

This manual seeks to explain the installation of Cable Operating Mechanism (COM) using Flange Handle.

Flange Handle Assemblies, cable operating mechanisms, and cables are all required to be assembled together to operate an MCCB GCB100.

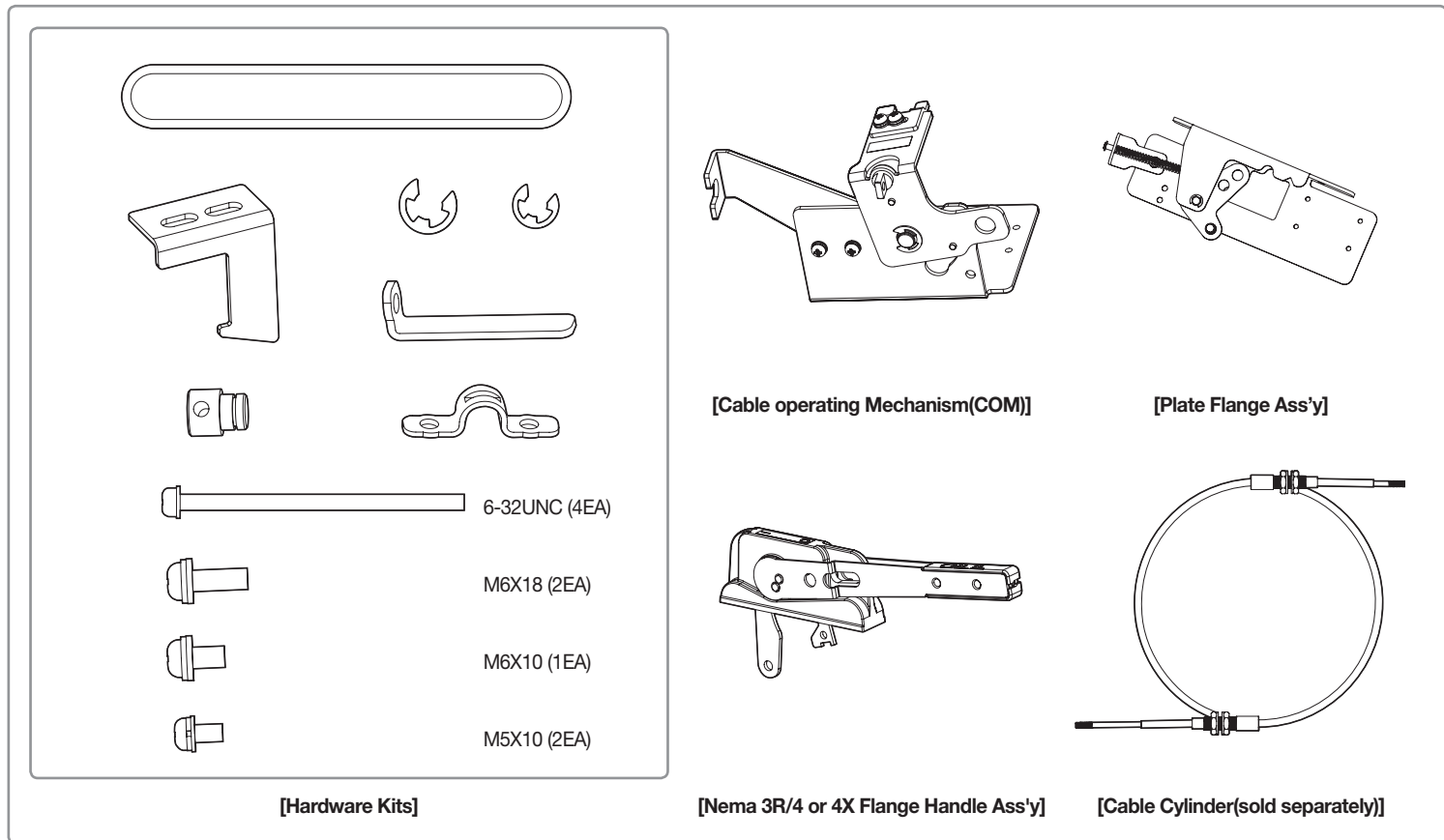
⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- 1) Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E.
- 2) This equipment must be installed and serviced only by qualified electrical personnel.
- 3) Turn off all power supplying this equipment before working on or inside equipment.
- 4) Always use a properly voltage sensing device to confirm power is off.
- 5) Replace all devices, doors and covers before turning on power to this equipment.

Failure to follow these instructions will result in death or serious injury.

