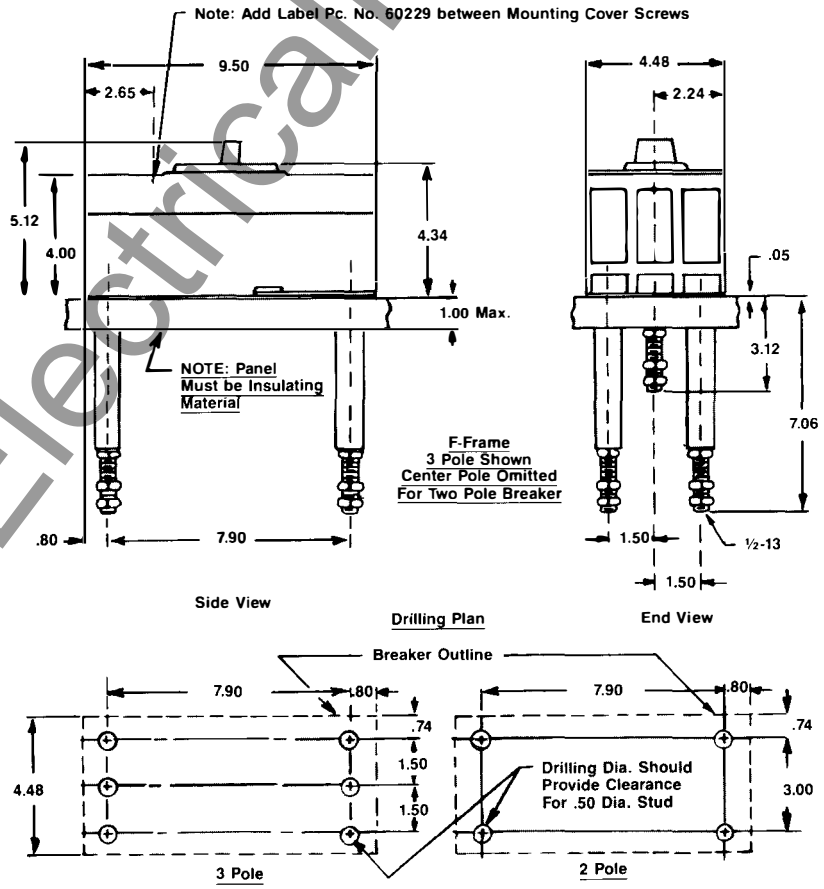




INSTRUCTIONS FOR INSTALLATION OF I-T-E REAR CONNECTING STUDS



POLE	QUANTITY REQUIRED PER BREAKER
2	4 of RS4755
3	4 of RS4755 plus 2 of RS4756



INSTRUCTIONS FOR INSTALLATION OF I-T-E CIRCUIT BREAKER PLUG-IN ADAPTERS

A complete plug-in installation requires one line end adapter assembly (consisting of mounting block, tulip connectors and associated hardware), one load end adapter assembly. An optional switchboard mounting pan is available or customer can supply a mounting means to suit his requirements.

APPLICATION INFORMATION	NO. POLES	LINE END ADAPTER CAT. NO.	LOAD END ADAPTER CAT. NO.	SWITCHBOARD MTG. PAN CAT. NO.
	2	PC4753	PC4753	PL4762
	3	PC4754	PC4754	PL4762

Mounting Preparation (Figs. 1 & 2)

A. If the switchboard mounting pan (**1**) is to be used, provide drilling as shown in Fig. 1.

B. If other mounting means are to be used, provide the cutouts and drilling required to mount the adapter blocks as shown in Fig. 2.

Switchboard Mounting Plate, if used, (Fig. 3)

C. Place switchboard mounting pan (**1**) in position at location previously prepared in step 1 above. Secure in place with 5/16" hardware (hardware furnished by customer).

Mounting Block (Fig. 3)

D. Align mounting block (**2**) with cutouts in switchboard mounting pan (or customer's mounting means as previously prepared in Step 2 above) and secure in place with 3/8 flatwashers (**3**), lockwashers (**4**) and 3/8-16 hex nuts (**5**) furnished.

Breaker Preparation (Fig. 4) Remove pressure wire connectors from breaker if present.

E. Place tulip clip assembly (**6**) on back of breaker in recess provided in base molding. Secure in place with 5/16" flatwashers (**7**), lockwashers (**8**) & 5/16-18 x 1½ round head screws (**9**) furnished. Recommended tightening torque for these bolts is 5-6 ft. lbs. to assure a good electrical connection. Repeat this procedure for the remaining tulip clip assemblies.

F. Slide upper end shields (**10**) and insert lower and shields (**11**) with beveled and facing breaker and press into slots provided at line & load end of breaker.

G. Add accessory label (**12**) to top of breaker as indicated on Instruction Sheet.

Final Assembly (Fig. 5)

H. Make bus and/or cable connection to rear of mounting block studs using hex nuts (**13**) furnished to secure this connection.

CAUTION: Make certain that breaker operating handle is in the "OFF" position before proceeding with the next step.

I. Align breaker with mounting blocks and force female tulip clips over male studs in mounting block until breaker base bottoms against mounting block. Secure breaker in place with ¼-20 x 4¼ long mounting screws (**14**), lockwashers (**15**), and flatwashers (**16**) furnished.

J. If installation requires the use of front panel trim, provide cutout for breaker escutcheon as shown in Fig. 6.

DIAGRAMS FOR INSTALLATION OF I-T-E CIRCUIT BREAKER PLUG-IN ADAPTERS

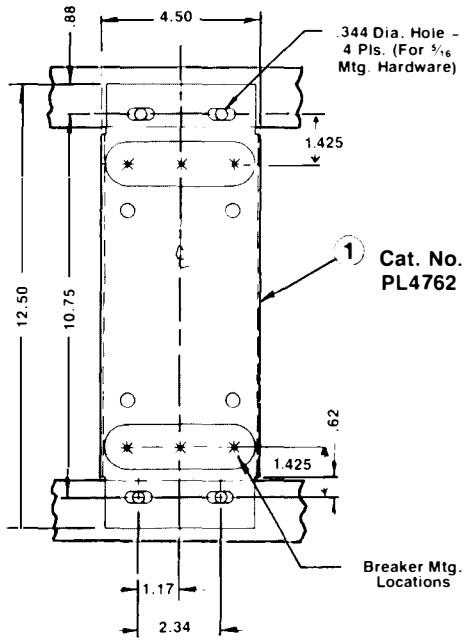


Fig. 1

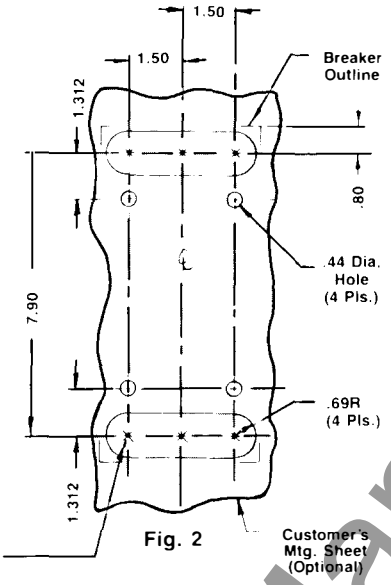


Fig. 2

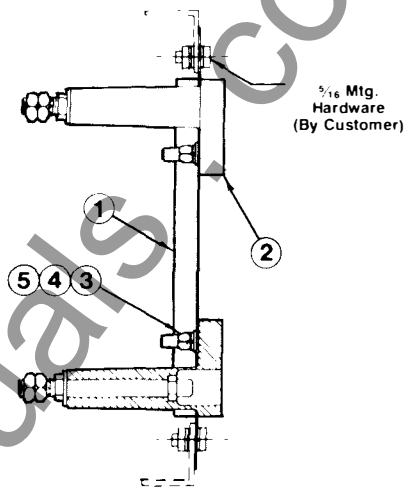


Fig. 3

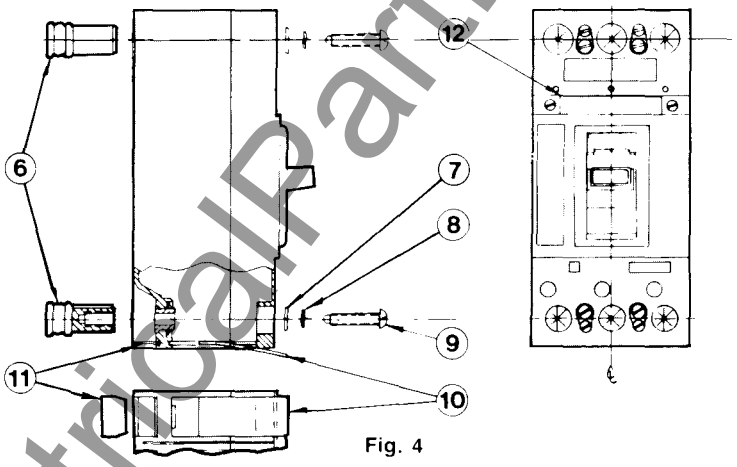
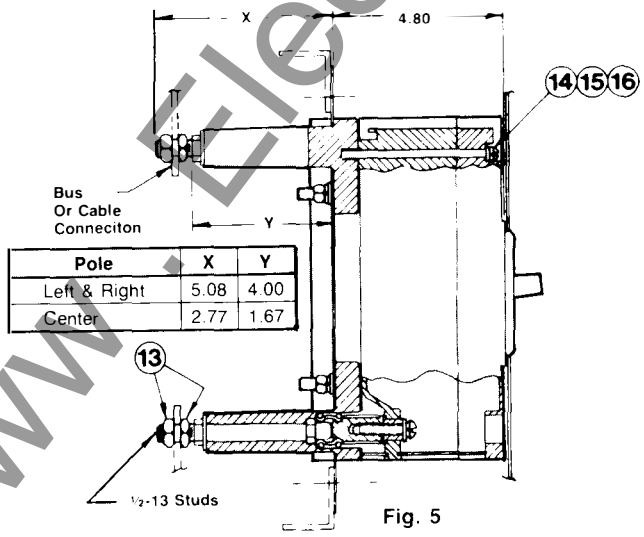


Fig. 4



Pole	X	Y
Left & Right	5.08	4.00
Center	2.77	1.67

Fig. 5

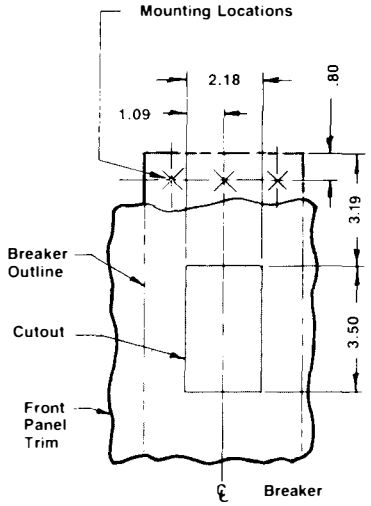


Fig. 6

INSTRUCTIONS FOR ASSEMBLING
I-T-E WALKING BEAM TYPE INTERLOCK
PANEL MOUNTED CIRCUIT BREAKER

A. Drill panel per panel drilling instruction sheet.
B. Break out proper knock-out (see Fig. 1 below) using screwdriver. Use needle file to smoothen opening in base to indicated dimensions. In both cases, prevent loose plastic from entering base, and test to see that plunger (**8**) moves freely within opening.
C. Assemble support (**1**) and spacers (**2**) to rear of panel using screws (**3**), lockwashers (**4**) and nuts (**5**) supplied as shown in Fig. 2. Note: Five spacers, each .015 in. thick, are provided; and depending on customer panel gage no., use quantity of spacers indicated on chart in upper right hand corner. Example: If customer panel is 12 ga., use two spacers.
D. Add circuit breakers (as prepared in Step 2) to customer panel for panel mounted units.
E. Assemble rocker arm sub-ass'y (**6**) to support (**1**) with rocker arm pin (**7**). Be sure rocker arm spring (part of rocker arm sub-ass'y) rests on top of projections on support (**1**) as shown in Fig. 2. Insert rocker arm pin (**7**) through rocker arm sub-ass'y (**6**) and through upper hole in plunger (**8**), one on each side of support. Note Position Of Plunger (See Fig. 2). Insert cotter pins (**9**) into holes of all three rocker arm pins (**7**). Spread cotter pins. Note: Heads of rocker arm pins (**7**) must be on upper side of assembly, and cotter pins (**9**) on lower side.
F. With both circuit breakers in "Off" position, interlock must move freely.
G. With one circuit breaker "On", the other circuit breaker must not close.

