



# Removal and Installation of Circuit Breaker Modification Kits (For Modifications To Bulletin 507, 507X, 513, 523E, 523F, 523G, 1233X Sizes 0, 1, 2, 3, 4 and 5, Enclosure Type 1, 3R/4/12, 4/4X and 4X) (Cat 1401-N60, -N61, -N62, -N63, -N64, -N65, -N66, -N68, -N69)

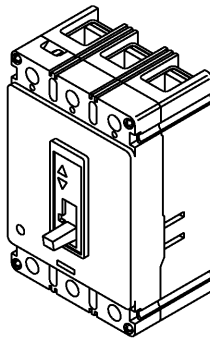


**ATTENTION:** To prevent electrical shock, disconnect from power source before installing or servicing. Install in suitable enclosure. Keep free from contaminants.

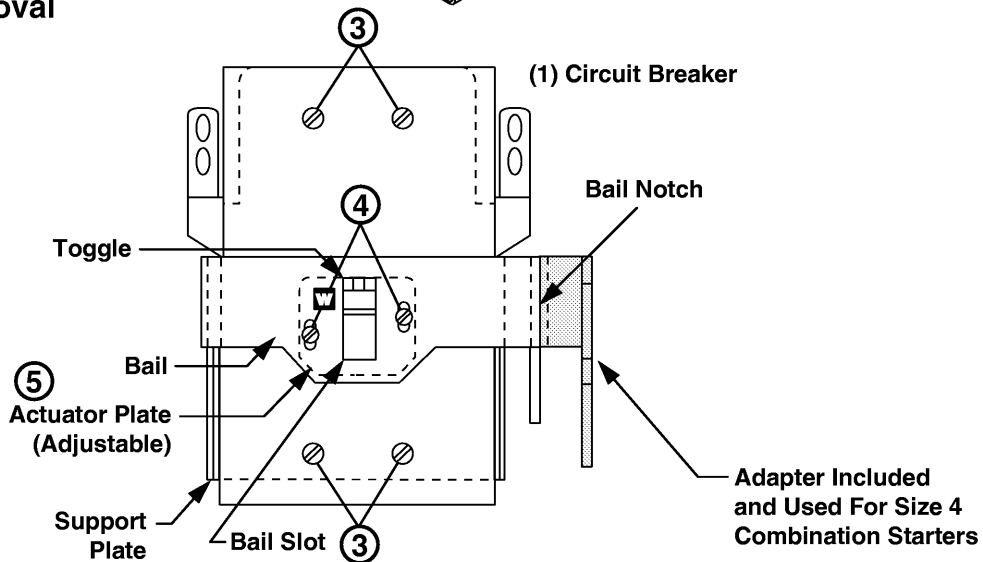
CIRCUIT BREAKER FIELD KIT CATALOG NUMBER	CIRCUIT BREAKER RATING	NEMA STARTER SIZE	HORSEPOWER RATING AND VOLTAGE				HORSEPOWER	CATALOG NO. SUFFIX*	HORSEPOWER	CATALOG NO. SUFFIX*
			200	230	460	575				
1401-N60	3 A	0 - 1	0 - 1/3	0 - 1/3	0 - 1	0 - 1	1/8	30	20	43
1401-N61	7 A	0 - 1	1/2 - 1	1/2 - 1	1 - 1/2 - 3	1 - 1/2 - 3	1/4	31	25	44
1401-N62	15 A	0 - 1	1 - 1/2 - 1	1 - 1/2 - 3	5 - 7 - 1/2	5 - 7 - 1/2	1/3	32	30	45
1401-N63	30 A	1 - 2	5	5 - 7 - 1/2	10 - 15	10 - 15	1/2	33	40	46
1401-N64	50 A	1 - 3	7 - 1/2 - 10	10	20 - 25	20 - 30	3/4	34	50	47
1401-N65	100 A	2 - 4	15 - 25	15 - 25	30 - 50	40 - 60	1	35	60	48
1401-N66	150 A	3 - 4	30	30 - 40	60 - 75	75 - 100	1 - 1/2	36	75	49
1401-N68	250 A	5	40	50	100	125	2	37	100	50
1401-N69	250 A	5	50 - 60	60 - 75	125 - 150	150 - 200	3	38	125	51
							5	39	150	52
							7 - 1/2	40	175	53
							10	41	200	54
							15	42		

\* CATALOG NUMBER SUFFIX IS DETERMINED BY THE MAXIMUM HORSEPOWER RATING AND VOLTAGE FOR THE COMBINATION STARTER SIZE

## 150 A. Frame Cutler-Hammer/Westinghouse Circuit Breaker (Catalog Number 1401-N60.....-N66)



### 150 A. Frame Removal



**Note:** Circuit breaker requires (4) mounting screws to be re-used from the existing Circuit Breaker Installation in the Combination Starter.

