

**Bulletin 1494V Variable Depth, Flange Operated Circuit Breaker Operating Mechanisms****For use with Circuit Breakers 140G-G, 140MG-G, 140G-H, 140MG-H, 140G-I, 140MG-I, 140G-J, 140MG-J, 140G-K, 140MG-K, 140G-M, 140MG-M, 140G-N, 140MG-N**

(Cat 1494V-M70; 1494V-M71; 1494V-M72)

**WARNING:** To prevent electrical shock, disconnect from power source before installing or servicing. Follow NFPA 70E requirements. Install in suitable enclosure. Keep free from contaminants.

Installation, adjustments, putting into service, use, assembly, disassembly, and maintenance shall be carried out by suitably trained personnel in accordance with applicable code of practice. In case of malfunction or damage, no attempts at repair should be made. The product should be returned to the manufacturer for repair. Do not dismantle the product.

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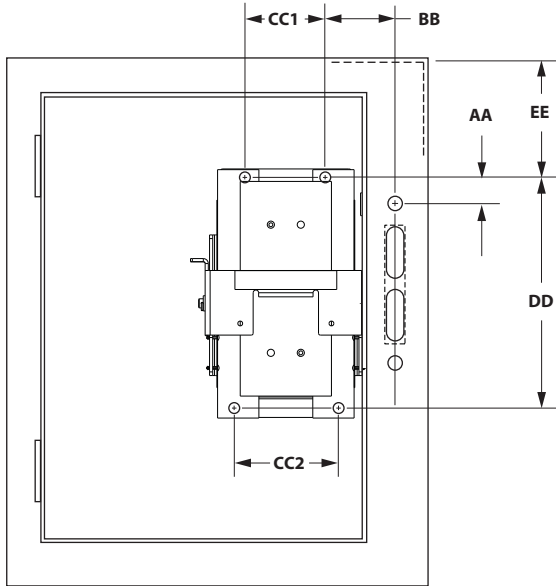
Enclosure without Handle Cutout

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Accessory List**15**

Enclosure with Handle Cutout

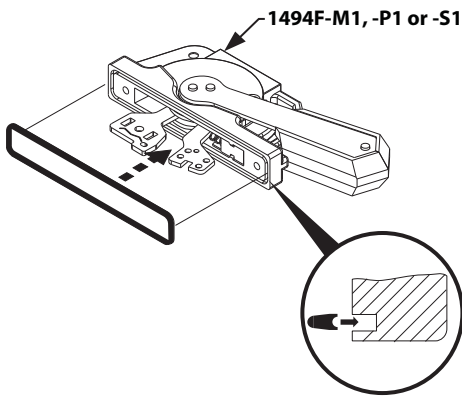
1 Locate Circuit Breaker Mechanism



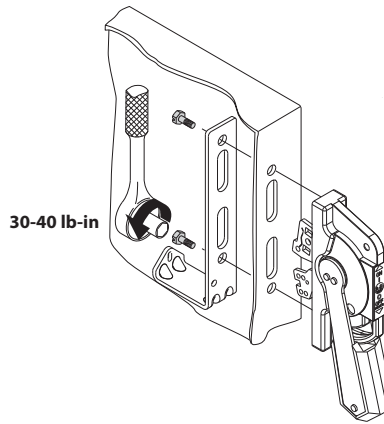
Frame Size	AA	BB	CC1	CC2	DD	EE Wire Bending Space
140G-G / 140MG-G 140G-H / 140MG-H 140G-I / 140MG-I 140G-J / 140MG-J	5/16"	1 - 41/64"	3"	3 - 1/2"	7 - 1/2"	6"
140G-K / 140MG-K	29/64"	1 - 47/64"	4"	4 - 1/2"	9 - 5/16"	12"
140G-M / 140MG-M	4 - 1/2"	4 - 1/32"	5"	5"	13 - 1/2"	12"
140G-N / 140MG-N	4 - 1/2"	4 - 1/32"	5"	5"	13 - 1/2"	12"

2 Handle Installation

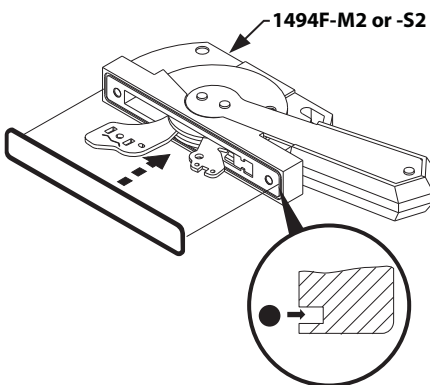
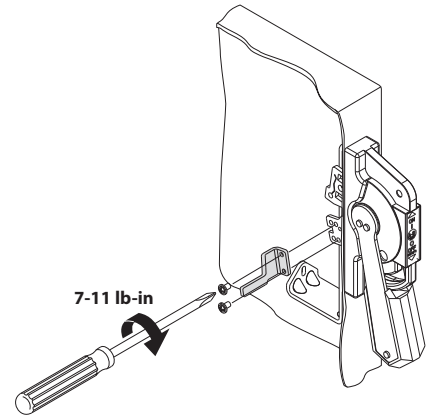
1 Install gasket.



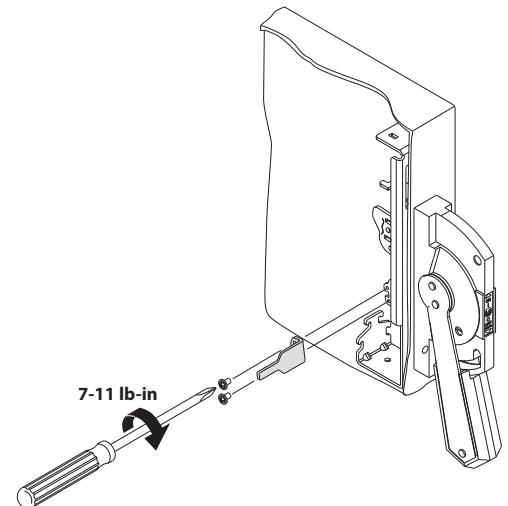
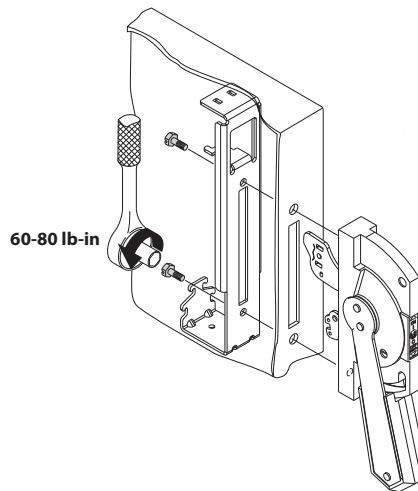
2 Install handle and spring bracket.



3 Install defearer lever.

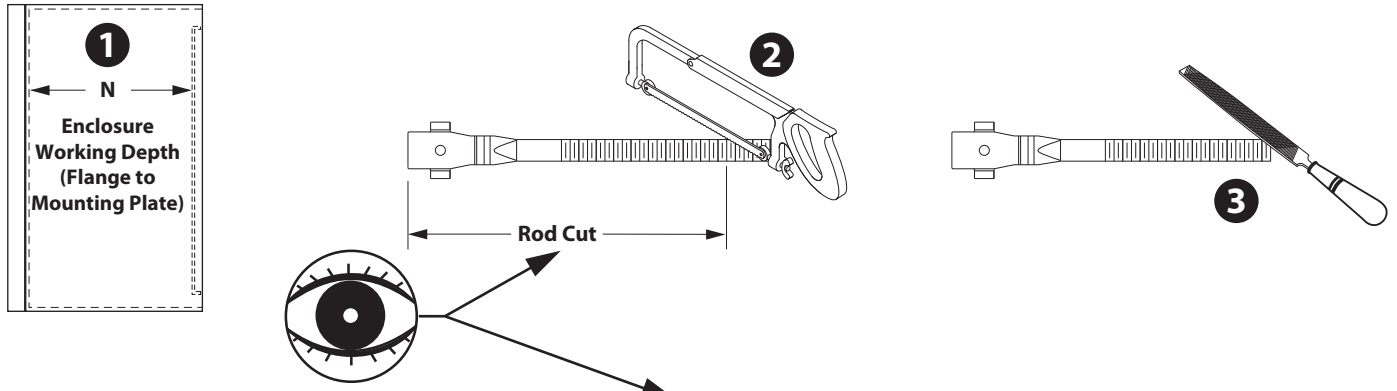


IMPORTANT: Apply grease to O-Ring to retain into handle groove.