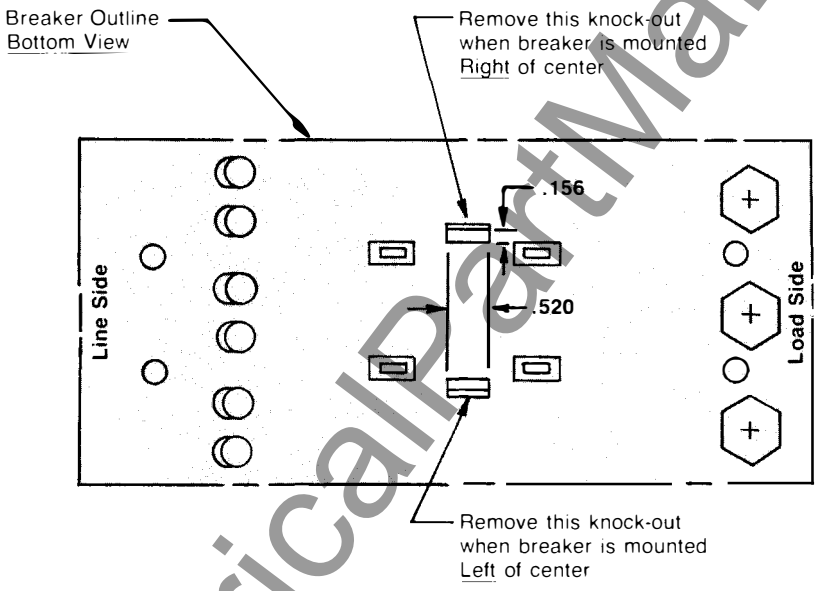
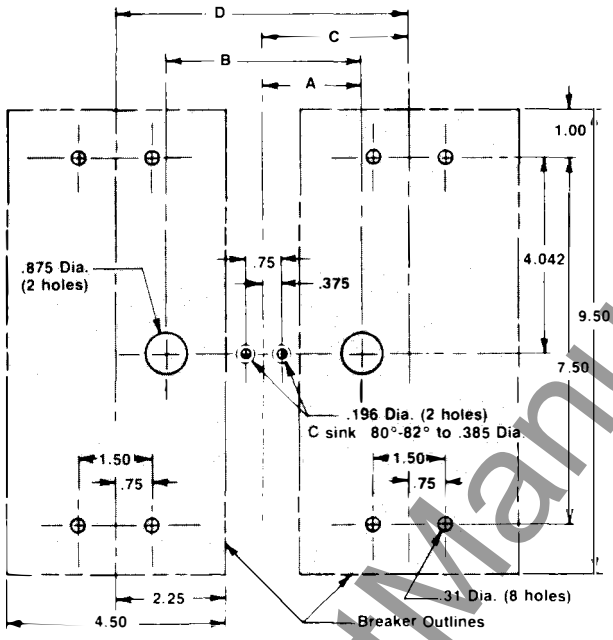


Fig. 1

INSTRUCTIONS FOR ASSEMBLING
I-T-E WALKING BEAM TYPE INTERLOCK — MI5426
PANEL MOUNTED CIRCUIT BREAKER

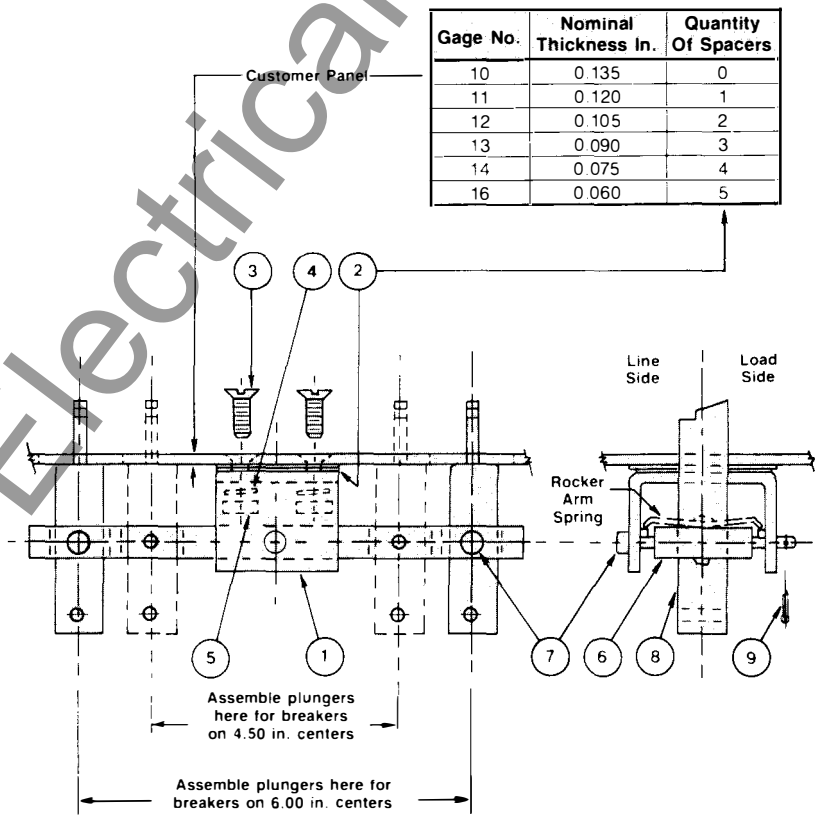
REAR OF PANEL — LINE SIDE
PANEL MOUNTING



REAR OF PANEL — LOAD SIDE

BREAKERS ON	A	B	C	D
4.50 IN. CENTERS	1.273	2.546	2.25	4.50
6.00 IN. CENTERS	2.023	4.046	3.00	6.00

Gage No.	Nominal Thickness In.	Quantity Of Spacers
10	0.135	0
11	0.120	1
12	0.105	2
13	0.090	3
14	0.075	4
16	0.060	5



INSTRUCTIONS FOR ASSEMBLING
I-T-E WALKING BEAM TYPE INTERLOCK
PLUG-IN MOUNTED CIRCUIT BREAKER

A. Drill panel per panel drilling instruction sheet.
B. Break out proper knock-out (see Fig. 1 below) using screwdriver. Use needle file to smoothen opening in base to indicated dimensions. In both cases, prevent loose plastic from entering base, and test to see that plunger (**8**) moves freely within opening.
C. Assemble support (**1**) and spacers (**2**) to rear of panel using screws (**3**), lockwashers (**4**) and nuts (**5**) supplied as shown in Fig. 2. Note: Five spacers, each .015 in. thick, are provided; and depending on customer panel gage no., use quantity of spacers indicated on chart in upper right hand corner. Example: If customer panel is 12 ga., use two spacers.
D. Add circuit breakers (as prepared in Step 2) to mounting blocks for plug-in mounted units. Refer to instructions for installation of circuit breaker plug-in adapters supplied with Plug-In Mounting Assemblies.
E. Assemble rocker arm sub-ass'y (**6**) to support (**1**) with rocker arm pin (**7**). Be sure rocker arm spring (part of rocker arm sub-ass'y) rests on top of projections on support (**1**) as shown in Fig. 2. Insert rocker arm pin (**7**) through rocker arm sub-ass'y (**6**) and through lower hole in plunger (**8**), one on each side of support. Note Position Of Plunger (See Fig. 2). Insert cotter pins (**9**) into holes of all three rocker arm pins (**7**). Spread cotter pins. Note: Heads of rocker arm pins (**7**) must be on upper side of assembly, and cotter pins (**9**) on lower side.
F. With both circuit breakers in "Off" position, interlock must move freely.
G. With one circuit breaker "On", the other circuit breaker must not close.

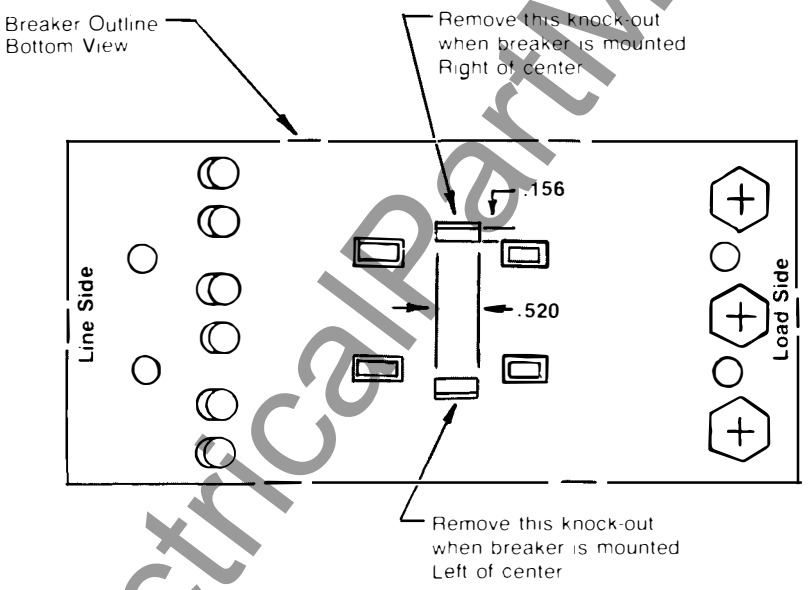
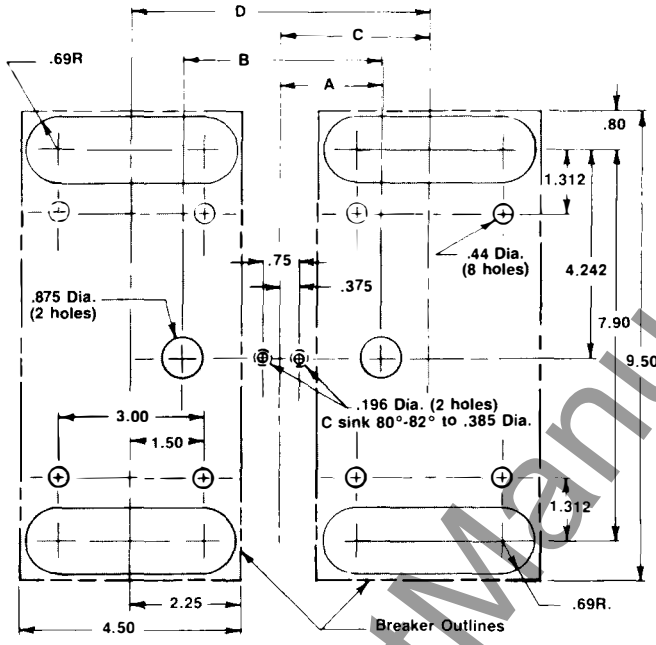


Fig. 1

PANEL DRILLING DIAGRAMS FOR I-T-E WALKING BEAM TYPE INTERLOCK — MI5443 PLUG-IN MOUNTED CIRCUIT BREAKER

REAR OF PANEL — LINE SIDE PLUG-IN MOUNTING



REAR OF PANEL — LOAD SIDE

BREAKERS ON	A	B	C	D
4.50 IN. CENTERS	1.273	2.546	2.25	4.50
6.00 IN. CENTERS	2.023	4.046	3.00	6.00

Gage No.	Nominal Thickness In.	Quantity Of Spacers
10	0.135	0
11	0.120	1
12	0.105	2
13	0.090	3
14	0.075	4
16	0.060	5

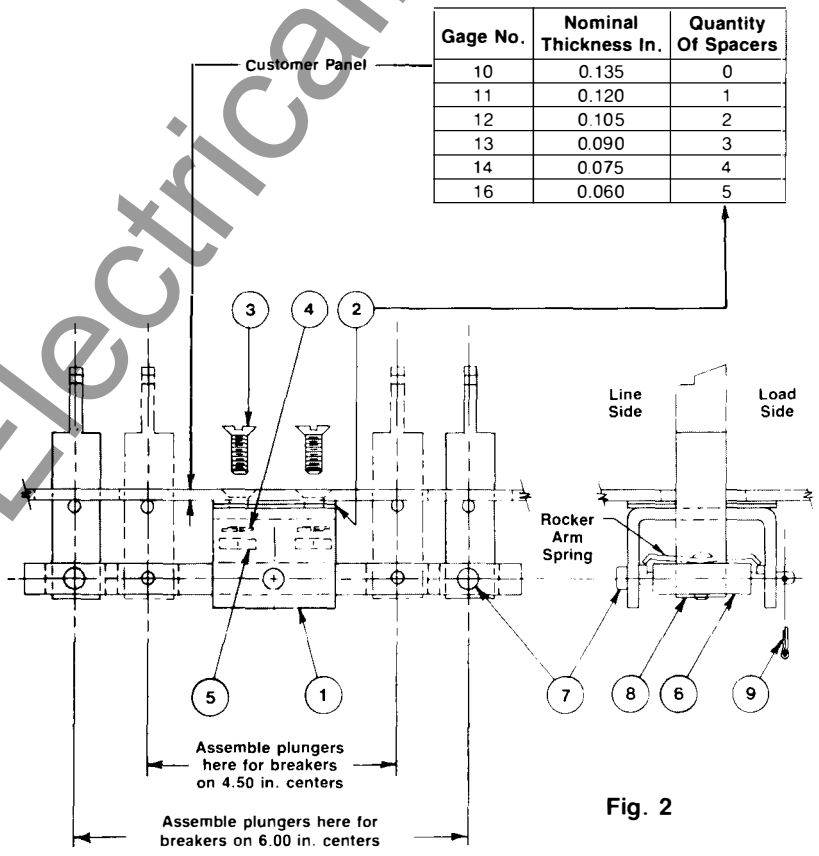


Fig. 2

CIRCUIT BREAKER PREPARATION

WARNING:
HAZARD OF ELECTRICAL SHOCK OR BURN! BREAKER MUST BE COMPLETELY DISCONNECTED AND REMOVED FROM ANY ELECTRICAL EQUIPMENT BEFORE ACCESSORIES ARE INSTALLED.
FOR THE PURPOSE OF THIS MANUAL AND PRODUCT LABELS, WARNING INDICATES DEATH, SEVERE PERSONAL INJURY OR SUBSTANTIAL PROPERTY DAMAGE CAN RESULT IF PROPER PRECAUTIONS ARE NOT TAKEN.