1. Verify quantity and condition of the parts in the drawings below before installing.



※ **Tightening Torque**

[Unit: lb-in (N•m)]

Classification	Tightening Torque	Purpose of its use
M5 x 10	25.5(2.9)	Coupling Lever to Flange Handle Link and Plate Flange Ass'y Connection of Bracket and Handle Holder
M6 x 18	46.0(5.2)	Connection of Plate Flange Ass'y and Flange Handle Ass'y
M6 x 10	46.0(5.2)	Connection of Release Lever, a Door Lock equipment
6-32UNC	13.3(1.5)	Coupling COM and MCCB to Enclosure
M12 Nut	34.7(3.9)	Coupling bracket and Cable Cylinder (Assembled in Cable Cylinder)

2. Tap & Hole Measure needed to install COM and Flange Handle

- ① Prepare 4 spots of Tap 6-32UNC to adhere COM.
- ② Prepare to adhere the Flange Handle Assembly.
- ③ Prepare 2 slots of Bolt Stud 1/4-20UNC to adhere Lock to Door.
- ④ Installation spot may change depending on Cable Extension.
Cable Extension: 60/72 inch (1524.0/1828.8 mm)
- ⑤ Enclosure Depth "D" has to be at least 8.66 inch (220.0 mm).

※ Maximum Measure to Install COM

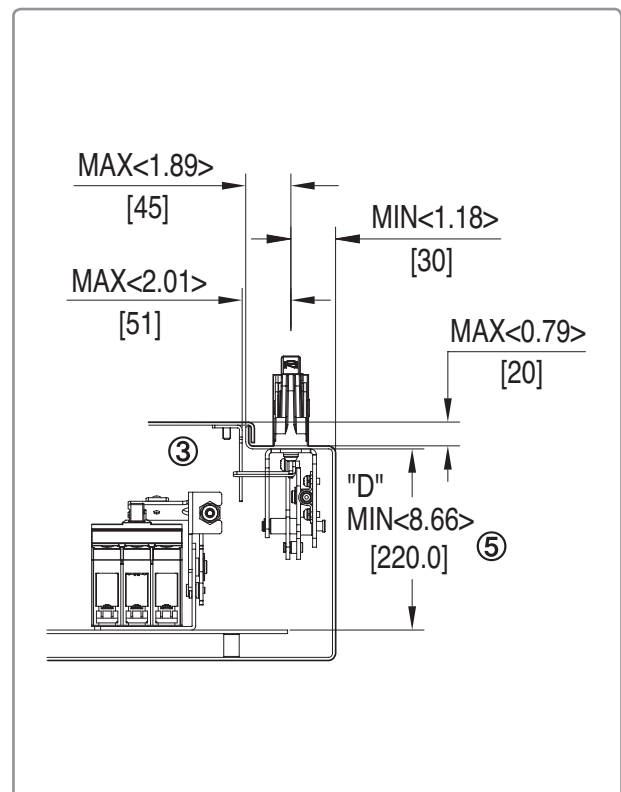
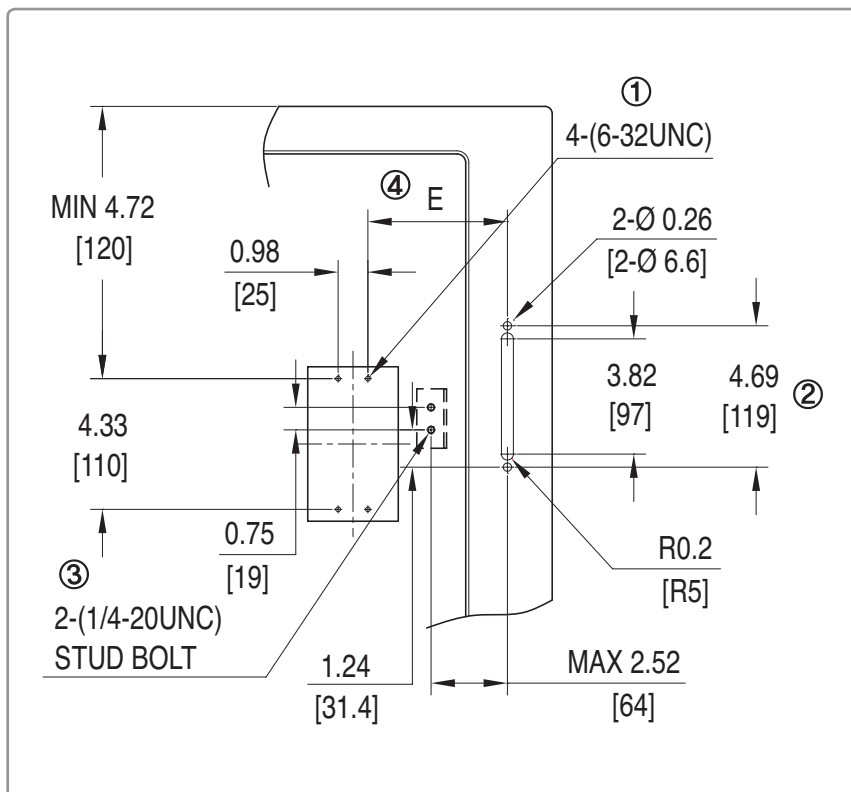
[Unit: inch (mm)]