Enclosure with Handle Cutout (Cont'd)

3 Cut Connecting Rod



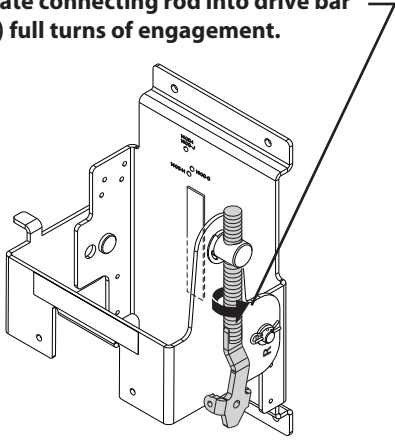
Connecting Rod Catalog Number	Circuit Breaker Mechanism	Circuit Breaker Frame	Rod Cut
1494V-RA4	1494V-M70	140G-G / 140MG-G 140G-I / 140MG-I	N - 3-1/2"
		140G-H / 140MG-H 140G-J / 140MG-J	N - 4"
	1494V-M71	140G-K / 140MG-K	N - 4-1/2"
1494V-RB4	1494V-M72	140G-M / 140MG-M 140G-N / 140MG-N	N - 3-3/4"

Circuit Breaker Installation

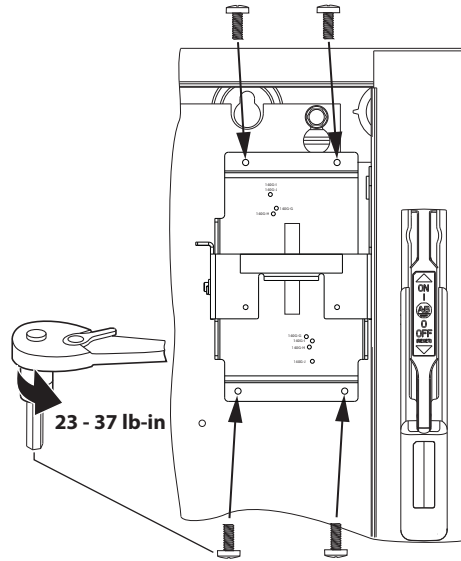
4a 140G-G; 140MG-G; 140G-I; 140MG-I

1 Verify that the disconnect handle and toggle on the circuit breaker are in the "OFF" position.

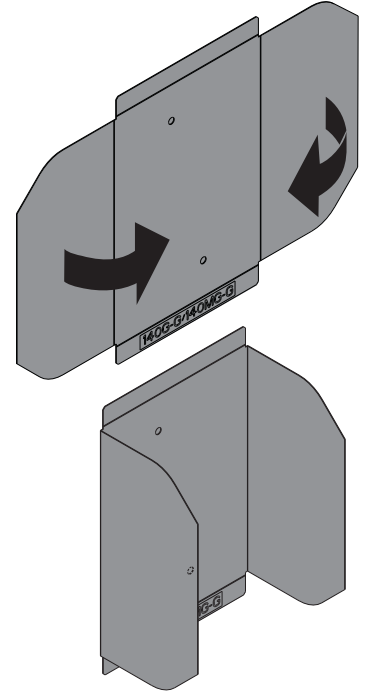
2 Rotate connecting rod into drive bar (10) full turns of engagement.



3 Install circuit breaker operating mechanism into panel.



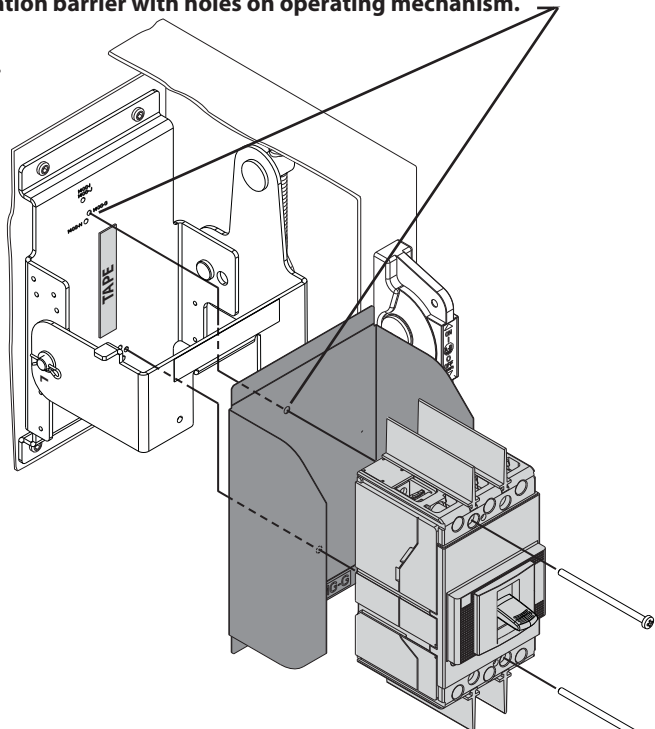
4 Choose proper insulation barrier as labeled. Bend side panels of insulation barrier inward.



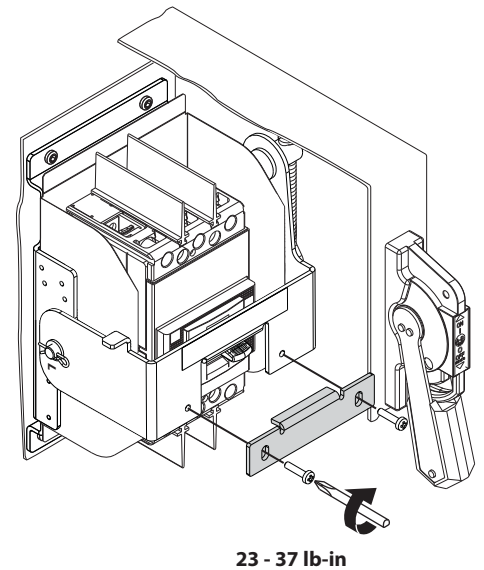
5 Remove liner from two-sided tape.

6 Align holes on insulation barrier with holes on operating mechanism.

7 Press firmly in place.



9 Attach toggle adjustment plate.



8 Install circuit breaker onto insulation barrier and mechanism.



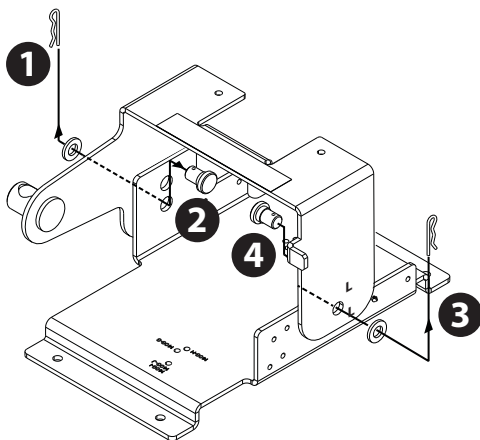
Go to Page 11 to assemble connecting rod and springs to handle

Circuit Breaker Installation (Cont'd)