STEP 1.
Depress trip button (See Fig. 1) to trip circuit breaker prior to removing cover. Before attaching accessory unit, circuit breaker MUST be in tripped position.

STEP 2.
Remove four load end cover screws (A, Fig. 1) and, if breaker is mounted, also remove mounting screws (B, Fig. 1). Remove load end cover only. Accessory units can be mounted in either right or left poles of the circuit breaker.

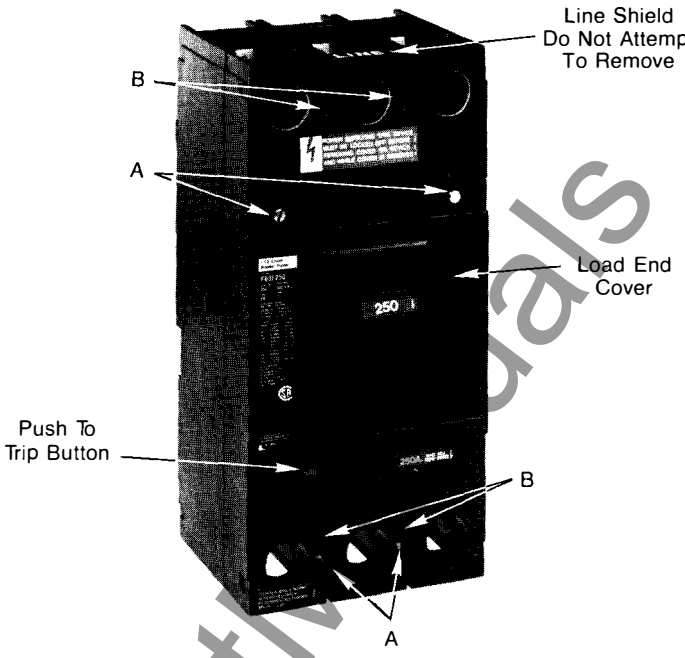


Fig. 1
Cover Screw location

ACCESSORY MOUNTING INSTRUCTIONS

STEP 3.
Feed accessory leads down and through $\frac{7}{8}$ x $\frac{5}{32}$ elongated opening (C, Fig. 2) to bring leads out of bottom of circuit breaker. Note: Leads must be brought out in the same order as they exit wire retainer of accessory case.

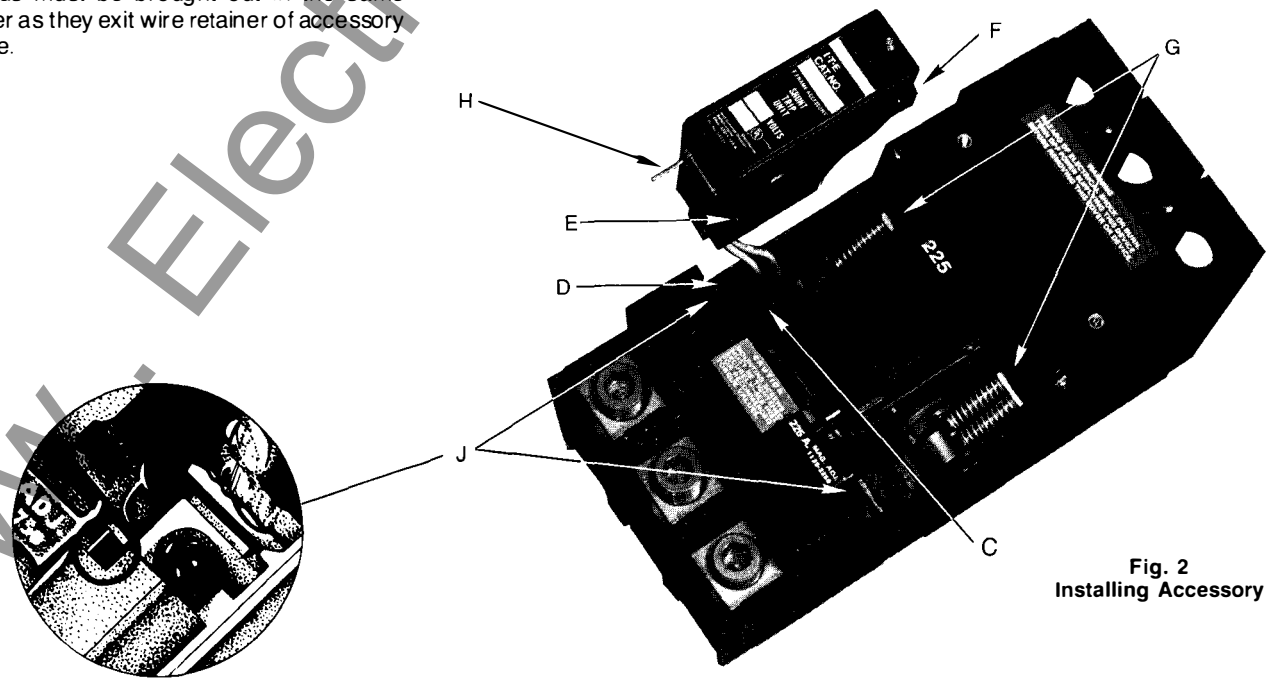


Fig. 2
Installing Accessory

STEP 4.

Accessory is located in circuit breaker by two ribs (E, Fig. 2), one on each side of accessory. Slide accessory ribs down into two grooves (D, Fig. 2) in base. When accessory is installed correctly, tops of ribs on side of accessory will be at same level as top outside edge of circuit breaker base and front of accessory (F, Fig. 2) will rest on pad (G, Fig. 2) of line shield. Pull gently and evenly on accessory wire leads (2 to 6 wires) while lowering accessory into base. Make sure all the slack is removed from leads inside breaker.

NOTE: On shunt trip and undervoltage trip units, be sure to guide transfer link (H, Fig. 2) into opening (J, Fig. 2) at the top of trip unit.

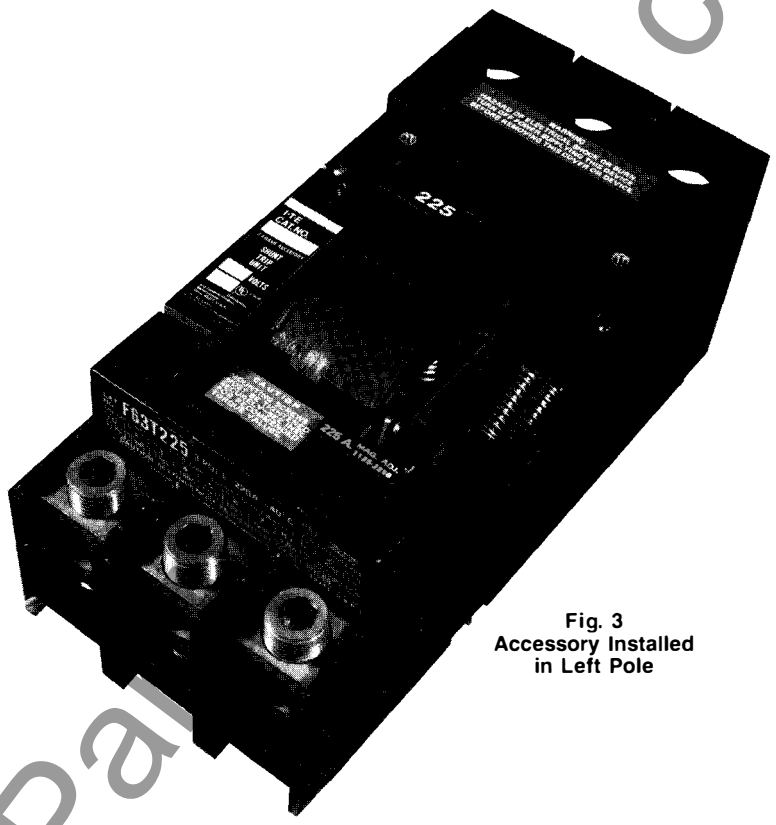


Fig. 3
Accessory Installed in Left Pole

STEP 5.

Replace load end cover and cover screws (quantity 4) and mounting screws (quantity 4) if mounted.

STEP 6.

Add two labels to circuit breaker. Attach identification label (K, Fig. 4) to top of circuit breaker on right hand side. Make sure correct identification square or squares have been checked (✓). Attach wiring label (L, Fig. 4) on side of circuit breaker base as shown.

STEP 7.

Refer to Electrical Check, page 19.

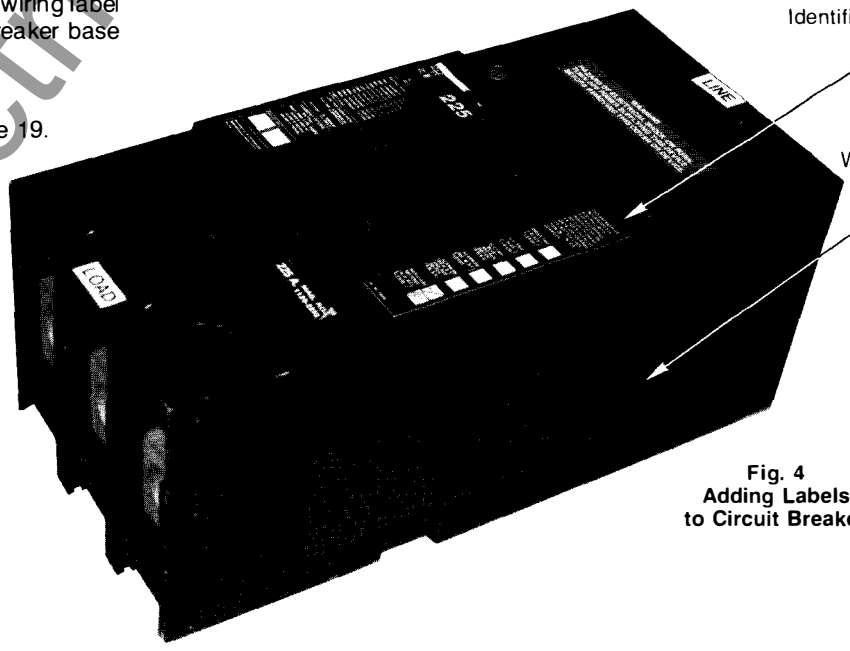


Fig. 4
Adding Labels to Circuit Breaker

AUXILIARY SWITCH KITS

Cat. No.	Number Of Switches	Ampere Rating of Switch				
		AC Voltage			DC Voltage	
		120 V	240 V	480 V	125 V	250 V
A01F62	1	7.2	7.2		0.5	0.25
A02F62	2	7.2	7.2		0.5	0.25
A01F64	1	7.2	7.2	7.2	0.5	0.25
A02F64	2	7.2	7.2	7.2	0.5	0.25

ALL SWITCHES HAVE THREE LEADS AND ARE IDENTIFIED AS FOLLOWS:

Wire Markings	Wire Color	Switch Terminals or Contacts
C or C1	White	C – Common terminal
A or A1	Black	A – Contact open when breaker is open, closed when breaker is closed.
B or B1	Red	B – Contact closed when breaker is open, open when breaker is closed.

MECHANICAL/ELECTRICAL CHECK

1. Use a buzzer or light indicator attached to switch leads A and C. With breaker in ''ON'' position, a light or buzz should be observed.

2. Move handle to ''OFF'' position. Indicator light or buzzer should turn off.

3. Attach test to leads B and C. Light or buzzer should turn on.

4. Move handle to ''ON'' position. Indicator light or buzzer should turn off.

SHOULD THE INDICATOR NOT FUNCTION PROPERLY DURING CHECK PROCEDURE, CHECK FOR INCORRECT INSTALLATION OR WIRING.

MAXIMUM ACCESSORY COMBINATIONS THAT CAN BE INSTALLED

ONE SHUNT TRIP* + ONE UNDERVOLTAGE TRIP + ONE AUXILIARY SWITCH
ONE SHUNT TRIP* + TWO AUXILIARY SWITCHES
ONE SHUNT TRIP* + ONE BELLALARM + ONE AUXILIARY SWITCH
ONE UNDERVOLTAGE TRIP + THREE AUXILIARY SWITCHES
ONE UNDERVOLTAGE TRIP + ONE BELLALARM + TWO AUXILIARY SWITCHES
ONE BELLALARM + THREE AUXILIARLY SWITCHES
FOUR AUXILIARY SWITCHES

*SHUNT TRIP UNITS INCLUDE A COIL CLEARING SWITCH

SHUNT TRIP ACCESSORY

1. Reset and turn circuit breaker ON.
2. Attach test circuit to accessory leads. When the test voltage reaches 55 percent or more of the rated coil voltage, the circuit breaker should trip.
3. With breaker TRIPPED or OFF, check to make sure coil circuit has opened.

UNDERVOLTAGE TRIP ACCESSORY

1. With breaker in TRIPPED position, connect test circuit to accessory leads. Energize undervoltage trip device at 85 percent of the marked rated voltage of the coil. Reset and turn breaker handle ON.
2. Reduce voltage to 35 percent of rated coil voltage. Circuit breaker must trip. (Undervoltage device must trip between 70 and 35% of rated voltage.)

