

**SQUARE D®**Instruction Sheet
30072-303-52E
AUGUST 1990**CLASS 9422 TYPE RT 1 SERIES D
VARIABLE DEPTH OPERATING MECHANISM**

For Use With Square D Type MAL, MHL, MEL, MXL Circuit Breakers

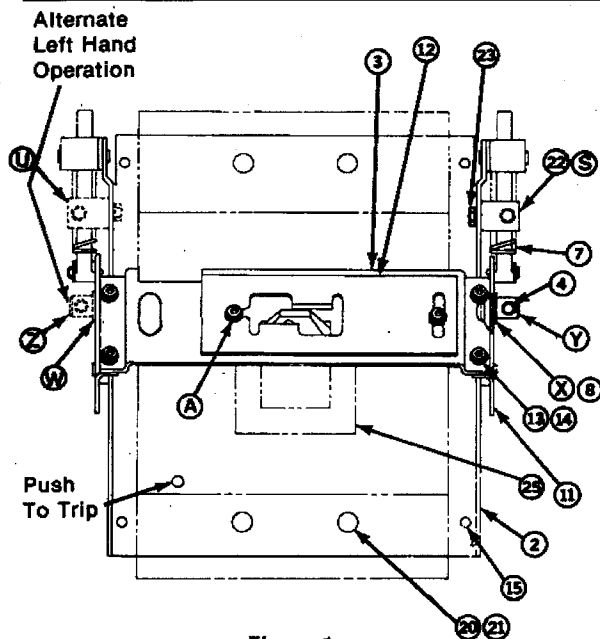


Figure 1

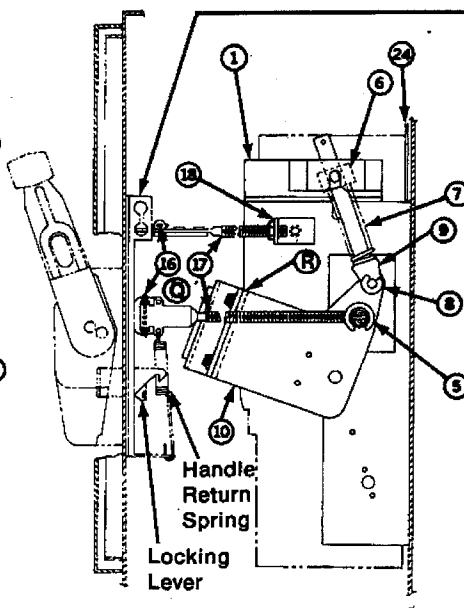
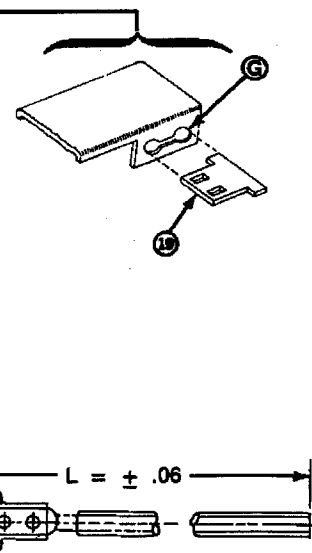


