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# Installation Instruction for Cable Operator Mechanisms for SE150, SF250, SG600 & SK1200 Spectra RMS™ Circuit Breakers

Type SRCM1EF, SRCM1G, SRCM1K, Cable Operated Mechanism Assemblies, Cable Series SC3L-SC10L, SC3H-SC10H and GEPC Rotary Handles PB769780A, PB769580A, and PB769380A.

## General

General Electric Cable Operating Mechanisms are suitable for application with GE circuit breakers mounted in a wide variety of enclosure types and sizes.

The cable-operated mechanism can be directly mounted inside the enclosure door and does not involve any mounting interface with the enclosure. Standard mounting screws for tapped holes are furnished with each mechanism to mount the Interface Mechanism onto the enclosure door.

The cable-operated assembly is combined with one of eight operating cables, with lengths from 3 to 10 feet, to cover a broad range of breaker mounting locations in the enclosure. The cable links the interface assembly to the breaker-mounted operating mechanism and transmits the mechanical force and motion of the handle mechanism to the breaker-mounted mechanism. The force and motion of cable operated mechanism is transmitted independent of the breaker-mounting plane or location, relative to the location of the handle assembly provided, only that the bending radius of the cable is no less than 3 inches.

mechanism you have are correct for the job. Use Table 2 to ensure that the cable is long enough to reach the breaker and that the 3-inch minimum bending radius requirement is not violated.

Installation of the handle assembly onto the enclosure door can be performed independently from installation of the cable-operated mechanism on to the enclosure door, breaker-operating mechanism onto the circuit breaker and from installation of the circuit breaker in the enclosure. Installation of the cable between the interface mechanism assembly and the breaker mechanism should be the final step. The breaker operating mechanism is to be installed onto the circuit breaker after the breaker has been mounted in the enclosure.

**Table 1. Mechanism Selection Guide**

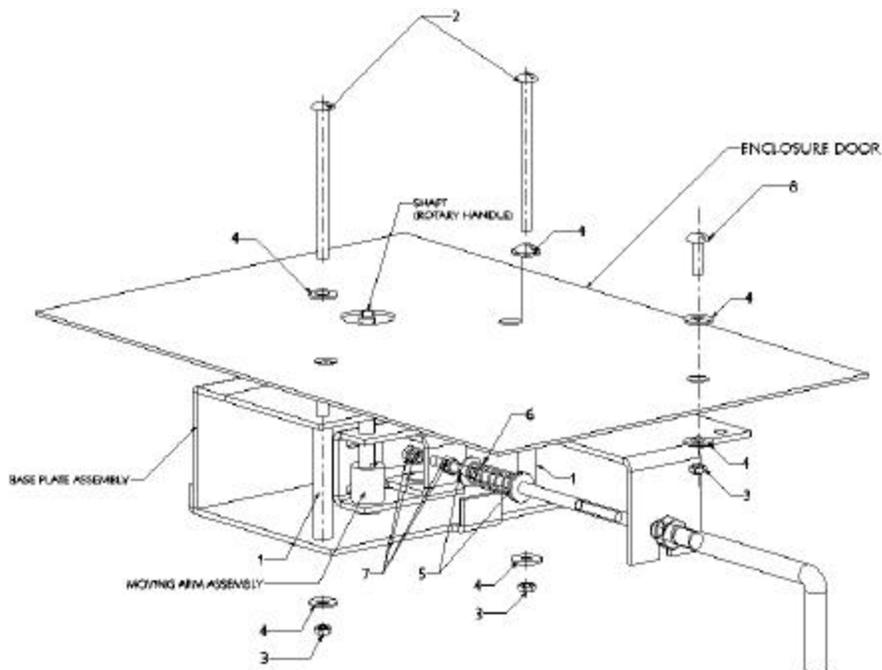
Circuit Breaker Type	GEPC Rotary Handle	Breaker Operating Mechanism	Breaker Face Mechanism Installation Instruction	Operating Cable Cat.No.Series	Cable Operated Mechanism	Cable Operated Mechanism Installation Instruction
SE150	PB769380A	SCOM1EF	GEH-6290	SC3L-SC10L	SRCM1EF	DEH-40467
SF250		SCOM1G				
SG600	PB769580A	SCOM1K	GEH-6291			
SK1200	PB769780A					

**WARNING:** Before installing any accessories, turn the breaker off, disconnect it from all voltage sources and discharge the closing springs.

**A VERTISSEMENT:** Avant d'installer tout accessoire, mettre le disjoncteur en position OFF, le d'econnecter de toute tension d'alimentation, et d'echarger les ressorts d'armement.