ELECTRICAL DATA FOR SHUNT TRIP

Coil Voltage	Inrush Current At Rated Voltage (Amperes)	Cat. No.
60 CYCLES AC		
120	0.395	S01F60
208	0.265	S02F60
240	0.165	S03F60
277	0.190	S15F60
480	0.145	S04F60
600	0.080	S06F60
DC		
24	2.2	S07F60
48	1.2	S09F60
125	0.5	S11F60
250	0.35	S13F60

ELECTRICAL DATA FOR UNDERVOLTAGE (UV) TRIP

Coil Voltage	Sealed-In Current At Rated Voltage (Amperes)	Cat. No.	
60 CYCLES AC		1 UV Trip Plus 1 Aux. Sw.	1 UV Trip Only
120	.03	W01F64	U01F60
208	.018	W02F64	U02F60
240	.016	W03F64	U03F60
277	.013	W16F64	U16F60
480	.008	W06F64	U06F60
*600	.008	W08F64	U08F60
DC			
24	.11	W13F64	U13F60
48	.06	W14F64	U14F60
125	.027	W10F64	U10F60
**250	.02	W12F64	U12F60

* Kit includes a 30k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

** Kit includes a 2.5k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

Note: Resistor to be mounted externally of circuit breaker & connected by installer.

Note: All auxilliary switch ratings are the same as auxilliary switch kit A01F64.

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STEP 1.

Depress trip button (See Fig. 1) to trip circuit breaker prior to removing cover. Before attaching accessory unit, circuit breaker MUST be in tripped position.

STEP 2.

Remove four load end cover screws (A, Fig. 1) and, if breaker is mounted, also remove mounting screws (B, Fig. 1). Remove load end cover and handle with barrier. Accessory units can be mounted in either right or left poles of the circuit breaker.

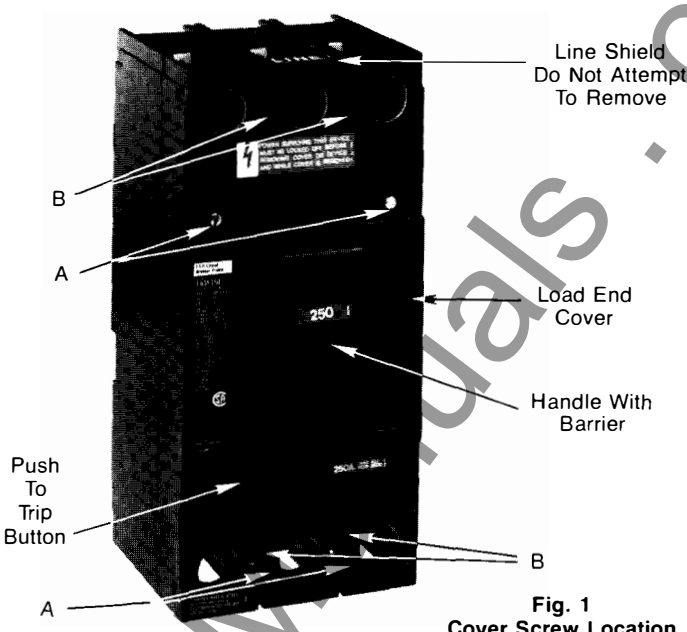


Fig. 1
Cover Screw Location

ACCESSORY MOUNTING INSTRUCTIONS

STEP 3.

Snap-in actuator member (C, Fig. 2) at $\frac{5}{16}$ square opening of accessory housing into microswitch actuator (.050 x .232 slot). Fig. 2 shows accessory unit ready for installation in right pole of circuit breaker. If left pole mounting is desired, insert actuator member on opposite side.
CAUTION: DO NOT DISTORT ACTUATOR

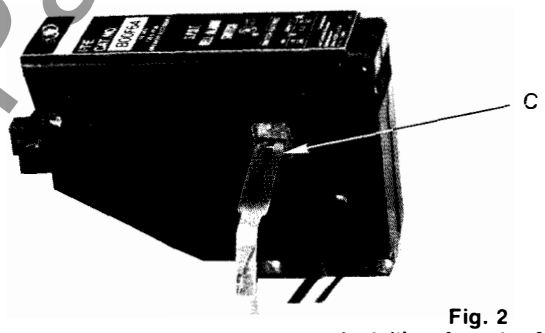


Fig. 2
Installing Actuator Member

STEP 4.

Feed accessory leads down and through $\frac{7}{8}$ x $\frac{5}{32}$ elongated opening (D, Fig. 3) to bring leads out the bottom of circuit breaker.
NOTE: Leads must be brought out in the same order as they exit wire retainer of accessory case.

STEP 5.

Accessory is located in circuit breaker by two ribs (F, Fig. 3), one on each side of the accessory. Slide accessory ribs down into two grooves (E, Fig. 3) in base. When accessory is installed correctly, tops of the ribs on side of the accessory will be at the same level as the top outside edge of the circuit breaker base and front of the accessory (G, Fig. 3) will rest on pad (H, Fig. 3) of line shield. Pull gently and evenly on accessory wire leads (3 to 6 wires) while lowering accessory into base. Make sure actuator member (C, Fig. 2) rests in the recess of the circuit breaker frame (pivoting point) and all the SLACK is removed from leads inside breaker.

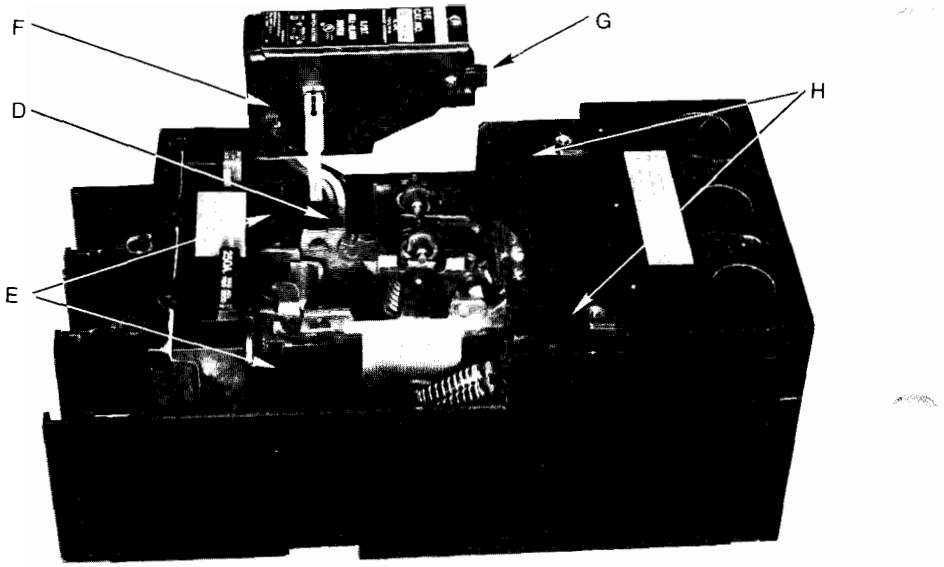


Fig. 3
Installing Accessory

STEP 6.

Replace handle with barrier, load end cover and cover screws (quantity 4) and mounting screws (quantity 4) if mounted. See Fig. 1.

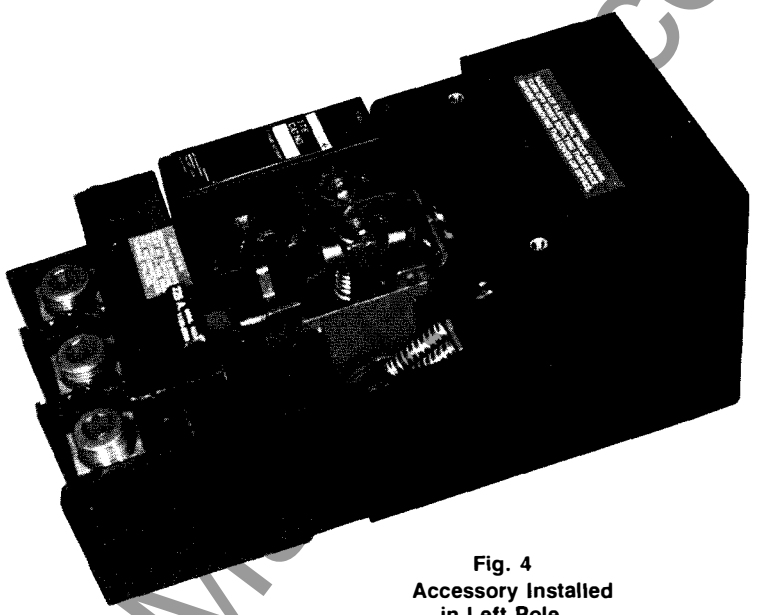


Fig. 4
Accessory Installed in Left Pole

STEP 7.

Add the two labels provided to circuit breaker. Attach identification label (J, Fig. 5) to top of the circuit breaker on the right hand side. Make sure correct identification square or squares have been checked (✓). Attach wiring label (K, Fig. 5) on side of the circuit breaker base as shown.

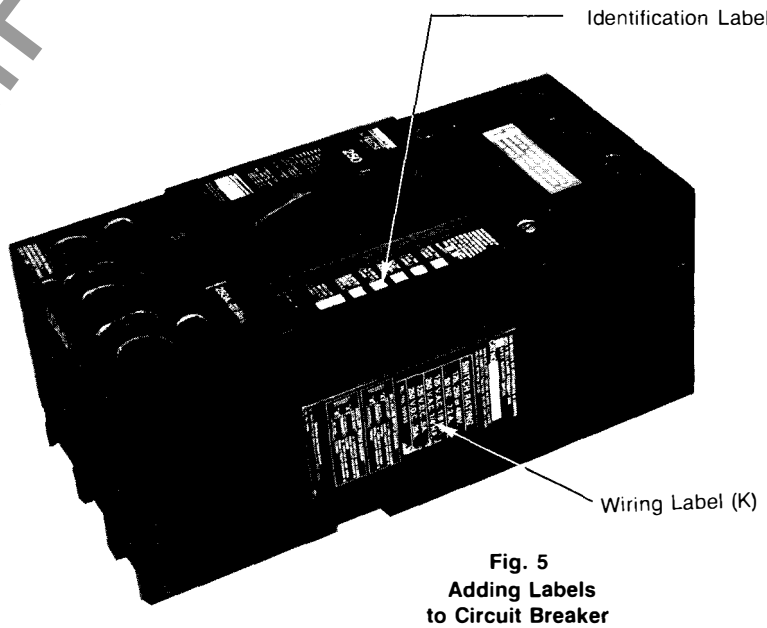


Fig. 5
Adding Labels to Circuit Breaker

BELL ALARM SWITCH KITS

Cat. No.	Number Of Auxiliary Switches	Ampere Rating of Switch				
		AC Voltage			DC Voltage	
		125 V	250 V	480 V	125 V	250 V
B00F64	0	7.2	7.2	7.2	0.50	0.25
C01F64	1	7.2	7.2	7.2	0.50	0.25

BELLALARM HAS THREE LEADS AND ARE IDENTIFIED AS FOLLOWS:

Wire Markings	Wire Color	Switch Terminals or Contacts.
C	White	C – Common terminal
A	Yellow	N.C. – Normally closed contact (Closed when circuit breaker is tripped).
B	Brown	N.O. – Normally open contact (Open when circuit breaker is tripped).

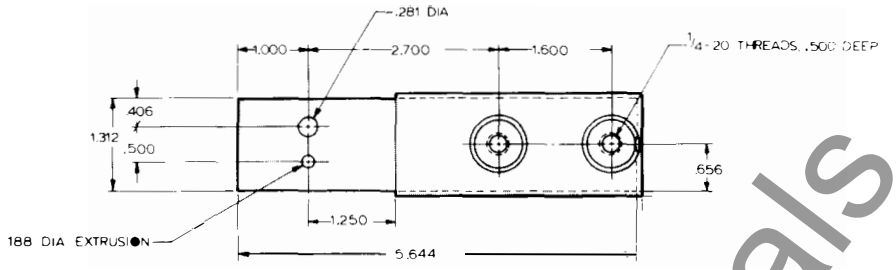
MECHANICAL / ELECTRICAL CHECK

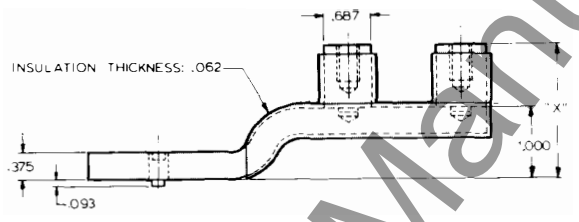
1. Use a buzzer or light indicator attached to switch leads A and C. With breaker in "ON" position, trip breaker by depressing red trip button. Indicator light or buzzer should operate.
2. Reset breaker to "OFF". Indicator light or buzzer should turn off.
3. Move breaker handle to "ON". Indicator light or buzzer should remain off.

SHOULD THE INDICATOR NOT FUNCTION PROPERLY DURING CHECK PROCEDURE, CHECK FOR INCORRECT INSTALLATION OR WIRING.