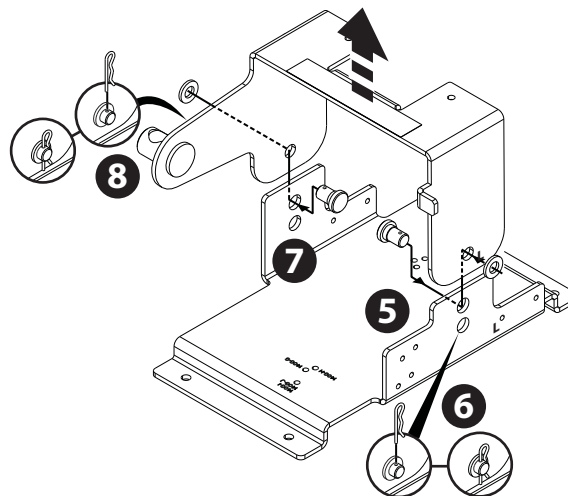
4b 140G-H; 140MG-H; 140G-J; 140MG-J

Reposition bail mechanism

Removal



Installation

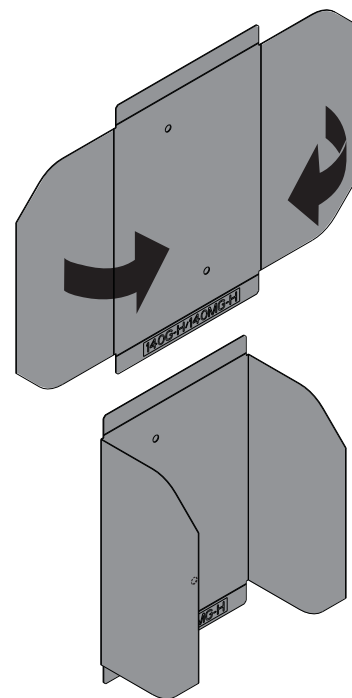
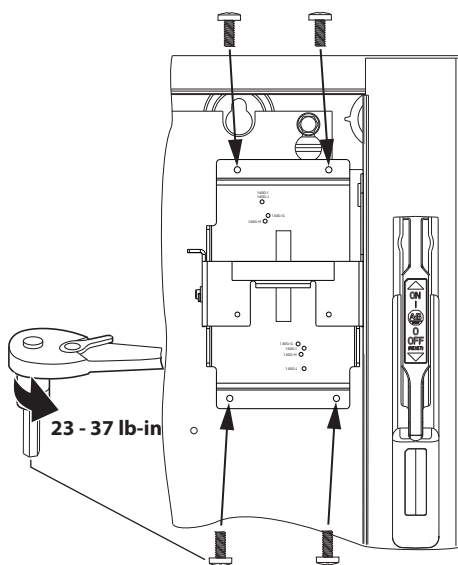
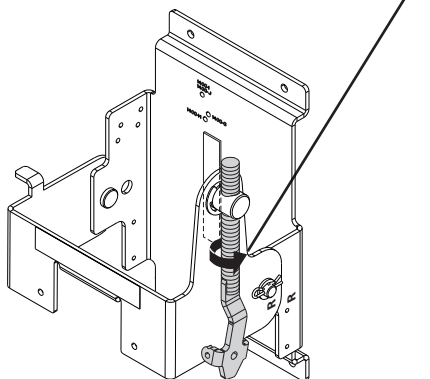


9 Verify that the disconnect handle and toggle on the circuit breaker are in the "OFF" position.

11 Install circuit breaker operating mechanism into panel.

12 Choose proper insulation barrier as labeled. Bend side panels of insulation barrier inward.

10 Rotate connecting rod into drive bar (10) full turns of engagement.



Circuit Breaker Installation (Cont'd)

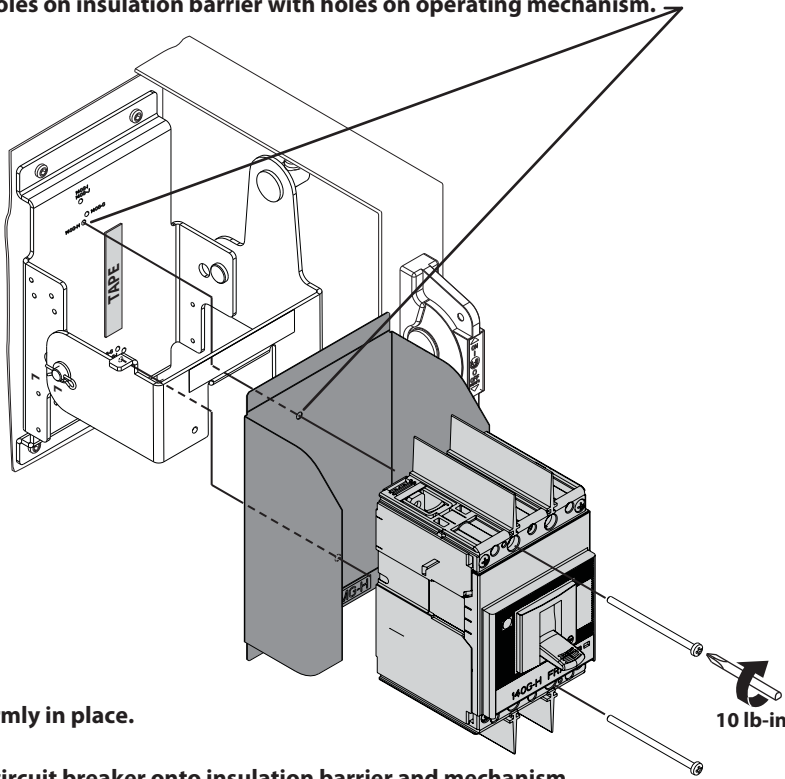
4b 140G-H; 140MG-H; 140G-J; 140MG-J

Cont'd

13 Remove liner from two-sided tape.

14 Align holes on insulation barrier with holes on operating mechanism.

17 Attach toggle adjustment plate



15 Press firmly in place.

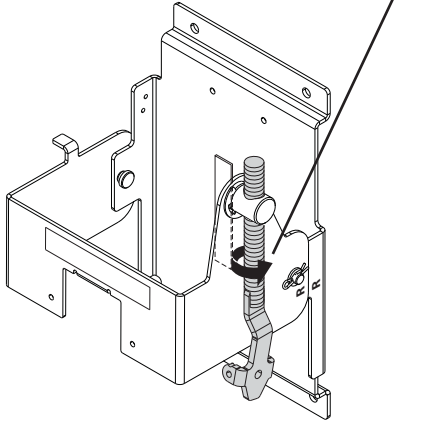
16 Install circuit breaker onto insulation barrier and mechanism.

Go to Page 11 to assemble connecting rod and springs to handle

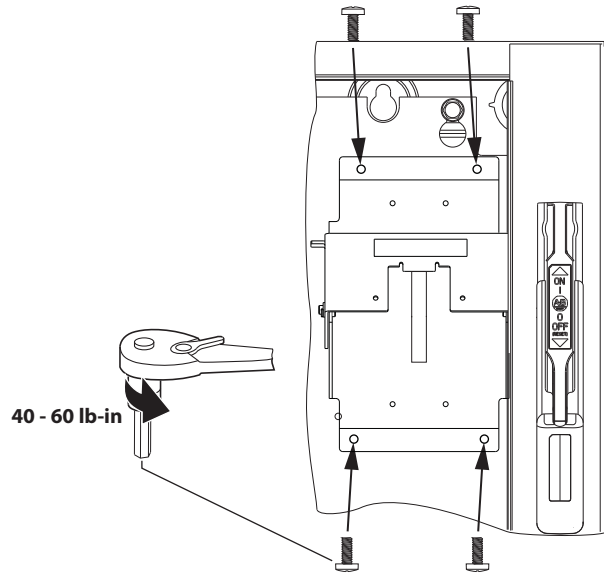
Circuit Breaker Installation (Cont'd)

4c 140G-K; 140MG-K

- 1** Verify that the disconnect handle and toggle on the circuit breaker are in the "OFF" position.
- 2** Rotate connecting rod into drive bar (10) full turns of engagement.