## Cable Operated Interface Mechanism installation To Enclosure Door

1. Assemble GEPC rotary handle to the enclosure door through the holes as per the instructions given in GEPC rotary handle instruction sheet.
2. Locate and orient the moving arm assembly on the base plate assembly diameter 0.25 hole as shown in the Figures 1, Figure 4, and Figure 5.
3. Assemble the GEPC rotary handle shaft one end with (driver part) moving arm assembly as shown in Figure1 and assemble the other end of the shaft to the rotary handle. (Keep the rotary handle in off position while doing the shaft assembly and follow the GEPC rotary handle instruction sheet for more details on shaft assembly).
4. Position the cable operated interface mechanism below the enclosure door and locate with the drilled holes as per the Figure 3.
5. Place and locate the spacer (item1), with base plate assembly holes of ¼ inch diameter & holes in enclosure door.
6. Install the cable-operated mechanism to the enclosure door with #12-24 screws (item 2 and item 8), nuts (item 3) & washers (item 4). Tighten the screws to 30-35 in-lb.
7. Refer Table 5 for hardware details.

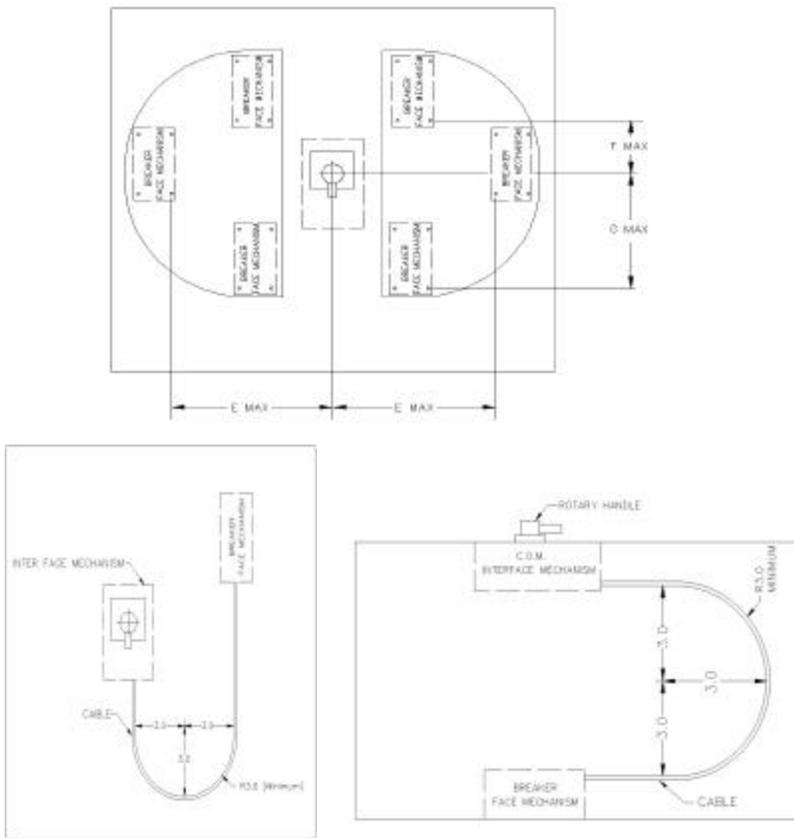


**Figure 1. Cable Operated Interface Mechanism Installation to Enclosure Door.**

The location of the enclosure face mounted SCRM mechanism/handle with respect to the circuit breaker mounting location is **NOT** fixed. The only requirements that must be met are:

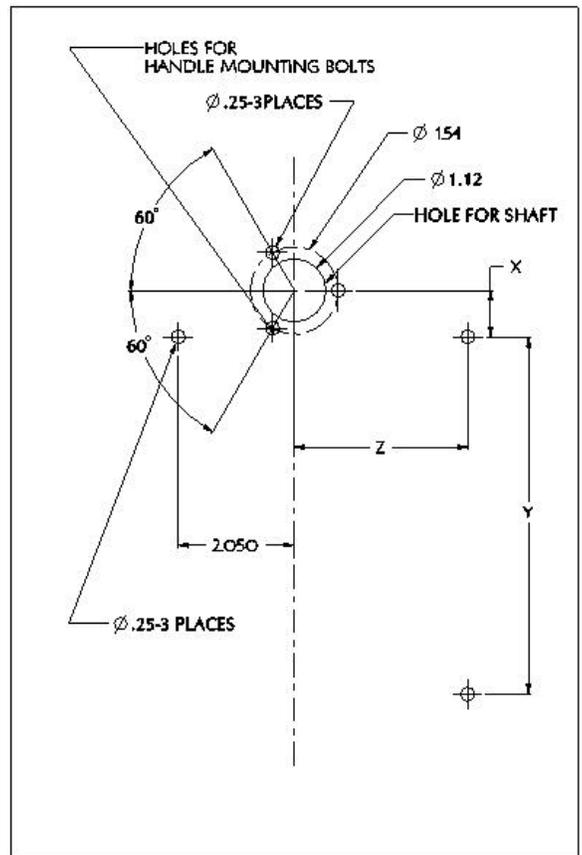
- 1) The cable is long enough to reach from the handle