I-T-E PANELBOARD CONNECTOR STRAPS

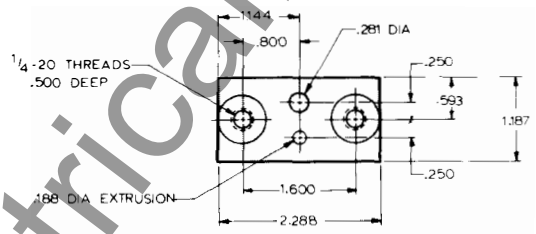
OUTSIDE CONNECTOR STRAP

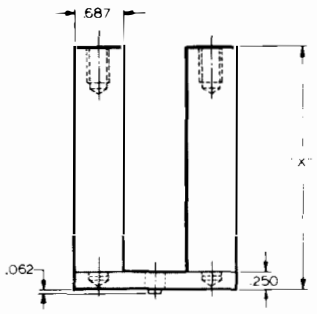




CAT. NO.	"X"
CS3610R	1.875
CS3612R	3.437

INSIDE CONNECTOR STRAP

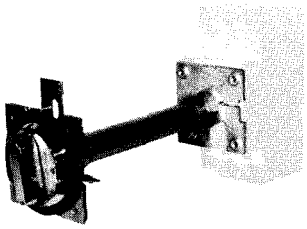




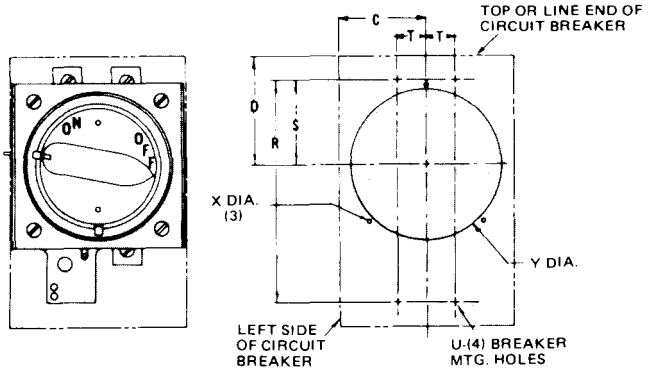
CAT. NO.	"X"
CS3611R	1.875
CS3613R	3.437

NOTE: THESE STRAPS ARE NOT USED BY I-T-E IN SERIES 6 PANELBOARDS.

INSTRUCTIONS FOR
I-T-E VARIABLE-DEPTH ROTARY-HANDLE
ENCLOSURE MECHANISM



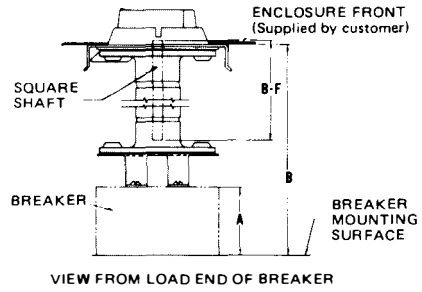
OUTLINE DRAWING AND DRILLING PLAN



DIMENSIONAL CHART

A	C *	D	F	R	S	T	U	X	Y
4	2¼	5⅛	5 5/16	7½	4⅛	¾	¼-20	⅜	4⅛

*2 Pole – 3 Pole



VIEW FROM LOAD END OF BREAKER

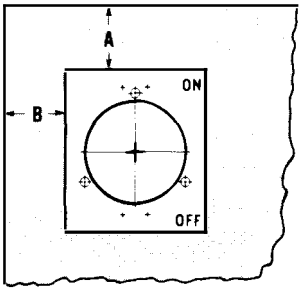
ENCLOSURE DEPTH DIMENSIONS

Maximum and Minimum

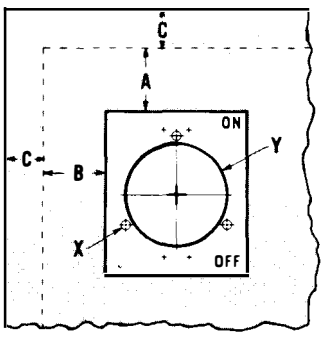
3 Inch Pipe		5 Inch Pipe		7 Inch Pipe		9 Inch Pipe	
B MAX.	B MIN.	B MAX.	B MIN.	B MAX.	B MIN.	B MAX.	B MIN.
11½	9½	13½	11½	15½	13½	17½	15½

DRILLING OF ENCLOSURE AND ENCLOSURE COVER

1. Drill four breaker mounting holes (U) per drilling plan on outline drawing.
2. Place template on breaker mounting surface so that the four centers in the template line up with the breaker mounting holes. Make sure "ON"-"OFF" indications on template are in same direction as "ON"-"OFF" indications on breaker. Use 2 breaker mounting screws to hold template in place.
3. Measure distances "A" and "B" from walls of enclosure. See Fig. 1.
4. Relocate template on enclosure cover by adding enclosure thickness and cover overhang (C) to dimensions "A" and "B". See Fig. 2.
5. Remove backing from template and secure template on door.
6. Drill holes "X" (.375 diam.) and "Y" (4.12 diam.) on template.

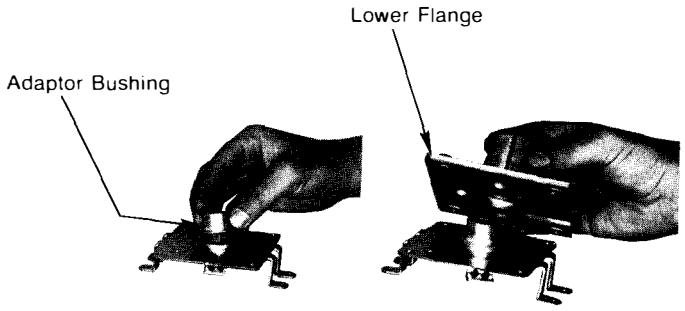


Breaker Mounting Surface Fig. 1

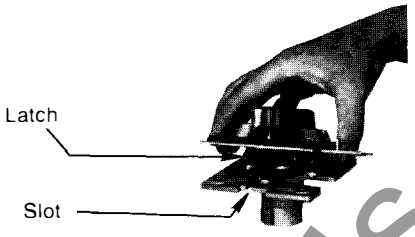


Enclosure Cover Fig. 2

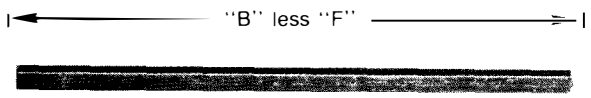
ASSEMBLY OF MECHANISM



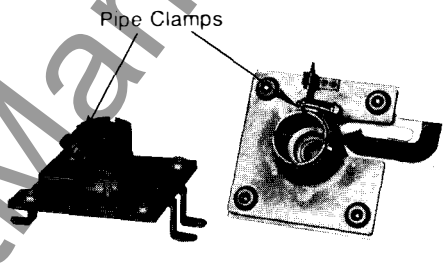
1. With adapter bushing in place on bearing of lower mechanism, place lower flange (flange with the 4 tapped holes) on to the lower mechanism. Secure with four flat head screws.



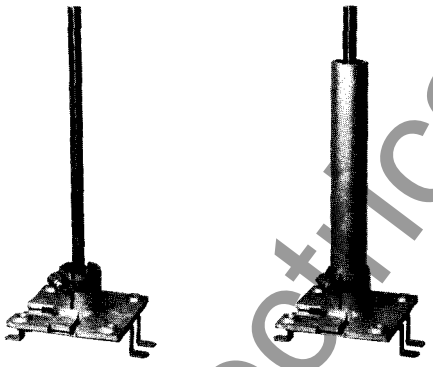
2. Place upper mechanism on upper flange (flange with 4 tapped holes) and secure with four flat head screws. Be sure latch on mechanism fits into elongated slot in flange.



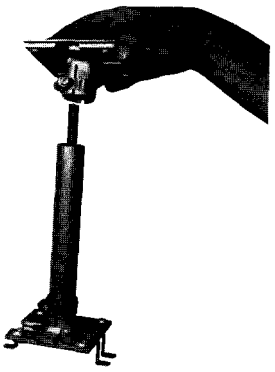
3. Cut square shaft to desired dimension. To do this subtract dimension "F" (see dimension chart) from "B" dimension which is the distance from the back of the breaker to inside of enclosure door.



4. Place pipe clamp on the collar of each flange. Do not tighten.

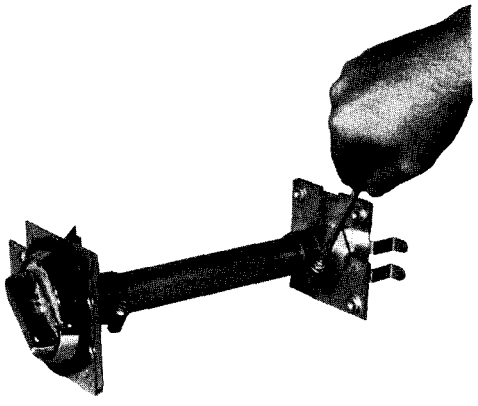


5. Place square shaft into bushing on lower mechanism and then place support pipe over this shaft and into collar of flange.

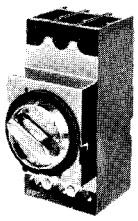


6. With both lower and upper mechanisms in "OFF" position (lower mechanism is "OFF" when square shaft is turned fully to the right) place upper mechanism on to support pipe. Make sure square shaft engages upper mechanism.

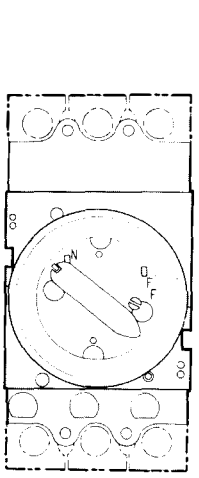
7. Lay assembly on flat surface (this will square assembly). If "B" dimension is the minimum, as shown on dimensional chart, tighten pipe clamps with support pipe seated fully into both flange collars. If "B" dimension is other than minimum, adjust support pipe so that approximately same amount of pipe is in each of the upper and lower flange collars. (A minimum of ½ inch of pipe must be in each flange collar). Tighten pipe clamps.



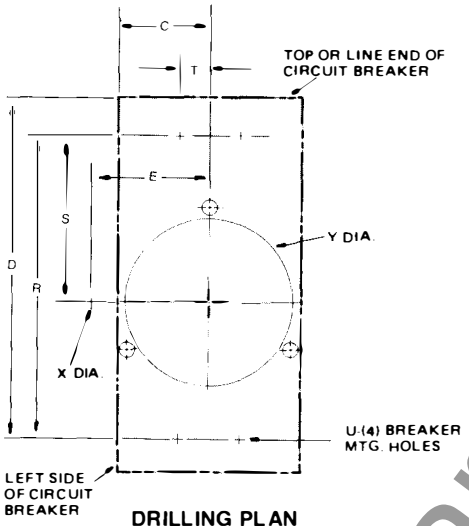
INSTRUCTIONS FOR I-T-E STANDARD-DEPTH ROTARY-HANDLE ENCLOSURE MECHANISM — F6RH1



OUTLINE DRAWING AND DRILLING PLAN



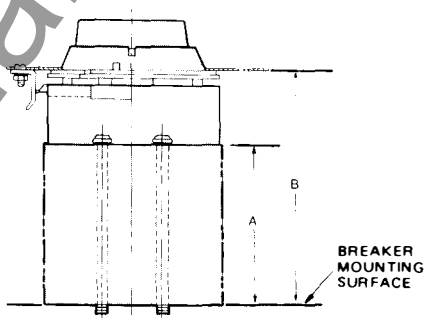
FRONT VIEW



DRILLING PLAN

DIMENSIONAL CHART

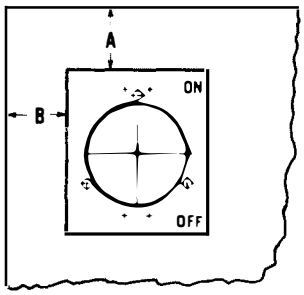
A	B	C	D	E	R	S	T	U	X	Y
4	$5^{13}/_{16}$	$2^1/_4$	$8^1/_2$	$2^{27}/_{32}$	$7^1/_2$	$4^1/_4$	$^3/_4$	$^1/_4$-20	.177	$3^7/_8$



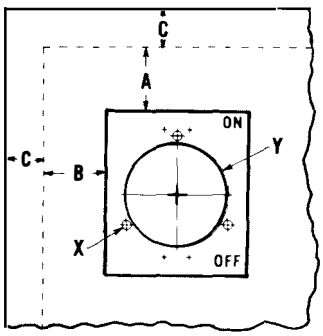
VIEW FROM LOAD END

DRILLING OF ENCLOSURE AND ENCLOSURE COVER

1. Drill four breaker mounting holes (U) per drilling plan on outline drawing.
2. Place template on breaker mounting surface so that the four centers in the template line up with the breaker mounting holes. Make sure "ON"-"OFF" indications on template are in same direction as "ON"-"OFF" indications on breaker. Use 2 breaker mounting screws to hold template in place.
3. Measure distances "A" and "B" from walls of enclosure. See Fig 1.
4. Relocate template on enclosure cover by adding enclosure thickness and cover overhang (C) to dimensions "A" and "B". See Fig. 2.
5. Remove backing from template and secure template on door.
6. Drill holes "X" (.375 diam.) and "Y" (4.12 diam.) on template.