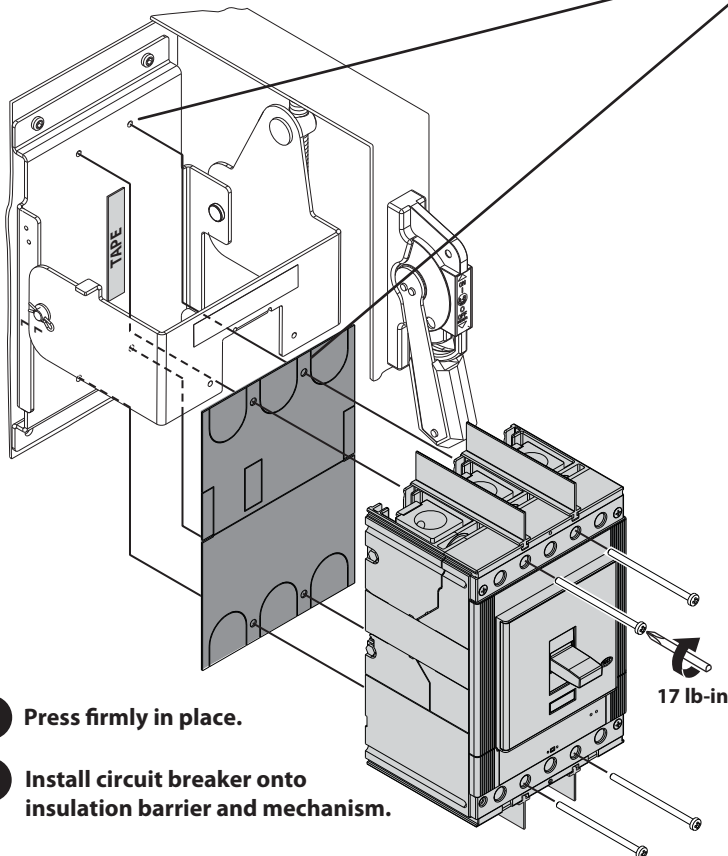


- 3** Install circuit breaker operating mechanism into panel.

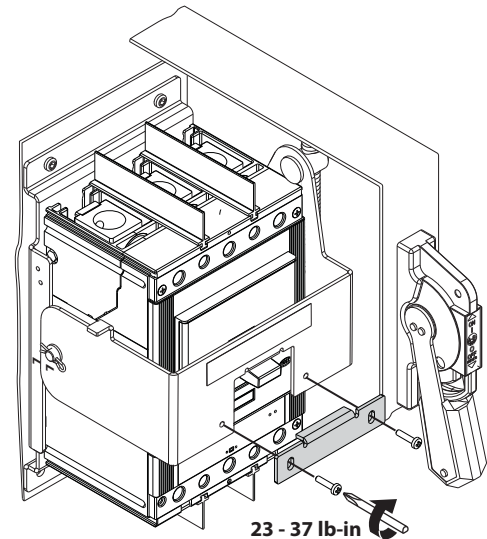


Install insulation barrier (provided with circuit breaker).

- 4** Remove liner from two-sided tape.
- 5** Align holes on insulation barrier with holes on operating mechanism.



- 8** Attach toggle adjustment plate



- 6** Press firmly in place.
- 7** Install circuit breaker onto insulation barrier and mechanism.

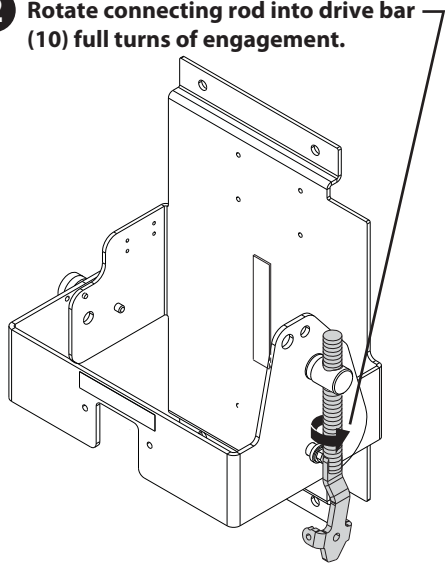
Go to Page 11 to assemble connecting rod and springs to handle

Circuit Breaker Installation (Cont'd)

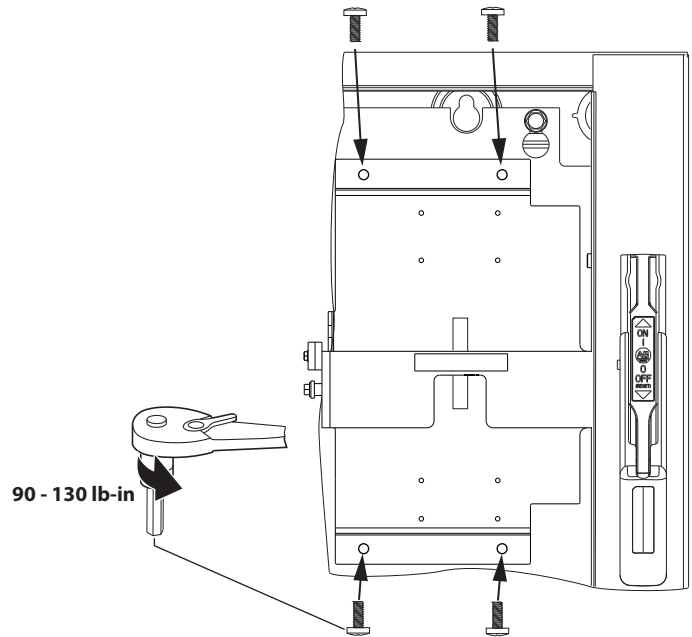
4d 140G-M; 140MG-M

1 Verify that the disconnect handle and toggle on the circuit breaker are in the "OFF" position.

2 Rotate connecting rod into drive bar (10) full turns of engagement.



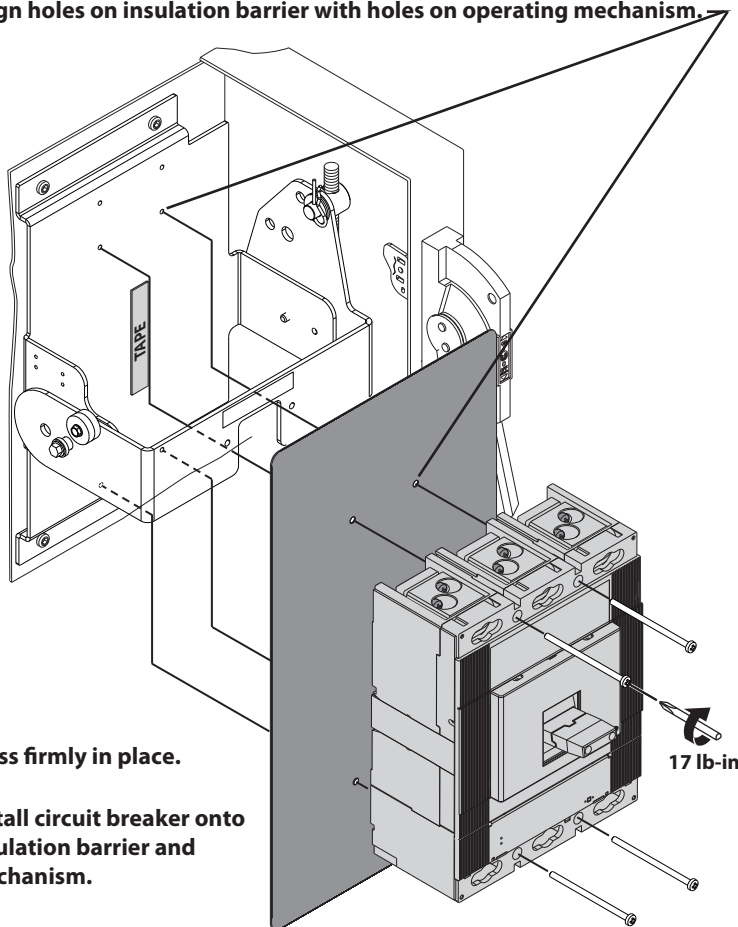
3 Install circuit breaker operating mechanism into panel.



Install insulation barrier (provided with circuit breaker).