- ① Move the disconnecting means handle on the combination starter to the ON position.
- ② Label and remove the power wires from the circuit breaker load terminals.
- ③ Remove the (4) screws holding the circuit breaker to the operating mechanism and combination starter mounting plate.

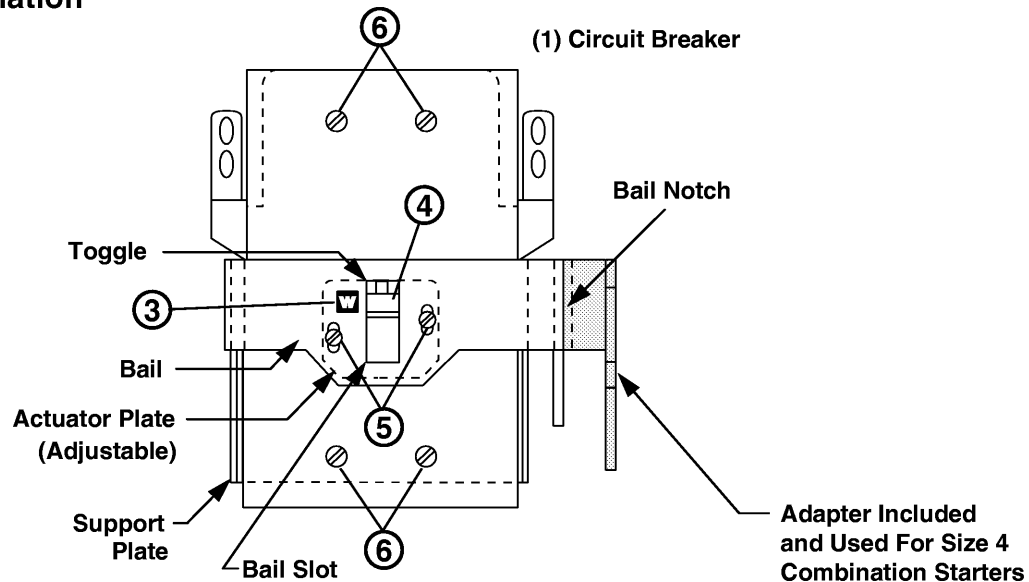
**Note:** Save the (4) mounting screws - they will be used to install the new circuit breaker.

- ④ Remove the (2) screws holding the actuator plate to the bail mechanism.

**Note:** Save the (2) screws - they will be used to install the new circuit breaker.

- ⑤ Remove the circuit breaker and the actuator plate by sliding it from beneath the bail mechanism.
- ⑥ Remove the actuator plate.

## 150 A. Frame Installation



① Move the disconnecting means handle on the combination starter to the ON position.

② Lift the circuit breaker toggle to the ON position.

③ Place the actuator plate over the circuit breaker toggle, so the "W" appears to the left of the toggle.

**Note: Only Cutler-Hammer/Westinghouse HMCP circuit breakers can be used in Allen-Bradley combination starters.**

④ Tilt the bail of the operating mechanism toward the ON position and slide the circuit breaker and actuator plate underneath the bail, allowing the circuit breaker toggle to enter the bail slot.

⑤ Insert the (2) screws (retained from the removal procedure) into the bail and actuator plate. Position the actuator plate so the screws are centered in the adjustment slots; tighten to the specified torque value (25 - 30 lb-in).

⑥ Align the circuit breaker and operating mechanism mounting holes with the holes on the combination starter mounting plate and insert the (4) mounting screws (retained from the removal procedure).

**Note: Insure that the ear on the drive mechanism bellcrank engages the bail notch (Sizes 0-3). The roller on the drive mechanism bellcrank engages the notch on the adapter (Size 4).**

⑦ Tighten the (4) mounting screws to the specified torque value (16 - 20 lb-in).

**Note: It may be necessary to lift the operating handle slightly to engage the mounting screws and the ear on the drive mechanism bellcrank into the bail notch or the roller into the adapter notch.**

## 150 A. Frame Testing

① Verify that the circuit breaker can be turned off by moving the disconnecting means handle to the OFF position.

**Note: If not, repeat steps 1-7 of the installation procedures.**

② Verify that the circuit breaker can be turned on by moving the defeater lever downward and moving the disconnecting means to the ON position.