Breaker Mounting Surface Fig. 1



Enclosure Cover Fig. 2

MOUNTING INSTRUCTIONS FOR I-T-E ROTARY-HANDLE ENCLOSURE MECHANISMS

Fig. 1

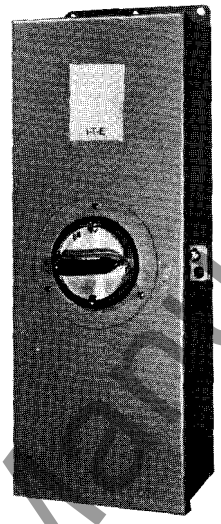


Fig. 2

VARIABLE-DEPTH ROTARY-HANDLE ENCLOSURE MECHANISM

1. With breaker in "OFF" position and rotary handle mechanisms in "OFF" position, mount mechanism on breaker using 4 screws (¼-20 x 4⅜). Make sure opening in mechanism lever engages breaker operating handle. Tighten screws.
2. Loosely secure the door rings with the 3 screws provided (6-32 x ¼). Position the interior ring (has the latch tabs and threaded holes) as shown in Fig. 1. The exterior ring mounts on the outside of the door with the small flange to the inside (as shown in Fig. 2).
3. Close enclosure door and adjust external ring on door so it is concentric with handle ring. Tighten the 3 screws.
4. Check door operation. Latch on mechanism should engage latch tab interior ring when breaker is "ON" and disengage latch tab when operating handle is rotated to "Open Door" position.
5. Enclosure door may be opened when breaker is "ON" by turning defeater screw clockwise.

STANDARD-DEPTH ROTARY-HANDLE ENCLOSURE MECHANISM

1. With breaker in "OFF" position and rotary handle mechanisms in "OFF" position, mount mechanism on breaker using 4 screws (¼-20 x 4¼). Make sure opening in mechanism lever engages breaker operating handle. Tighten screws.
2. Loosely secure the door rings with the 3 screws provided (6-32 x ¼). Position the interior ring (has the latch tabs and threaded holes) as shown in Fig. 1. The exterior ring mounts on the outside of the door with the small flange to the inside (as shown in Fig. 2).
3. Close enclosure door and adjust external ring on door so it is concentric with handle ring. Tighten the 3 screws.
4. Check door operation. Latch on mechanism should engage latch tab interior ring when breaker is "ON" and disengage latch tab when operating handle is rotated to "Open Door" position.
5. Enclosure door may be opened when breaker is "ON" by turning defeater screw clockwise.

INSTRUCTIONS FOR MOUNTING
I-T-E SIDE HANDLE OPERATOR – D11FLU

Add openings to enclosure flange as shown in Fig. 1. Weld interlock latch to inside of cover. Note: If vault handle kit is used, the interlock latch is not required and may be discarded. Refer to vault handle kit instruction sheet.

The handle mechanism and interlock mechanism are supplied preassembled. Before disassembling, note the position of the levers (Items A & B) of the interlock mechanism with respect to (Item C) of the handle mechanism in Fig. 2. Lever (A) must be placed in back of handle mechanism (Item C) and lever (B) in front. Care must be taken to insure this relationship is maintained when the device is reassembled.

Assemble handle mechanism from the outside of the enclosure. (Operating handle must be moved to the approximate middle of its stroke for ease of assembly.) Assemble mounting frame and interlock mechanism from inside of enclosure. When properly assembled the operating handle cannot be moved from the "Off" position to the "On" position while the cover is open.

Assemble Circuit breaker mounting plate to mounting frame with four ¼-20 screws supplied and provide end support as shown in Fig. 4 below. Mount Circuit Breaker operating mechanism and Circuit Breaker on mounting plate with four ¼-20 x 4-¼ long screws as shown in Fig. 3.

NOTE: Slot of rocker arm must engage roller of handle mechanism.

Nominal position (¼-20 screw) covers elongated slot of mechanism bracket, adjust if necessary.

Operation:

The handle cannot be moved from the "Off" position to the "On" position while the door is open, unless the Interlock mechanism is deliberately voided. This involves turning the screw in the handle housing counter-clockwise before moving the operating handle.

To open door while the handle is in the "On" position the same screw is turned clockwise.

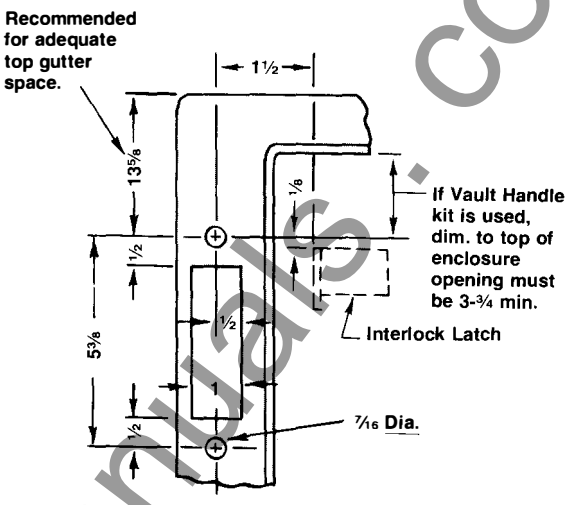


Fig. 1

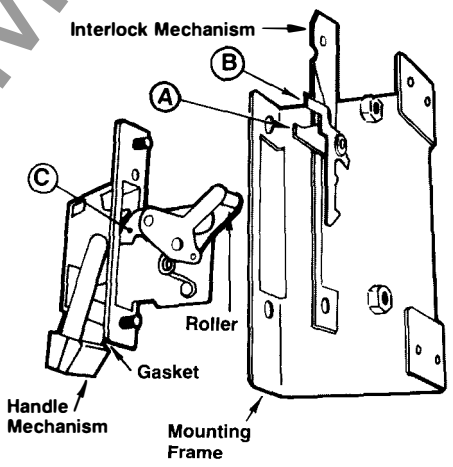


Fig. 2

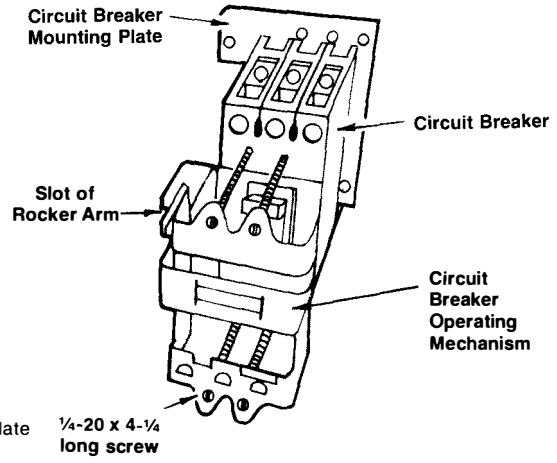


Fig. 3

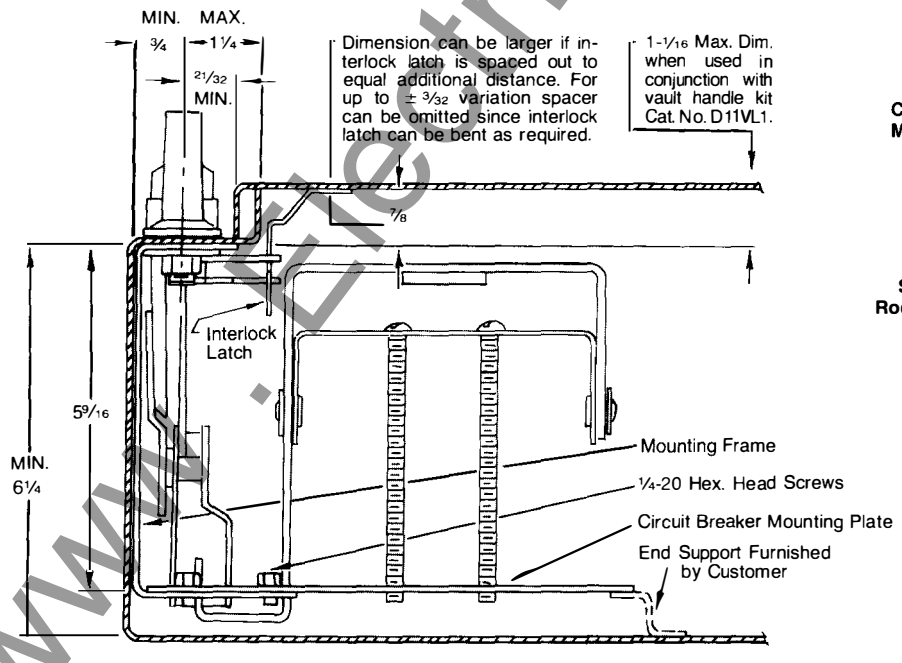


Fig. 4

INSTRUCTIONS FOR MOUNTING
I-T-E SIDE HANDLE OPERATOR – D11FRU

Add openings to enclosure flange as shown in Fig. 1. Weld interlock latch to inside of cover. Note: If vault handle kit is used, the interlock latch is not required and may be discarded. Refer to vault handle kit instruction sheet.

The handle mechanism and interlock mechanism are supplied preassembled. Before disassembling, note the position of the levers (Items A & B) of the interlock mechanism with respect to (Item C) of the handle mechanism in Fig. 2. Lever (A) must be placed in back of handle mechanism (Item C) and lever (B) in front. Care must be taken to insure this relationship is maintained when the device is reassembled.

Assemble handle mechanism from the outside of the enclosure. (Operating handle must be moved to the approximate middle of its stroke for ease of assembly.) Assemble mounting frame and interlock mechanism from inside of enclosure. When properly assembled the operating handle cannot be moved from the "Off" position to the "On" position while the cover is open.

Assemble Circuit breaker mounting plate to mounting frame with four ¼-20 screws supplied and provide end support as shown in Fig. 4 below. Mount Circuit Breaker operating mechanism and Circuit Breaker on mounting plate with four ¼-20 x 4-¼ long screws as shown in Fig. 3.

NOTE: Slot of rocker arm must engage roller of handle mechanism.

Nominal position (¼-20 screw) covers elongated slot of mechanism bracket, adjust if necessary.

Operation:

The handle cannot be moved from the "Off" position to the "On" position while the door is open, unless the Interlock mechanism is deliberately voided. This involves turning the screw in the handle housing clockwise before moving the operating handle.

To open door while the handle is in the "On" position the same screw is turned counter-clockwise.