Figure 2

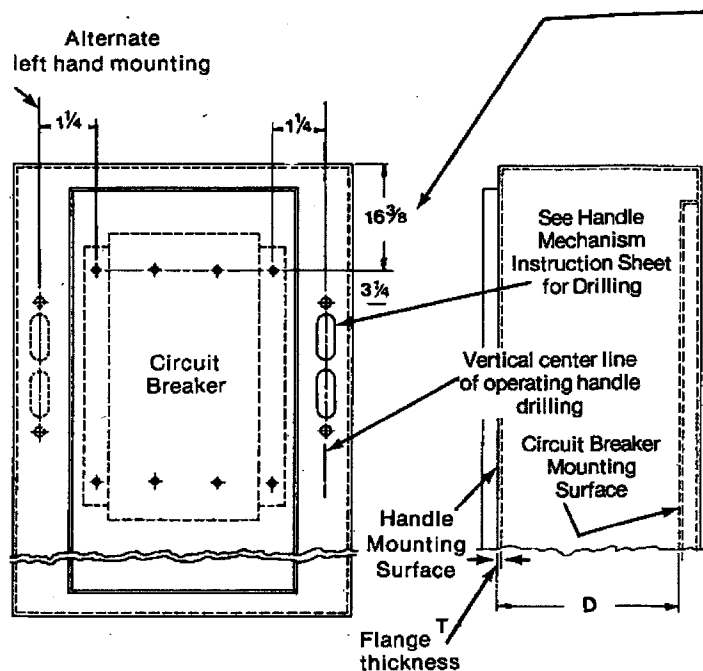
Figure 3
Operating Rod**DANGER** HAZARD OF ELECTRICAL SHOCK OR BURN. TURN OFF POWER SUPPLYING THIS EQUIPMENT BEFORE INSTALLING OR SERVICING.**INSTALLATION**

- Determine right or left hand operation. Operating Mechanism is assembled for right hand operation. Instructions for conversion from right hand to left hand operation are as follows: (Ref. Fig. 1).
 - Remove E ring, Item 5, at point X.
 - Move drive pin from position Y to Z.
 - Reassemble E ring at Point W.
- See Fig. 4 and 5 for location and drilling of holes.
- Cut (1) rod assembly, Item 17, for operating rod. Length $L = D - 3-3/16$. See Fig. 3 and 4.
- Cut (1) rod assembly, Item 17, for stiffener rod. Length $L = D - T - 4 5/8$. See Fig. 3 and 4.
- Mount stiffener bracket, Item 22, to Mounting Frame Assembly, Item 2, with (1) $1/4 - 20 \times 3/8$ screw, Item 23, in position S for right hand operation and in Position U for left hand operation.
- Thread operating rod (longer rod prepared in step 3 above) into drive pin TEN full turns and stiffener rod (shorter rod prepared in Step 4 above) with nut, Item 18, into stiffener bracket FIVE full turns.
- Secure Operating Mechanism Sub-assembly, Item 1, to mounting surface with screws, (4) $1/4 - 20 \times 1/2$ Item 15.
- With mechanism bail arm in ON position, remove bail arm, Item 3, which is held on by 4 screws, Item 13. (See Fig. 1). **CAUTION:** When moving mechanism keep hands free of mechanism during operation of device.
- Install circuit breaker as follows:
 - Move breaker toggle to "ON" position.
 - Attach adhesive backed, vinyl mask, Item 25, over "ON-OFF" markings on circuit breaker. See Fig. 1.
 - Remove lug covers.
 - Mount circuit breaker with line terminal cover, Item 24, as shown in Fig. 2.
 - Fasten circuit breaker and line terminal cover using screws, Item 20 and washers, Item 21.
 - Replace lug covers.
- Remove Adjustment Plate, Item 12, from Bail Arm Assembly, Item 3. Position Bail Arm Assembly, Item 3, so the circuit breaker toggle slips through the center hole. Secure with (4) screws, Item 13, as shown in Fig. 1. Mount Adjustment Plate, Item 12, so it is free to pivot in LOWER pivot hole at point "A" with screw and washer, Items 13 and 14.

- Push the adjustment plate up to contact circuit breaker toggle handle and locate appropriate mounting hole in the vertical sawtooth slot. Reinstall Items 13 and 14 (screw and washer removed in Step 10) and tighten down securely. **NOTE:** Avoid applying excessive pressure to the toggle lever of the circuit breaker, but keep in mind it is normal operation for the operating mechanism to maintain the toggle handle in the "RESET" position when the flange mounted handle is in the "OFF" position. Also, check point R to see if the operating mechanism bail arm is resting firmly against the mechanical stop with the toggle handle in the full "ON" position.
- Do not move circuit breaker and operating mechanism to OFF position until Steps 12 through 15 have been completed or circuit breaker toggle damage may result.
- Install handle mechanism per instruction sheet 30072-315-35. Mount handle stiffener bracket, Item 25, the same time handle is mounted. See Fig. 2.
- Insert stiffener coupling, Item 19, through side of handle stiffener bracket at Point G. See Fig. 2.
- Unscrew stiffener rod until it aligns with stiffener coupling and connect with cotter pin, Item 16. Tighten nut against stiffener bracket.
- Place operating handle in ON position and connect rod to handle linkage with cotter pin, Item 16, at point Q.