③ If the circuit breaker does not turn on, loosen the (2) screws on the bail mechanism and adjust the actuator plate toward the line terminals until the circuit breaker will turn on when the disconnecting means handle is in the ON position.

④ Tighten the (2) actuator plate screws to the specified torque value. (25 - 30 lb-in)

⑤ Verify that the circuit breaker can be turned ON, tripped, and reset.

⑥ Manually trip the circuit breaker while in the ON position, then move the disconnecting means handle to the OFF-RESET position.

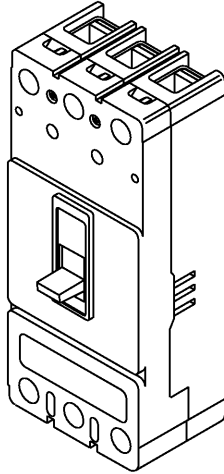
⑦ If the circuit breaker does not reset, loosen the (2) screws and adjust the actuator plate in small increments toward the load terminals. Retighten to the specified torque. (25 - 30 lb-in)

**Note: Repeat this procedure until the circuit breaker can be reset.**

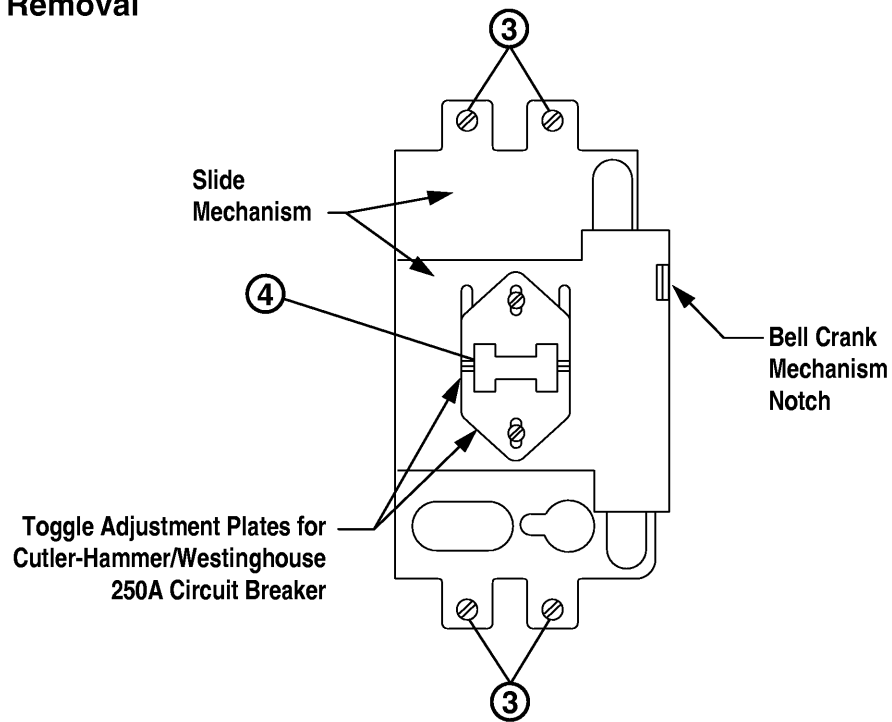
**Note: Do not adjust the actuator plate too far; this will prevent the disconnecting means handle from moving to the full OFF-RESET position.**

⑧ Connect the wires from the starter to the circuit breaker that were removed in Step 2 of the removal process. Insure that the wires are inserted into the correct phase. Tighten the screws on the circuit breaker lugs to the torque shown on the label affixed to the circuit breaker.