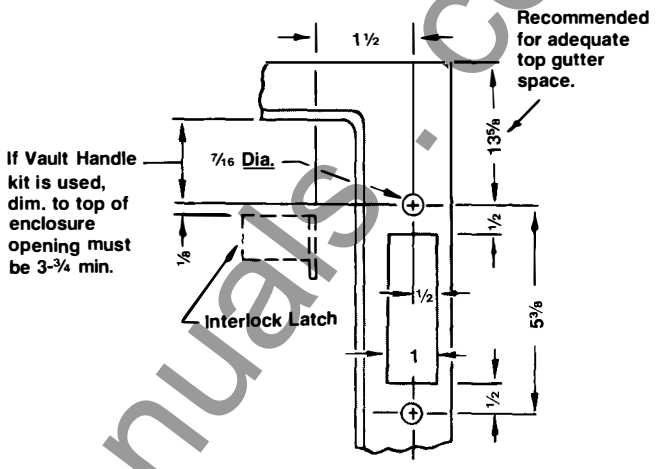


Fig. 1

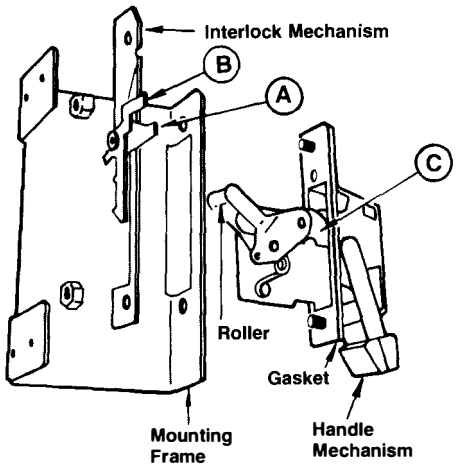


Fig. 2

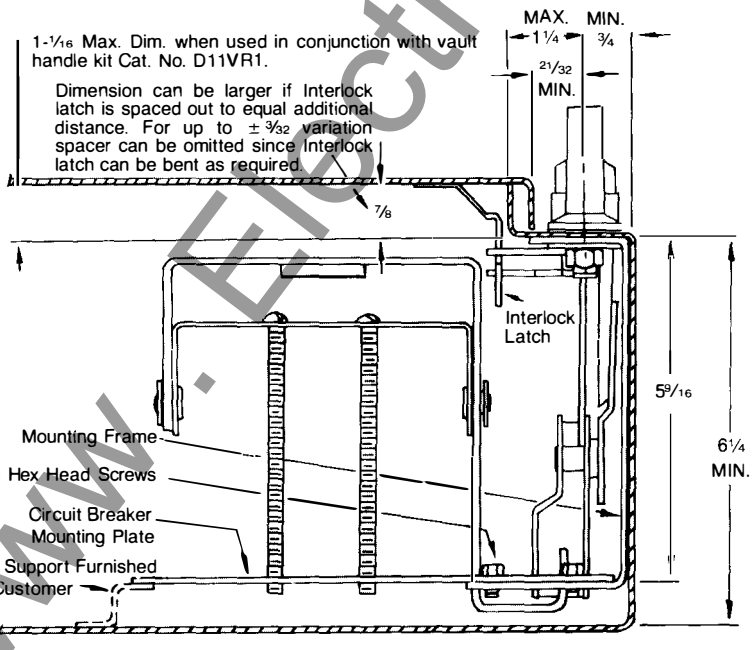


Fig. 4

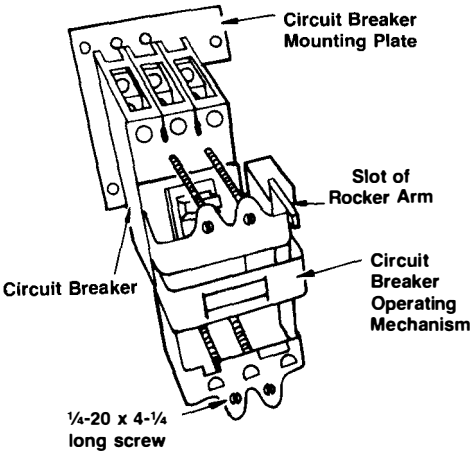
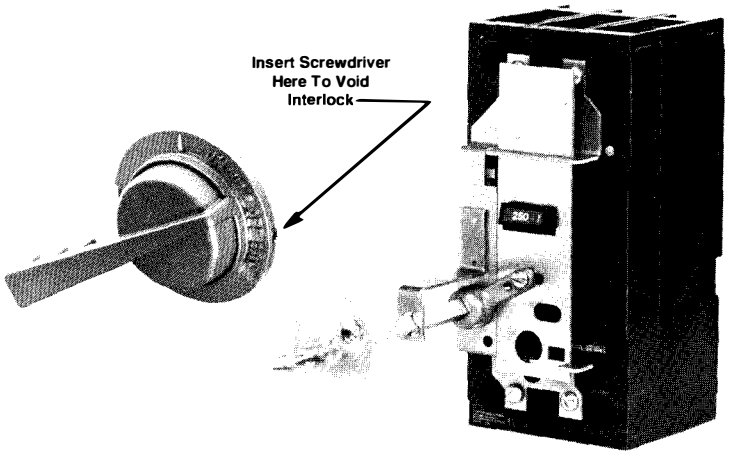
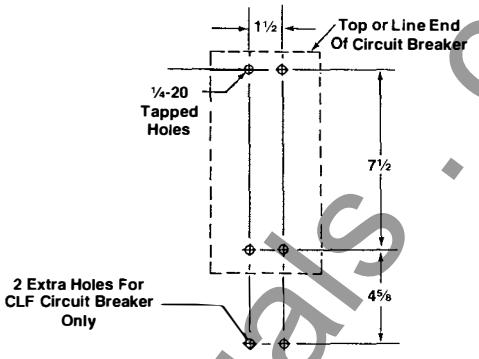
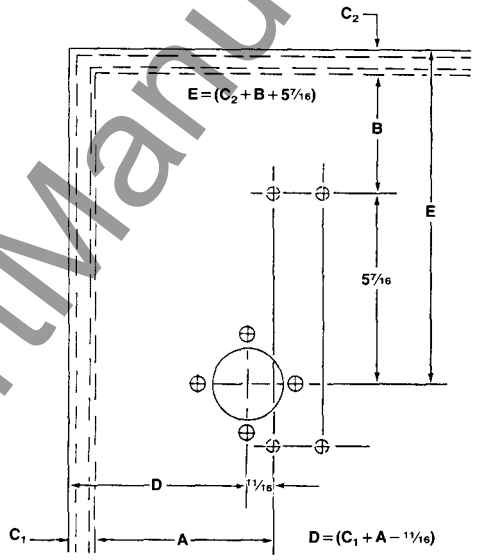


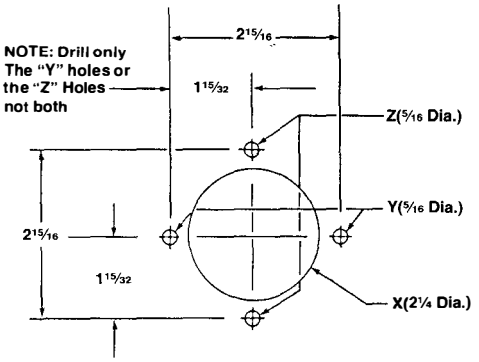
Fig. 3

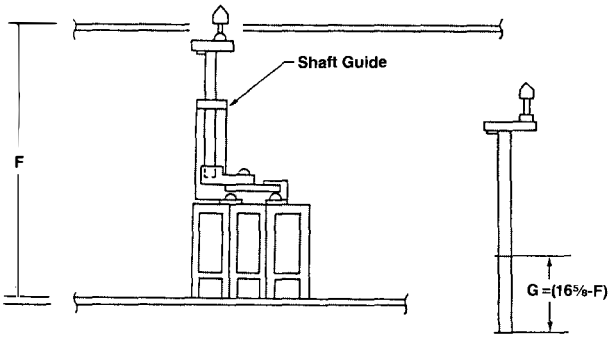
INSTRUCTIONS FOR
I-T-E VARIABLE DEPTH – D11CFU2 and STANDARD DEPTH – D11CFU1
ROTARY HANDLE ENCLOSURE MECHANISM











General Information

Handle will permit locking the disconnect device in the "OFF" position using up to three locks having shackles up to ⅜ inches in diameter. Provision for locking in "ON" position is provided, but the handle plate must have the material covering the locking notch removed. This can be done with a hacksaw or file. The handle has a voidable interlock. Voiding the interlock requires inserting a small screwdriver into the rectangular opening in the handle plate, which will release the handle.

Mounting Instructions

Drill and tap breaker mounting holes as shown. Two (2) additional holes may be required for CLF current limiting circuit breakers.

Measure distances "**A**" and "**B**" from mounting holes to walls of the enclosure.

Find handle center dimensions "**D**" and "**E**" by adding enclosure thickness and cover overhang "**C**" to "**A**" − 1 1/16 and "**B**" + 5 7/16. Drill hole "**X**" (2¼ dia.) and drill either holes "**Y**" or "**Z**" (5/16 dia.) depending on handle orientation required.

If installing variable depth kit, measure distance "**F**" from breaker mounting surface to outside of cover. If distance "**F**" is less than 8 inches then remove shaft guide bracket.

Find length "**G**" by subtracting "**F**" from 16⅝ inches. Mark length "**G**" from end of operating shaft and cut shaft squarely at mark.

Breaker must be "tripped" during installation. Push red button marked "Push to trip".

Using screws supplied with kit, attach mechanism plate to breaker and mount in enclosure in position shown.

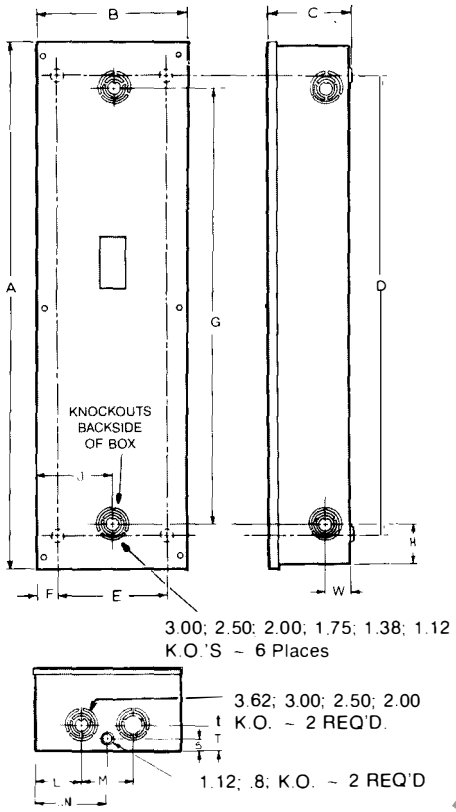
Insert end of operating shaft into square socket in cast operating arm so that top of shaft has proper relationship to handle. Tighten set screw in operating arm (Recommended Torque: 75 in. lb.)

Place handle and cork gasket on outside of cover and place handle mounting bracket on inside of cover; fasten together loosely through cover with the two short screws provided.

Adjust handle so that cover will not open when handle is in "OFF" position but will open when handle is between "OFF" and "RESET/OPEN" positions. Tighten Screws and operate handle "ON" and "OFF" to see that circuit breaker operates satisfactorily.

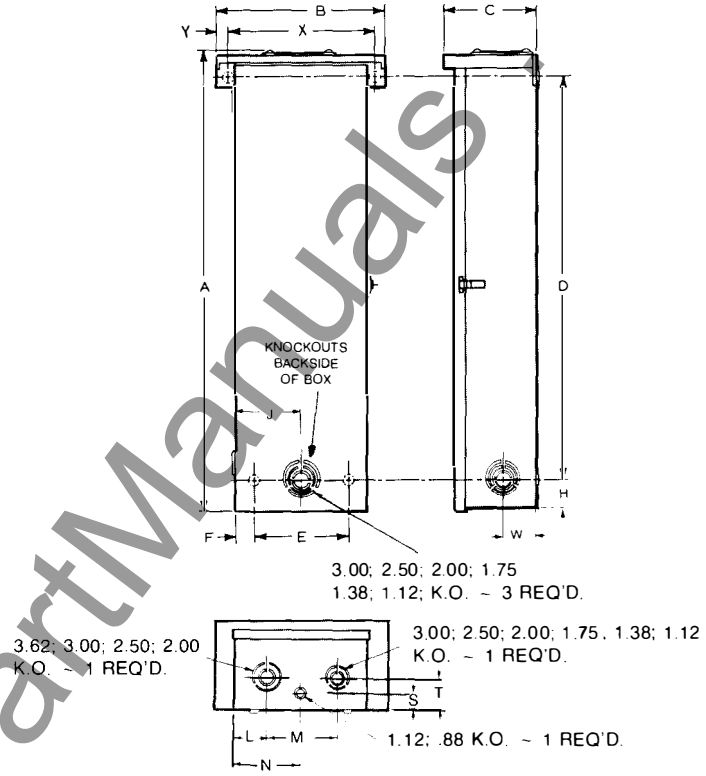
TYPE I — F6N1S

General purpose indoor, sheet-steel enclosure for use in normal atmosphere, listed as service-entrance equipment.



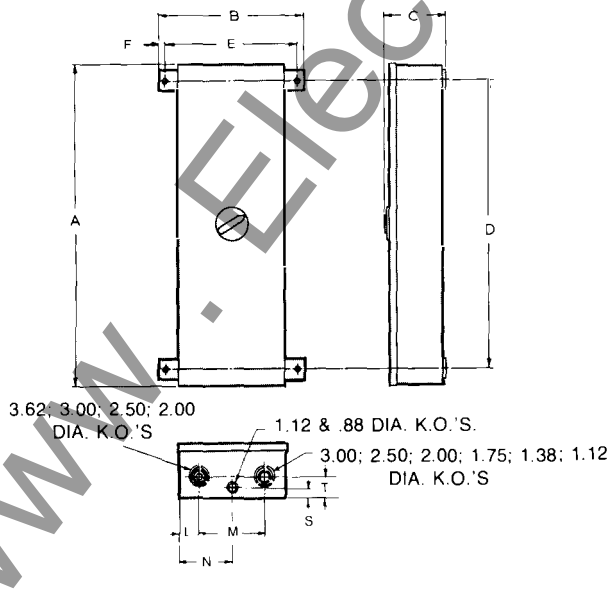
TYPE 3R — F6N3R

An outdoor, sheet-steel enclosure providing protection against driving rain, sleet or snow. Listed as service-entrance equipment.