4 Remove liner from two-sided tape.

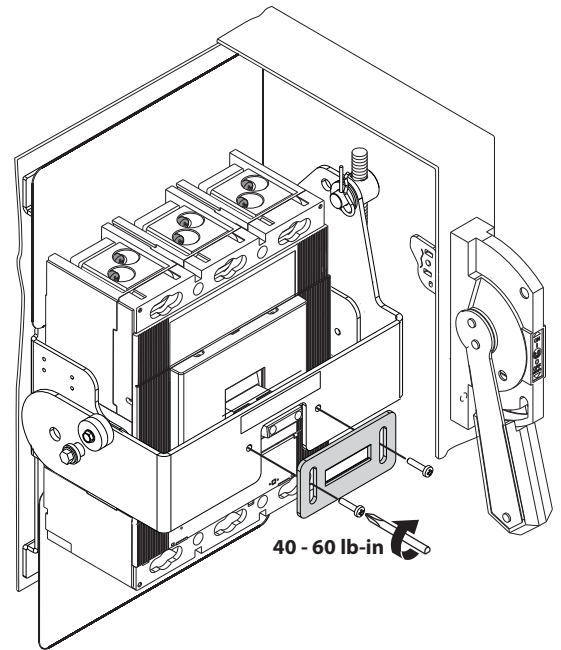
5 Align holes on insulation barrier with holes on operating mechanism.



6 Press firmly in place.

7 Install circuit breaker onto insulation barrier and mechanism.

8 Attach toggle adjustment plate

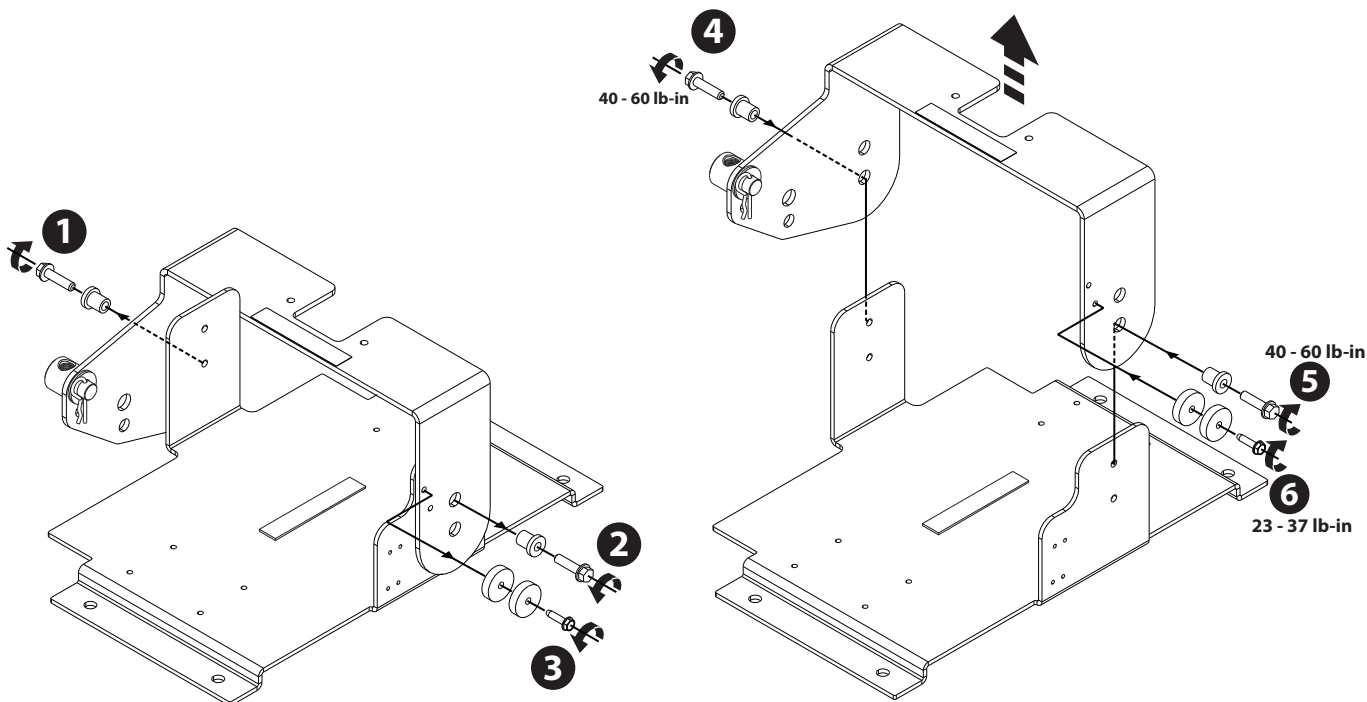


Go to Page 11 to assemble connecting rod and springs to handle

Circuit Breaker Installation (Cont'd)

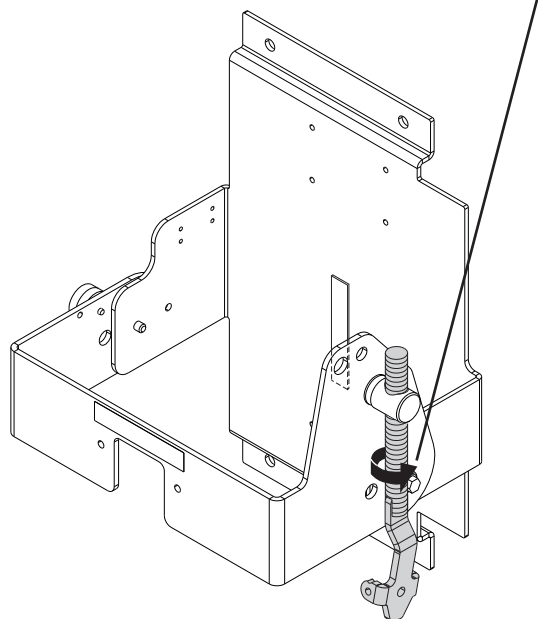
4e 140G-N; 140MG-N

Reposition bail mechanism



7 Verify that the disconnect handle and toggle on the circuit breaker are in the "OFF" position.

8 Rotate connecting rod into drive bar (10) full turns of engagement

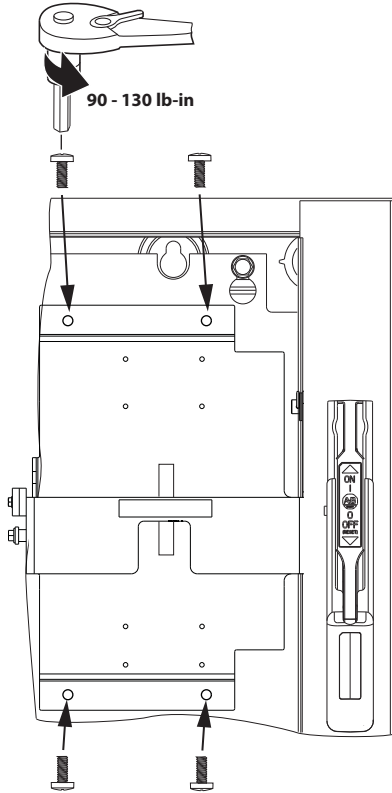


Circuit Breaker Installation (Cont'd)