## 250 A. Cutler-Hammer/Westinghouse Circuit Breaker (Catalog Number 1401-N68, -N69)

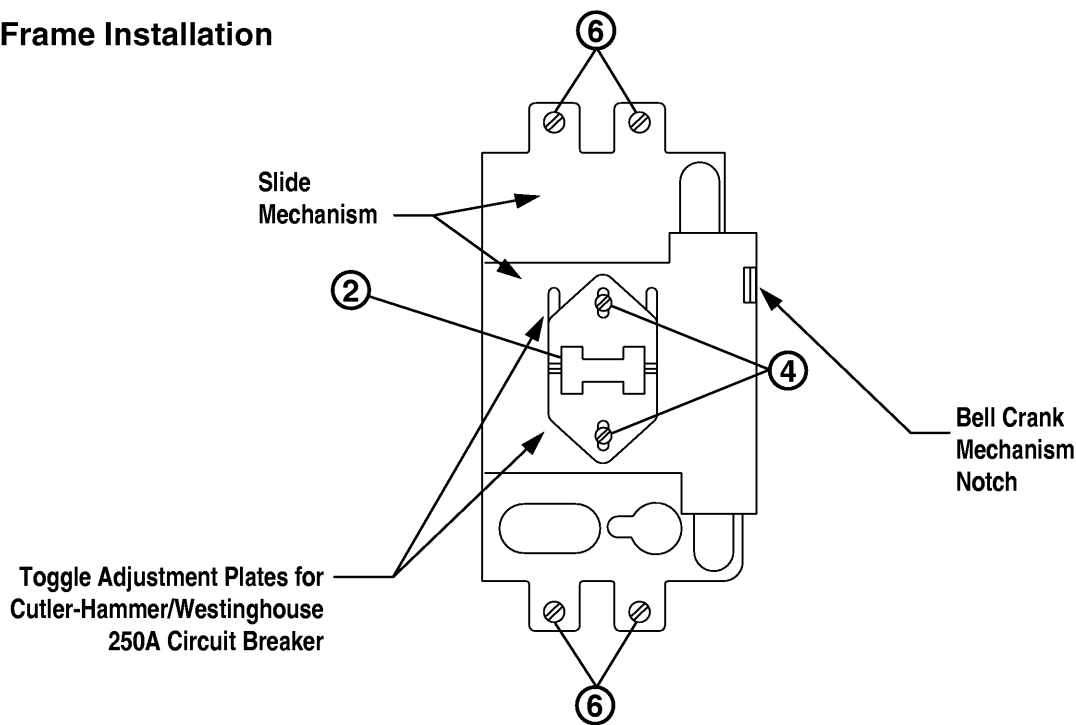


### 250 A. Frame Removal



- ① Move the disconnecting means handle on the combination starter to the ON position.
- ② Label and remove the power wires from the circuit breaker load terminals.
- ③ Remove the (4) screws holding the circuit breaker to the operating mechanism and combination starter mounting plate.  
**Note: Save the (4) mounting screws - they will be used to install the new circuit breaker.**
- ④ Remove the slide mechanism from atop the circuit breaker.

## 250 A. Frame Installation



- ① Move the disconnecting means handle on the combination starter to the OFF position.
  - ② Place the slide mechanism on top of the circuit breaker, so the circuit breaker toggle is exposed.
- Note: Only Cutler-Hammer/Westinghouse HMCP circuit breakers can be used in Allen-Bradley combination starters.**
- ③ The slot in the slide mechanism must engage the roller ear of the bell crank mechanism.
  - ④ Position the (2) screws in the center of the slot on the toggle adjustment plates and tighten to the specified torque value (if they were removed). (25 - 30 lb-in)
  - ⑤ Align the operating mechanism and the circuit breaker mounting holes with the holes on the combination starter mounting plates and insert the (4) mounting screws (retained from the removal procedure).
  - ⑥ Tighten the (4) mounting screws to the specified torque value. (40 - 50 lb-in)

## 250 A. Frame Testing

- ① Verify that the circuit breaker can be turned off by moving the disconnecting means handle to the OFF position.
- Note: If not, repeat steps 1-6 of the installation procedures.**
- ② Verify that the circuit breaker can be turned on by moving the defeater lever downward and moving the disconnecting means to the ON position.
  - ③ If the circuit breaker does not turn on, loosen the screw and adjust the lower toggle adjustment plate toward the line terminals until the circuit breaker will turn on when the disconnecting means handle is in the ON position. (The upper adjustment plate may also require adjustment).
  - ④ Tighten the (2) toggle adjustment plates screws to the specified torque value. (40 - 50 lb-in)
  - ⑤ Verify that the circuit breaker can be turned ON, tripped, and reset.
  - ⑥ Manually trip the circuit breaker while in the ON position, then move the disconnecting means handle to the OFF-RESET position.
  - ⑦ If the circuit breaker does not reset, loosen the screw and adjust the upper toggle adjustment plate in small increments toward the load terminals. (The lower adjustment plate may also require adjustment).
- Note: Repeat this procedure until the circuit breaker can be reset.**
- Note: Do not adjust the toggle adjustment plates too far; this will prevent the disconnecting means handle from moving to the full OFF-RESET position.**
- ⑧ Tighten the adjustment plates screw to the specified torque (40 - 50 lb-in).
  - ⑨ Connect the wires from the starter that were removed in Step 2 of the removal process. Insure that the wires are inserted into the correct phase. Tighten the screws on the circuit breaker lugs to the torque shown on the label affixed to the circuit breaker.