TYPE 12K — F6N12K

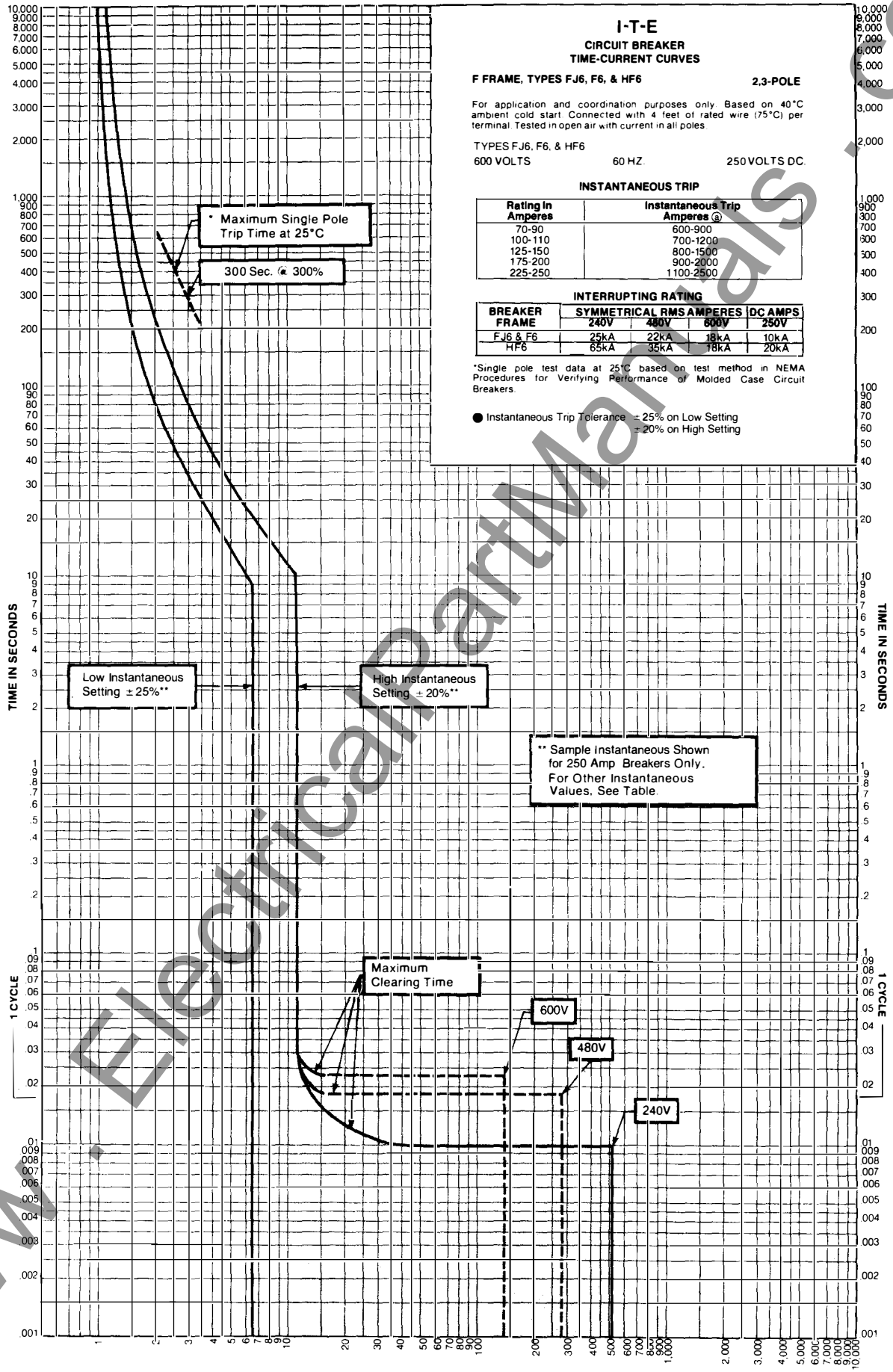
A special-industry, sheet-steel enclosure for indoor use in atmosphere containing particles of lint, dust, dirt, sawdust and other foreign matter.



ENCLOSURE DIMENSIONS — INCHES

REF.	CAT. NO.		
	F6N1S	F6N3R	F6N12K
A	38.4	38.6	38.6
B	11.5	14.1	14.2
C	5.1	7.8	7.0
D	33.0	33.3	34.0
E	8.0	8.0	13.0
F	1.56	1.56	.62
G	32.6	—	—
H	2.8	2.7	—
J	5.8	5.6	—
K	—	—	—
L	2.6	2.6	2.6
M	6.4	6.4	6.4
N	5.9	6.0	6.0
P	—	—	—
R	—	—	—
S	1.1	1.1	1.1
T	2.3	2.3	2.3
W	2.2	2.3	—
X	—	12.50	—
Y	—	.81	—

I-T-E TIME/CURRENT CURVES — F FRAME
600 VOLTS, 60 HZ, 250 VOLTS DC 70-250 AMPERES



I-T-E ORDERING INFORMATION
CIRCUIT BREAKER CATALOG NUMBERS

Breaker Frame	Ampere Rating	Instantaneous Trip Range Min.	Instantaneous Trip Range Max.	Complete Breaker Unenclosed Cat. No.	Frame Only Cat. No.	Trip Unit Only Cat. No.	UL Interrupting Ratings (kA) (RMS Symmetrical Amperes) VAC 120	120/240	240	277	480	600	VDC 125	250
FJ6 2 Pole ① 600V AC 250V DC	70	600	900	FJ62B070	Non-Interchangeable Trip				25		22	18		10
	80	600	900	FJ62B080					25		22	18		10
	90	600	900	FJ62B090					25		22	18		10
	100	700	1200	FJ62B100					25		22	18		10
	110	700	1200	FJ62B110					25		22	18		10
	125	800	1500	FJ62B125					25		22	18		10
	150	800	1500	FJ62B150					25		22	18		10
	175	900	2000	FJ62B175					25		22	18		10
	200	900	2000	FJ62B200					25		22	18		10
	225	1100	2500	FJ62B225					25		22	18		10
	250	1100	2500	FJ62B250					25		22	18		10
	250	Molded Case Switch ②		FJ62S250A										
	SHIPPING:			12 lbs. each.										
FJ6 3 Pole 600V AC	70	600	900	FJ63B070	Non-Interchangeable Trip				25		22	18		
	80	600	900	FJ63B080					25		22	18		
	90	600	900	FJ63B090					25		22	18		
	100	700	1200	FJ63B100					25		22	18		
	110	700	1200	FJ63B110					25		22	18		
	125	800	1500	FJ63B125					25		22	18		
	150	800	1500	FJ63B150					25		22	18		
	175	900	2000	FJ63B175					25		22	18		
	200	900	2000	FJ63B200					25		22	18		
	225	1100	2500	FJ63B225					25		22	18		
	250	1100	2500	FJ63B250					25		22	18		
	250	Molded Case Switch ②		FJ63S250A										
	SHIPPING:			12 lbs. each.										
F6 2 Pole ① 600V AC 250V DC	70	600	900	F62B070	F62F250	F62T070			25		22	18		10
	80	600	900	F62B080	F62F250	F62T080			25		22	18		10
	90	600	900	F62B090	F62F250	F62T090			25		22	18		10
	100	700	1200	F62B100	F62F250	F62T100			25		22	18		10
	110	700	1200	F62B110	F62F250	F62T110			25		22	18		10
	125	800	1500	F62B125	F62F250	F62T125			25		22	18		10
	150	800	1500	F62B150	F62F250	F62T150			25		22	18		10
	175	900	2000	F62B175	F62F250	F62T175			25		22	18		10
	200	900	2000	F62B200	F62F250	F62T200			25		22	18		10
	225	1100	2500	F62B225	F62F250	F62T225			25		22	18		10
	250	1100	2500	F62B250	F62F250	F62T250			25		22	18		10
	SHIPPING:			12 lbs. each.	9 lbs. each	3 lbs each								
F6 3 Pole 600V AC	70	600	900	F63B070	F63F250	F63T070			25		22	18		
	80	600	900	F63B080	F63F250	F63T080			25		22	18		
	90	600	900	F63B090	F63F250	F63T090			25		22	18		
	100	700	1200	F63B100	F63F250	F63T100			25		22	18		
	110	700	1200	F63B110	F63F250	F63T110			25		22	18		
	125	800	1500	F63B125	F63F250	F63T125			25		22	18		
	150	800	1500	F63B150	F63F250	F63T150			25		22	18		
	175	900	2000	F63B175	F63F250	F63T175			25		22	18		
	200	900	2000	F63B200	F63F250	F63T200			25		22	18		
	225	1100	2500	F63B225	F63F250	F63T225			25		22	18		
	250	1100	2500	F63B250	F63F250	F63T250			25		22	18		
	SHIPPING:			12 lbs. each.	9 lbs. each	3 lbs. each								
HF6 2 Pole ① 600V AC 250V DC	70	600	900	HF62B070	HF62F250	F62T070			65		35	22		20
	80	600	900	HF62B080	HF62F250	F62T080			65		35	22		20
	90	600	900	HF62B090	HF62F250	F62T090			65		35	22		20
	100	700	1200	HF62B100	HF62F250	F62T100			65		35	22		20
	110	700	1200	HF62B110	HF62F250	F62T110			65		35	22		20
	125	800	1500	HF62B125	HF62F250	F62T125			65		35	22		20
	150	800	1500	HF62B150	HF62F250	F62T150			65		35	22		20
	175	900	2000	HF62B175	HF62F250	F62T175			65		35	22		20
	200	900	2000	HF62B200	HF62F250	F62T200			65		35	22		20
	225	1100	2500	HF62B225	HF62F250	F62T225			65		35	22		20
	250	1100	2500	HF62B250	HF62F250	F62T250			65		35	22		20
	SHIPPING:			12 lbs. each.	9 lbs. each	3 lbs. each								
HF6 3 Pole 600V AC	70	600	900	HF63B070	HF63F250	F63T070			65		35	22		
	80	600	900	HF63B080	HF63F250	F63T080			65		35	22		
	90	600	900	HF63B090	HF63F250	F63T090			65		35	22		
	100	700	1200	HF63B100	HF63F250	F63T100			65		35	22		
	110	700	1200	HF63B110	HF63F250	F63T110			65		35	22		
	125	800	1500	HF63B125	HF63F250	F63T125			65		35	22		
	150	800	1500	HF63B150	HF63F250	F63T150			65		35	22		
	175	900	2000	HF63B175	HF63F250	F63T175			65		35	22		
	200	900	2000	HF63B200	HF63F250	F63T200			65		35	22		
	225	1100	2500	HF63B225	HF63F250	F63T225			65		35	22		
	250	1100	2500	HF63B250	HF63F250	F63T250			65		35	22		
	SHIPPING:			12 lbs. each	9 lbs. each	3 lbs. each								

① Two Pole Available in 3 Pole Width Only

② Includes Self Protecting Instantaneous Element.

SPECIAL NOTE: For 50°C application replace "B" letter in catalog number with the letter "M" for ordering purposes. If trip unit only is required, replace the letter "T" with the letter "W", for ordering purposes.

AUXILIARY SWITCH COMBINATIONS

Control Voltage		1 Auxiliary Switch	1 Alarm Switch & 1 Auxiliary Switch	2 Auxiliary Switches
AC	DC	Cat. No.	Cat. No.	Cat. No.
120		A01F62	C01F64	A02F62
208		A01F62	C01F64	A02F62
240		A01F62	C01F64	A02F62
277		A01F64	C01F64	A02F64
480		A01F64	C01F64	A02F64
600		—	—	—
	24	A01F62	C01F64	A02F62
	48	A01F62	C01F64	A02F62
	125	A01F62	C01F64	A02F62
	250	A01F62	C01F64	A02F62

UNDERVOLTAGE TRIP COMBINATIONS

Control Voltage		1 Undv. Trip	1 Undv. Trip & 1 Aux. Switch
AC	DC	Cat. No.	Cat. No.
120		U01F60	W01F64
208		U02F60	W02F64
240		U03F60	W03F64
277		U16F60	W16F64
480		U06F60	W06F64
600		U08F60	W08F64
	24	U13F60	W13F64
	48	U14F60	W14F64
	125	U10F60	W10F64
	250	U12F60	W12F64

ALARM SWITCH COMBINATIONS

Control Voltage		1 Alarm Switch	1 Alarm Switch & 1 Auxiliary Switch
AC	DC	Cat. No.	Cat. No.
120		B00F64	C01F64
208		B00F64	C01F64
240		B00F64	C01F64
277		B00F64	C01F64
480		B00F64	C01F64
600		—	—
	24	B00F64	C01F64
	48	B00F64	C01F64
	125	B00F64	C01F64
	250	B00F64	C01F64

SHUNT TRIP COMBINATIONS

Control Voltage		1 Shunt Trip
AC	DC	Cat. No.
120		S01F60
208		S02F60
240		S03F60
277		S15F60
480		S04F60
600		S06F60
	24	S07F60
	48	S09F60
	125	S11F60
	250	S13F60

ADDITIONAL ACCESSORIES

Item	Catalog No.	Item		Catalog No.
Door Mounted Rotary Operating Handle		Enclosures		
Standard Depth —		NEMA 1		F6N15
Interior Enclosure		NEMA 3R		F6N3R
Depth 5 13/16	D11CFU1	NEMA 12		F6N12
Variable Depth —		Padlocking Device		F6PL1
Interior Enclosure		Handle Blocking Device		F6HB1
Depth 5 13/16 to 16 5/8	D11CFU2	Mechanical Interlock		
Side Flange Mounting		Breaker Panel Mounted		MI5426
Right Hand — Minimum Enclosure		Breaker Plug-In Mounted		MI5443
Depth 5 9/16 (Flange to Back)	D11FRU	Handle Operators Enclosure		
Left Hand — Minimum Enclosures		Standard Depth Rotary		F6RH1
Depth 5 9/16 (Flange to Back)	D11FLU	Variable Depth Rotary	9″ Depth	F6RHV9
Rear Connecting Studs			7″ Depth	F6RHV7
Short Length	RS 4756		5″ Depth	F6RHV5
Long Length	RS 4755		3″ Depth	F6RHV3
Plug In Adapters				
2 Pole (2 Required Per Breaker)	PC 4753			
3 Pole (2 Required Per Breaker)	PC 4754			

I-T-E Item	UL File Number
Breakers	– E 10848
Terminal Connectors	– E 23615 (Sp)
Plug-in Connectors	– E 69435
Rear Studs	– E 69435
Internal Accessories	– E 69455
Shunt trips	
Undervoltage	
Aux. Switch	
Bellalarm	
Molded Case Switch	– E 68312
Enclosures	– E 10848
Connector Straps	– E 69435

Circuit Breaker Mounting Screws ¼-20 x 4.00″

PROCEDURES FOR VERIFYING PEFORMANCE OF MOLDED CASE CIRCUIT BREAKERS — AB2
National Electrical Manufacturers Association
2101 L Street N.W. Suite 300
Washington, DC 20037

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