**Figure 2. Shaft Length**



**Table 3. Shaft Length**

Panel Board Thickness	Shaft Length (Y)		
(Inches)	S/E ,S/F	S/G	S/K
0.075	3.0	3.0	3.0
0.125	3.0	3.0	3.0
0.1968	3.12	3.12	3.12



**Table 2. Approximate Breaker Mounting Zone zone**  
Maximum Dimensions in Inches

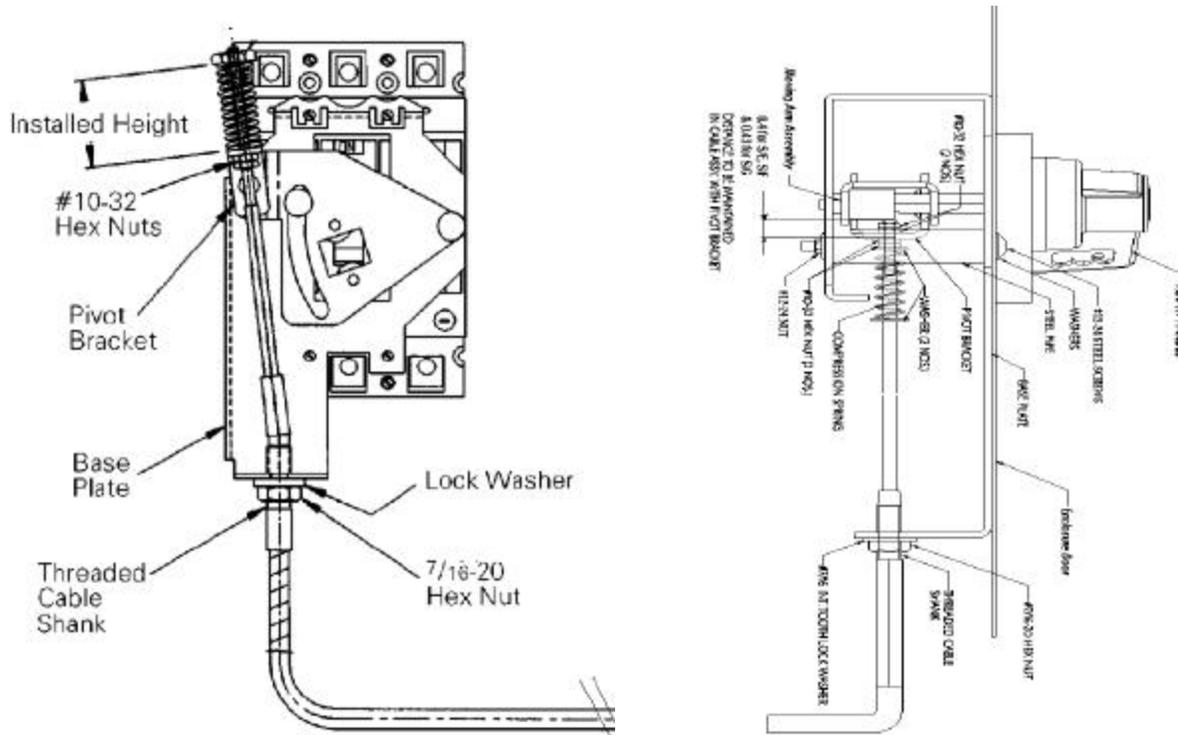
Enclosure Depth	36" Cable			48" Cable		
	E*	F	G	E*	F	G
8	13.5	4.0	15.0	25.5	16.0	27.0
10	13.0	5.0	14.8	25.0	17.0	26.8
12	12.8	6.0	14.5	24.8	17.0	26.5
16	10.5	4.5	14.2	22.5	16.5	26.2
18	8.5	3.5	12.6	20.5	15.5	24.6
20	—	0.5	10.0	22.0	15.0	24.0
24	—	—	—	19.5	14.0	22.0

\* Maximum E dimension only if F = 4.5".

To determine maximum mounting dimensions for 60-inch through 120-inch-long operating cables, add the respective additional lengths to the 48-inch cable maximum dimensions. (For example, add 12 inches to E, F, and G dimensions for 60-inch cable length.)

**Table 4. Drilling Diagram**

	X	Y	Z
SE & SF	0.82	7.13	3.06
SG	1.00	7.27	3.46
SK	0.54	9.02	4.60



**Figure 4. Cable Installation – SE, SF, and SG.**

### Cable Installation-SE, SF, SG

**WARNING:** Before installing any accessories, turn the breaker off, disconnect it from all voltage sources, and discharge the closing springs.