4e 140G-N; 140MG-N

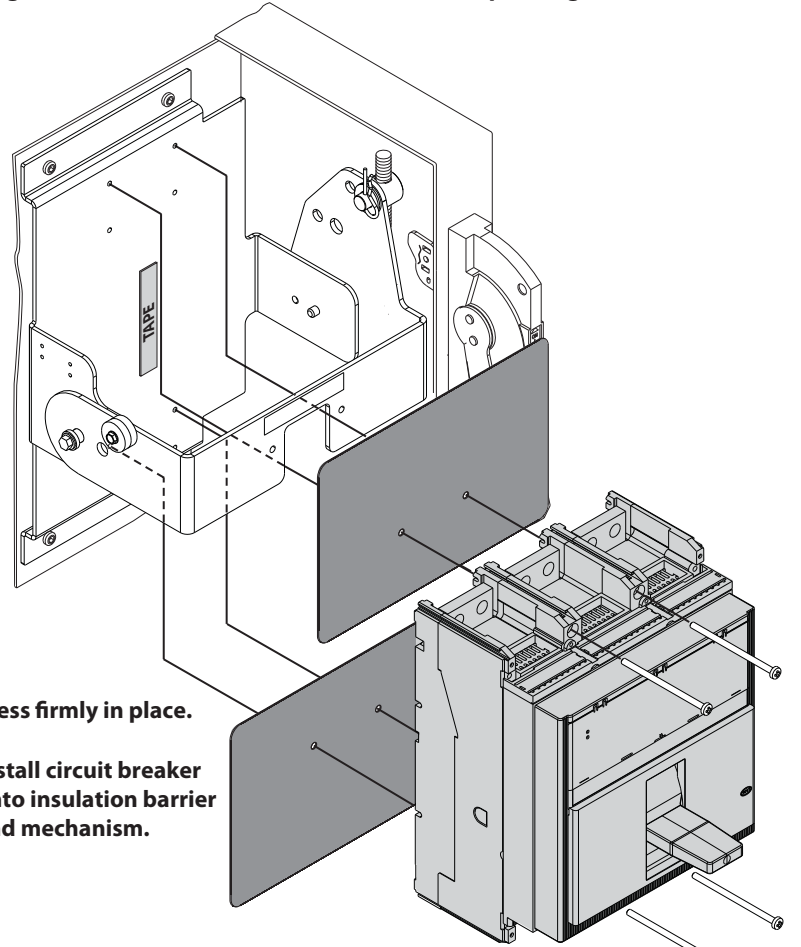
Cont'd

- 9** Install circuit breaker operating mechanism into panel.



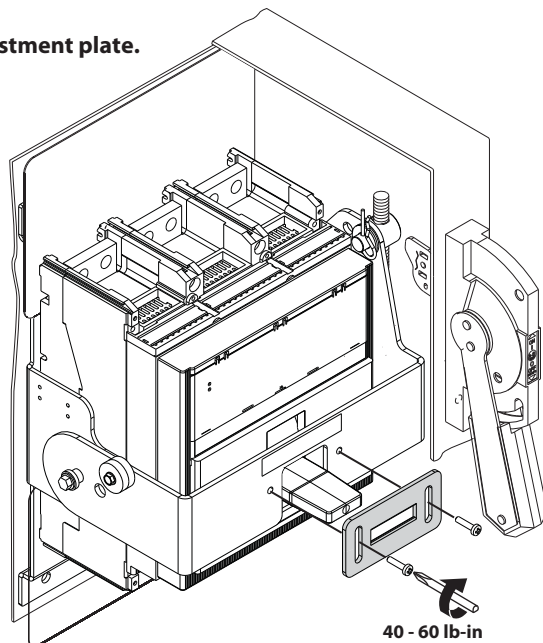
Install insulation barrier (provided with lugs).

- 10** Remove liner from two-sided tape.
- 11** Align holes on insulation barrier with holes on operating mechanism.



- 12** Press firmly in place.
- 13** Install circuit breaker onto insulation barrier and mechanism.

- 14** Attach toggle adjustment plate.

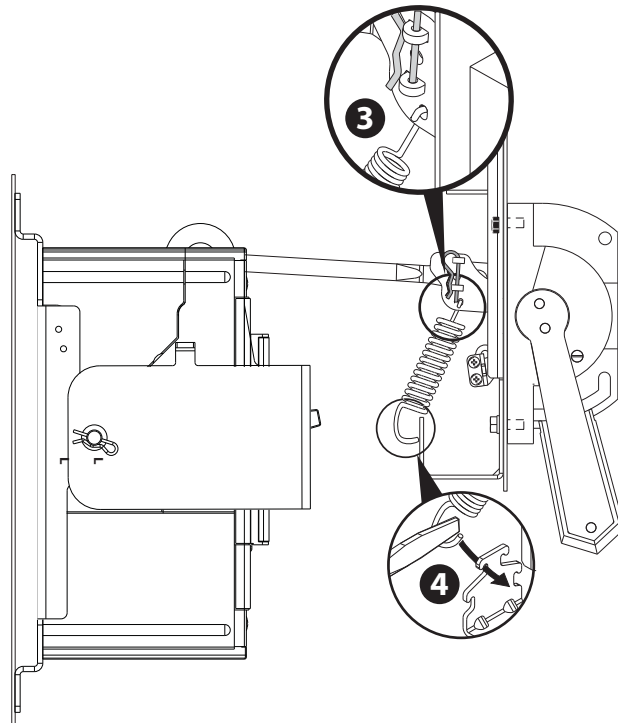
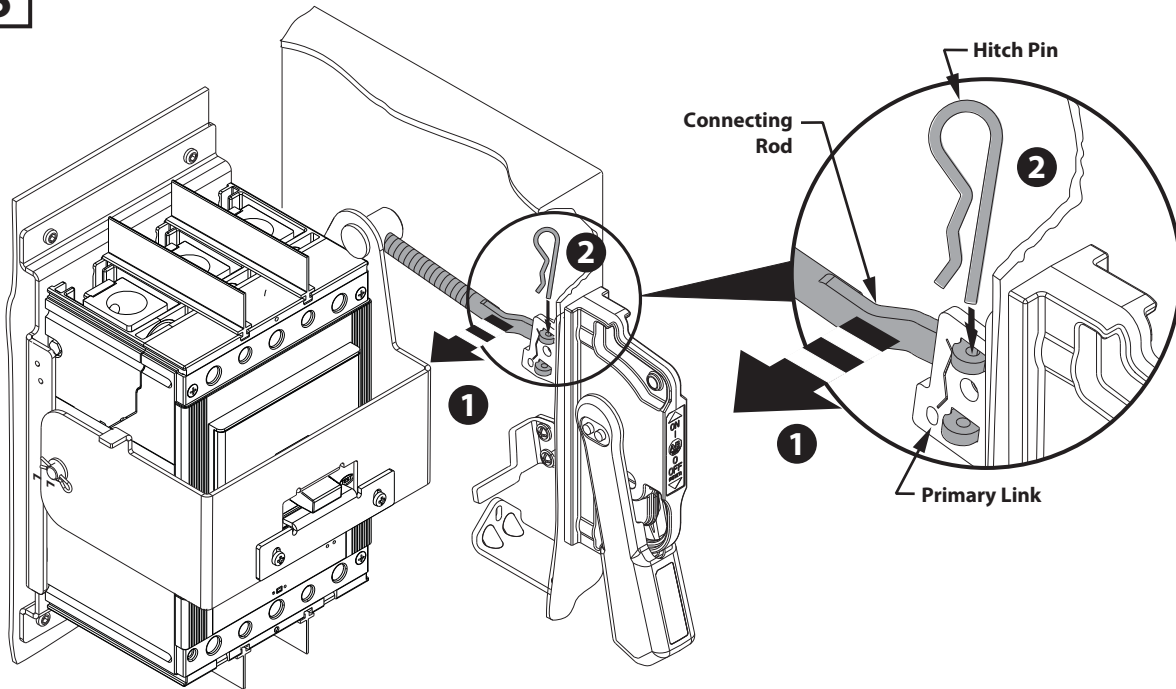