ADJUSTMENT

- Push insulated recessed Push-To-Trip button on front of circuit breaker with a pencil or other small tool. This will cause the circuit breaker to trip.
- Attempt to reset breaker by moving operating handle to OFF position. When reset, breaker will turn ON and OFF with an audible snap.
- NOTE:** If breaker does not reset, place handle in ON position and relocate adjustment plate and mounting screw to next lowest mounting hole and repeat the test as necessary until the circuit breaker resets and operates to ON and OFF positions.
- It may be necessary to turn threaded operating rod out one or two turns and reconnect handle linkage with cotter pins at Point Q. This adjustment must be made with the operating handle and breaker mechanism in ON position.
- Install handle return spring, Item 27, as shown in Fig. 2.



D = Distance from handle mounting surface to circuit breaker mounting surface.

D Minimum = 9

D Maximum = 18 3/8

Figure 4
Circuit Breaker Location

Minimum dimension from operating mechanism top mounting hole to wall or barrier to ensure adequate wire bending space when MAXIMUM wire size is used. Refer to NEC Article 430-10.

NOTE: 1/4-20 Tap must be extruded in 13 gauge and thinner.

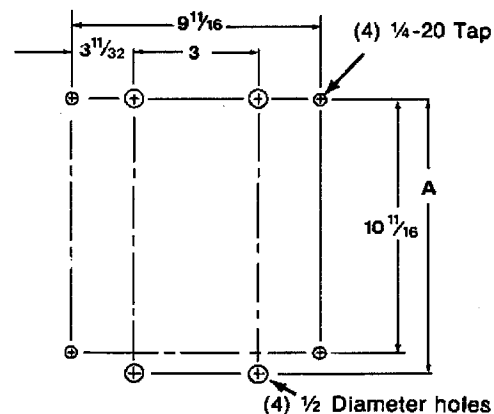


Figure 5
Drilling dimensions for MAL, MEL, MHL, MXL Circuit Breaker

Breaker Frame	Dimension A
MAL & MHL	10 11/16
MEL & MXL	11 7/16

REPLACEMENT PARTS LIST

Item	Description	Part no.	Qty.
1	Operating Mech. Sub-Assembly (Includes Items 2 - 15)	31004-430-52	1
2	Mtg. Frame Assy.	31004-308-50	1
3	Bail Arm Bar	31004-618-01	1
4	Drive Pin	31004-296-01	1
5	"E" Ring 5/8	29907-04010	1
6	Spring Seat	31004-241-01	2
7	Oper. Spring	50502-601-47	2
8	"E" Ring 3/8	29909-02410	4
9	Spring Guide	31004-237-02	2
10	R. Side Bail Arm Side Plate	31004-355-50	1
11	L. Side Bail Arm Side Plate	31004-355-51	1
12	Adjustment Plate	31004-420-01	2

Item	Description	Part No.	Qty.
13	Screw 1/4-20 x 1/2	21601-20160	6
14	Washer 1/4	23601-00200	2
15	Screw Assembly 1/4-20 x 1/2	21916-20160	4
16	Cotter Pin 1/8 x 1-1/4	24201-08400	2
17	Rod Assembly	Class 9422 Type R1	2
18	Nut 3/8-16	23002-00240	1
19	Stiffener Coupling	31055-168-01	1
20	Screw 5/16-18 x 4-1/2	21001-22831	4
21	Washer 5/16	23701-00200	4
22	Stiffener Bracket	31004-298-01	1
23	Screw Assembly 1/4-20 x 3/8	21926-20120	1
24	Insulator	30002-032-04	1
25	Vinyl Mask	30009-359-04	1

SQUARE D

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