**A VERTISSEMENT:** Avant d'installer tout accessoire, mettre le disjoncteur en position OFF, le d'éconnecter de toute tension d'alimentation, et d'écharger les ressorts d'armement.

Use the following procedure to first install one end of the operating cable to the interface mechanism, then the other end to the breaker operating mechanism.

- Slide a 7/16-20 hex nut onto the end of the cable with the #10-32 x 7/8" thread. Install the nut onto the threaded cable shank beyond the groove at the middle of the shank. Install a 7/16" lock washer onto the hex nut. Do not tighten.
- Place the operating handle in the OFF position. Slide a washer, a spring, a second washer, and thread two #10-32 hex nuts on #10-32 x 7/8" thread. Ensure the spring is between two washers. Set the nuts to 3/8 inches (SE, and SF) and 7/16 inches for SG onto the thread end of the cable as shown in Figure 4. Rotate the pivot bracket into position as shown in Figure 1 & Figure 4. Insert the end of the cable through the pivot bracket, thread two #10-32 hex nuts and tighten until it is snug. Insert the groove of the cable into the slot on the base plate. Tighten the 7/16" hex nut against the cable operating mechanism base plate assembly until it is snug.
- Slide a 7/16-20 hex nut over the cable end with the #10-32 x 3" thread. Install the nut onto the threaded cable shank beyond the groove at the middle of the shank. Install a 7/16" lock washer onto the hex nut. Thread two #10-32 hex nuts approximately 2<sup>3</sup>/<sub>4</sub>" onto the threaded end of the cable. Rotate the pivot bracket into position, as shown in Figure 4, and insert the end of the cable through the pivot bracket. Insert the groove of the cable into the slot on the base plate. Tighten the 7/16-20 hex nut against the base plate flange until snug. With the breaker in the OFF position, move the #10-32 hex nut up on the cable shaft against the pivot bracket. Note the position of the pivot bracket in Figure 4.
- Verify that the power to the circuit breaker has been turned off. Move the operating handle on the circuit breaker to the ON position. Place the spring over the cable end. Thread the spring retainer onto the end of the cable and tighten to the installed height of 1<sup>7</sup>/<sub>16</sub>". *Do not over tighten the retainer.*
- Move the operating handle ON and then OFF. If the breaker does not turn ON, then, with the handle in the OFF position, adjust the #10-32 hex nut toward the pivot bracket until the breaker turns ON.
- Trip the circuit breaker by pushing the TRIP button. Move the operating handle to the OFF/RESET position, then to ON. If the breaker reset, lock both #10-32 hex nuts against the pivot bracket. If the breaker does not reset, adjust the # 10-32 hex nut away from the pivot bracket until the breaker resets.



**Table 5. Hardware Details**

CATALOGUE NO.	S.NO.	PART NO.	NAME OF THE PART	QTY/ASSY.	Breaker
<b>SRCM1EF</b>	1	10087146P1	Steel pipe	2	<b>SE150/ SF250</b>
	2	N66P19056B	#12-24 x 3 ½" Steel Screws	2	
	3	N210P19B6	# 12-24 Nut	3	
	4	N402P10B6	Washer, Steel Plate	6	
	5	N402P40B6	Washer	2	
	6	10086816P1	Compression Spring	1	
	7	10087374P1	#10-32 Hex Nut (Cable)	4	
	8	N37P19012B6	#12-24 x 3/4" Steel Screw	1	
<b>SRCM1G</b>	1	10087146P2	Steel pipe	2	<b>SG600</b>
	2	N66P19056B	#12-24 x 3 ½" Steel Screws	2	
	3	N210P19B6	#12-24 Nut	3	
	4	N402P10B6	Washer, Steel Plate	6	
	5	N402P40B6	Washer	2	
	6	10086816P1	Compression Spring	1	
	7	10087374P1	#10-32 Hex Nut (Cable)	4	
	8	N37P19012B6	#12-24 x 3/4" Steel Screw	1	
<b>SRCM1K</b>	1	10087146P2	Steel pipe	2	<b>SK1200</b>
	2	N66P19056B	12-24 x 3 ½" Steel Screws	2	
	3	N210P19B6	#12-24 Nut	3	
	4	N402P10B6	Washer, Steel Plate	6	
	5	N402P41B6	Washer	2	
	6	10086816P2	Compression Spring	1	
	7	10087374P2	Hex Thin Jam Nut (Cable)	4	
	8	N37P19012B6	#12-24 x 3/4" Steel Screw	1	

These instructions do not cover all details or variations in equipment nor do they provide for every possible contingency that may be met in connection with installation, operation, or maintenance. Should further information be desired or should particular problems arise that are not covered sufficiently for the purchaser's purposes, the matter should be referred to the GE Company.



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