22 lb-in

Go to Page 11 to assemble connecting rod and springs to handle

Connecting Rod and Spring Assembly to Handle

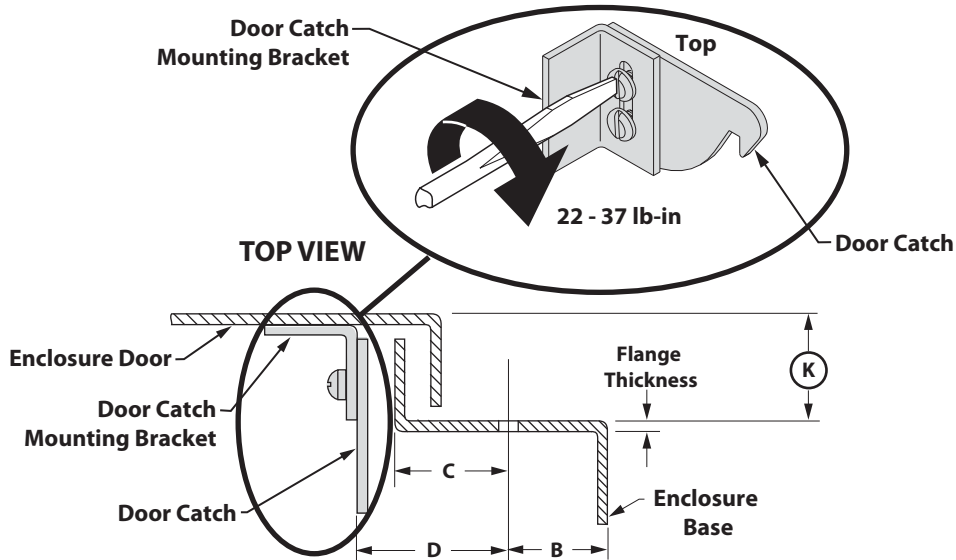
5



Enclosure without Handle Cutout

6 Locating and Installing Door Catch

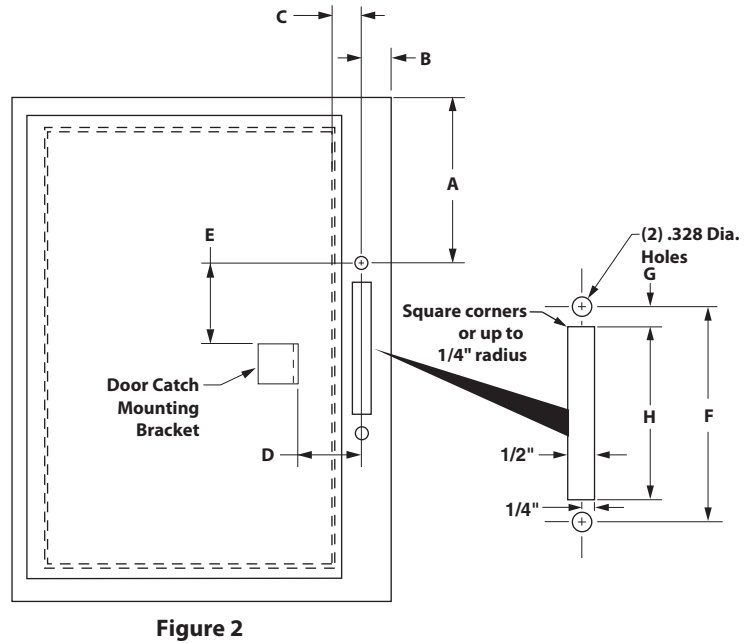
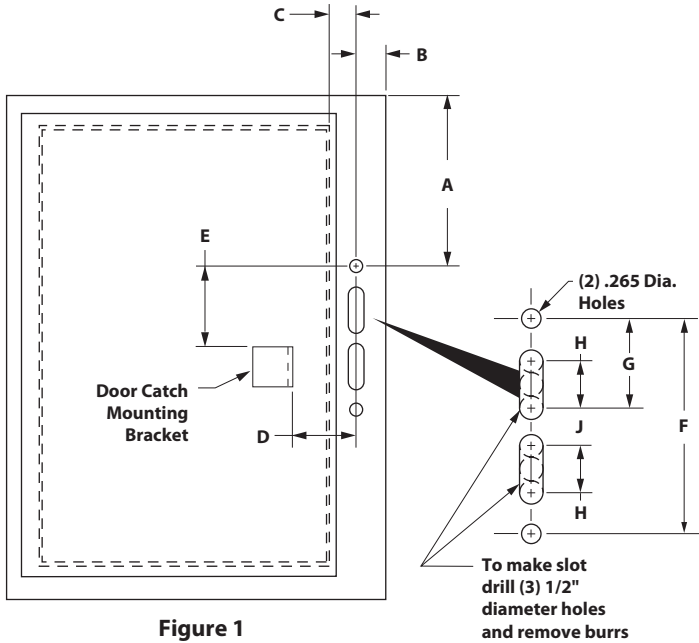
- Provided with projections for welding.
- Projections can also be used as a guide for drilling holes.
- Can be used as a template to drill corresponding holes in the enclosure door.
- User to supply the hardware for fastening the bracket.
- Fasteners must provide the degree of ingress protection for the environmental rating of the enclosure.
- The bracket hardware must be inaccessible to unauthorized personnel.
- Dimension **(K)** (3/4" to 1")
- When using large disconnect handle kit only (1494F-M2 or -S2), use door catch provided with handle kit.
- When using large disconnect handle kit and small door hardware kits (1494V-L1, -LL1, -L2 or -LL2), use door catch provided with door hardware kit.
- Dimension **(K)** (1-1/8" to 1-3/8")
- When using large disconnect handle kit only (1494F-M2 or -S2), use door catch (40492-080-02) which can be ordered from factory.
- When using large disconnect handle kit and large door hardware kits (1494V-L3 or -LL3), use door catch provided with door hardware kit.



Enclosure without Handle Cutout

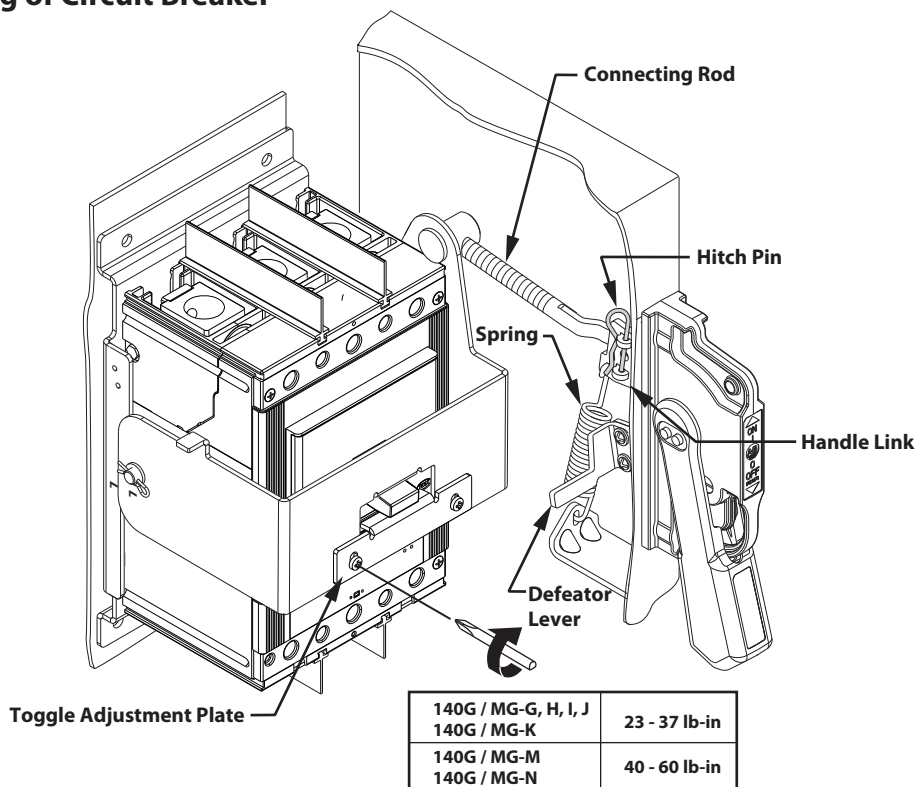
- Enclosures with a Flange Thickness less than 3/16" use dimensions below to install disconnect handle.
- Enclosures with a Flange Thickness 3/16" and greater use dimensions in Alternate Mounting Kit 1494V-H6 to install disconnect handle.

7 Locating and Drilling Handle Holes



FRAME	HANDLE	A (MIN)	B (MIN)	C (MAX)	D	E	F	G	H	J
140G-G, H 140MG-G, H	1494F-M1 (Figure 1)	3-1/2"	29/32"	1-3/32"	1-5/8"	2-11/32"	4-11/16"	1-9/16"	1"	7/8"
140G-I, J 140MG-I, J	1494F-M1 (Figure 1)	10-29-32"	29/32"	1-3/32"	1-5/8"	2-11/32"	4-11/16"	1-9/16"	1"	7/8"
140G-K 140MG-K	1494F-M1 (Figure 1)	13-3/32"	29/32"	1-3/32"	1-5/8"	2-11/32"	4-11/16"	1-9/16"	1"	7/8"
140G-M 140MG-M	1494F-M2 (Figure 2)	17-5/16"	1-3/8"	1-3/32"	2"	3-23/32"	6-1/2"	5/16"	5-1/2"	NA
140G-N 140MG-N	1494F-M2 (Figure 2)	21-7/8"	1-3/8"	1-3/32"	2"	3-23/32"	6-1/2"	5/16"	5-1/2"	NA

8 Testing of Circuit Breaker



“ON” Position

1. Move defeator lever down and move handle to the **ON** position.
2. If the circuit breaker does not turn “ON”, loosen (2) screws on toggle adjustment plate.
3. Move toggle adjustment plate toward line terminals.
4. Tighten the (2) toggle adjustment plate screws to torque value in table above.
5. If the circuit breaker still can not be turned “ON”, return handle to the **OFF** position.
6. Unhook spring, remove hitch pin and separate connecting rod from handle link.
7. Turn connecting rod one full turn clockwise.
8. Reattach connecting rod and handle link, hitch pin and spring.
9. If the circuit breaker still can not be turned “ON”, repeat Steps 6, 7 and 8 if necessary.

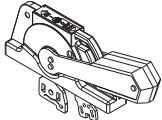
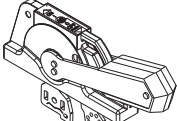
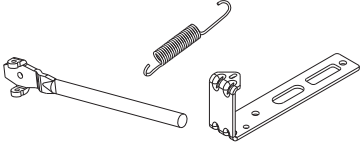
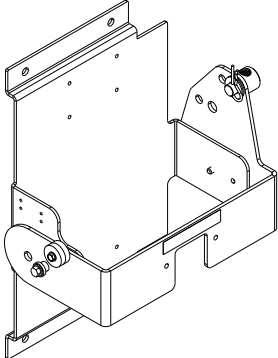
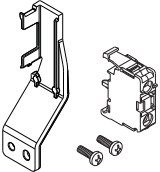
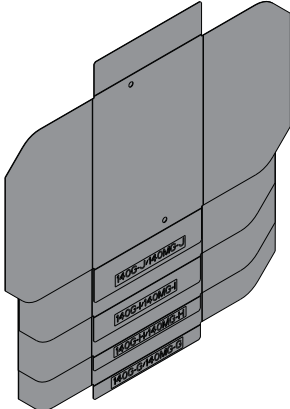
“OFF” Position

1. Move handle to the “OFF” position.
2. If the circuit breaker does not turn “OFF”, unhook spring, remove hitch pin and separate connecting rod from handle link.
3. Turn connecting rod one full turn clockwise.
4. Reattach connecting rod and handle link, hitch pin and spring and then retest.
5. If the circuit breaker still can not be turned “OFF”, repeat steps 2, 3 & 4.

“RESET” Position

1. Manually trip the circuit breaker while in the “ON” position.
2. Move handle to the “OFF” position to reset.
3. If circuit breaker does not reset, unhook spring, remove hitch pin and separate connecting rod from handle link.
4. Adjust connecting rod by turning it clockwise 1-2 turns and then retest.
5. Repeat steps 1-4 until circuit breaker resets.
6. Verify that the circuit breaker can be turned “ON”, “OFF” and “RESET” following the steps above.

NOTE: Twisting of the bail mechanism is acceptable when the handle is in the full “ON” or full “OFF” position.

Components	Cat No.	Description	Circuit Breaker
	1494F-M1 1494F-P1 1494F-S1	5-1/2" Painted Metal Handle 5-1/2" Molded Handle 5-1/2" Stainless Steel Handle	140G-G, 140MG-G 140G-H, 140MG-G 140G-I, 140MG-I 140G-J, 140MG-J 140G-K, 140MG-K
	1494F-M2 1494F-S2	7-1/2" Painted Metal Handle 7-1/2" Stainless Steel Handle	140G-M, 140MG-M 140G-N, 140MG-N
	1494V-RA4	Connecting Rod Enclosure Working Depth: 6-3/4" to 23"	140G-G, 140MG-G 140G-H, 140MG-G 140G-I, 140MG-I 140G-J, 140MG-J 140G-K, 140MG-K
	1494V-RB4	Standard Connecting Rod Enclosure Working Depth: 6-3/4" to 23"	140G-M, 140MG-M 140G-N, 140MG-N
	1494V-M70	Circuit breaker mechanism	140G-G, 140MG-G 140G-H, 140MG-G 140G-I, 140MG-I 140G-J, 140MG-J
	1494V-M71	Circuit breaker mechanism	140G-K, 140MG-K
	1494V-M72	Circuit breaker mechanism	140G-M, 140MG-M 140G-N, 140MG-N
	1495-N85	(1) N.O. Auxiliary Contact	140G-G, 140MG-G 140G-H, 140MG-G 140G-I, 140MG-I 140G-J, 140MG-J 140G-K, 140MG-K 140G-M, 140MG-M 140G-N, 140MG-N
	1495-N86	(1) N.C. Auxiliary Contact	
	1495-N87	Insulation Kit	140G-G, 140MG-G 140G-H, 140MG-G 140G-I, 140MG-I 140G-J, 140MG-J

Bulletins: 507, 513, 513H, 523E, 523F, 523G, 1233, 1233X, 1233V						
NEMA Starter Size	Horsepower Rating For Combination Starter	Voltage	Circuit Breaker Rating	Circuit Breaker Cat No.		
0	1/10..1/3 HP	200V - 230V	15A	140MG-G8P-C15		
	1/10...1 HP	460V				
	1/10...1 HP	575V				
	1/2...1 HP	200V - 230V				
	1-1/2...3 HP	460V				
	1-1/2...3 HP	575V				
	1-1/2...3 HP	200V - 230V				
	5 HP	460V				
1	5 HP	575V	30A	140MG-G8P-C30		
	1/10...1/3 HP	200V - 230V				
	1/10...1 HP	460V				
	1/10...1 HP	575V				
	1/2...1 HP	200V - 230V				
	1-1/2...3 HP	460V				
	1-1/2...3 HP	575V				
	1-1/2...3 HP	200V - 230V				
	5 HP @ 200V	200V				
	5...7-1/2 HP	460V			15A	140MG-G8P-C15
	5...7-1/2 HP	575V			30A	140MG-G8P-C30
	5...7-1/2 HP	230V			50A	140MG-G8P-C50
2	5...7-1/2 HP	200V	30A	140MG-G8P-C30		
	10 HP	460V	50A	140MG-G8P-C50		
	10 HP	575V				
	10 HP	200V - 230V				
	15 HP	460V				
	15 HP	575V				
15 HP	230V	100A			140MG-G8P-D10	
3	20...25 HP	460V	50A	140MG-G8P-C50		
	20...25 HP	575V				
	15...25 HP	200V - 230V			100A	140MG-G8P-D10
	30 HP	575V			50A	140MG-G8P-C50
4	30 HP	230V	150A	140MG-J8P-D15		
	30...50 HP	460V	100A	140MG-G8P-D10		
	40...50 HP	575V				
	30 HP	200V			150A	140MG-J8P-D15
	40...50 HP	200V - 230V			200A	140MG-J8P-D20
	60 HP	575V			100A	140MG-G8P-D10
60...75 HP	460V	150A			140MG-J8P-D15	
5	100 HP	200V	200A	140MG-J8P-D20		
	75...100 HP		575V	150A	140MG-J8P-D15	
	50 HP		250A	140MG-J8P-D25		
	60 HP		300A	140MG-K8P-D30		
	75 HP		400A	140MG-K8P-D40		
	60...75 HP		230V	300A	140MG-K8P-D30	
	100 HP		400A	140MG-K8P-D40		
	125 HP		575V	200A	140MG-J8P-D20	
5	125...150 HP	460V	300A	140MG-K8P-D30		
	200 HP		400A	140MG-K8P-D40		
	150...200 HP		575V	300A	140MG-K8P-D30	

Note: Contact Rockwell Automation for circuit breaker use in bulletin 503 and 503L.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

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