Installation Spot Measure "E" max		Enclosure Depth							
		10 (254.0)	12 (304.8)	16 (406.4)	18 (457.2)	20 (508.0)	24 (609.6)	30 (762.0)	36 (914.4)
Cable Lengths	60 (1524.0)	25 (635.0)	24 (609.6)	23 (584.2)	22 (558.8)	21 (533.4)	20 (508.0)	19 (482.6)	18 (457.2)
	72 (1828.8)	30 (762.0)	29 (736.6)	28 (711.2)	27 (685.8)	26 (660.4)	25 (635.0)	24 (609.6)	23 (584.2)

※ Minimum Measure for Enclosure "D"

[Unit: inch (mm)]

Standard Measure "E" to install COM	0~1.77 (0~45.0)	1.77~ (45.0~)
	Enclosure Depth "D" Min	8.86 (225.0)

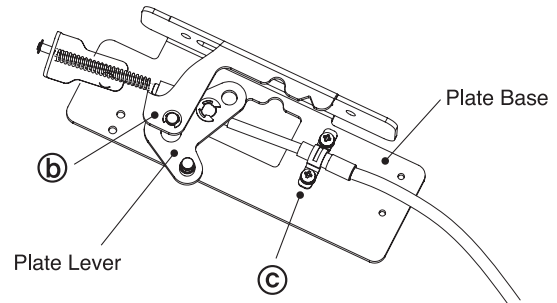
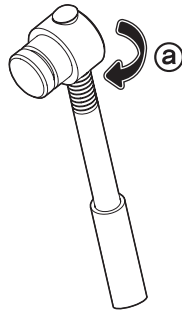
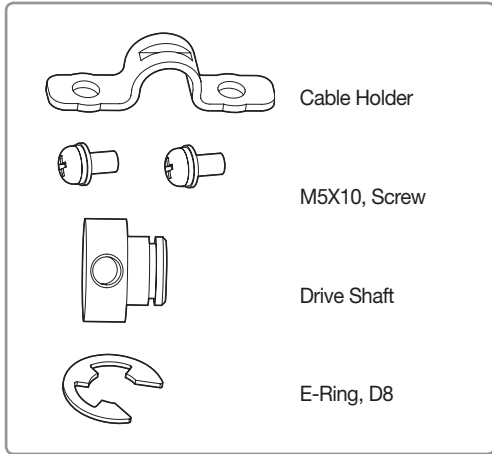


Installation Instruction

GCB100
(GCBX1-FHC-N3R4-M/GCBX1-FHC-N4X-M)

3. How to couple Plate Flange Ass'y and Cable cylinder

Connect Drive Shaft that is inside the plastic bag rotating it as ① so that the end of Cable cylinder screw sticks out 2~3mm.
Place Plate Lever in $\varnothing 10$ slot and connect it as ② to D8,E-Ring. Adhere Cable cylinder on Plate Base's front side along with Cable Holder as ③ using M5X10 Screw(2ea).

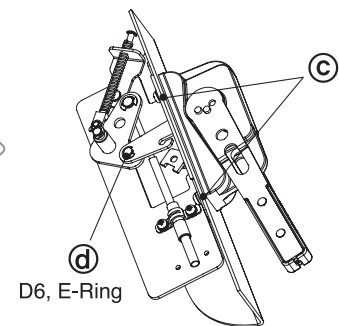
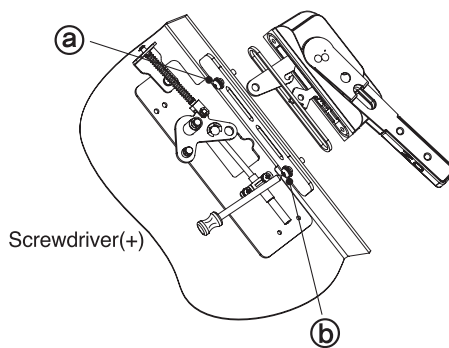
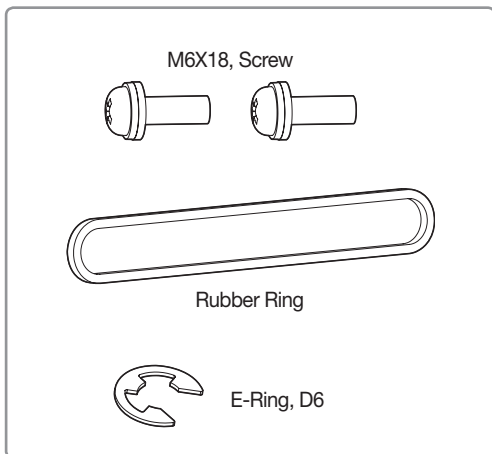


4. How to connect Plate Flange Ass'y and Handle to Enclosure

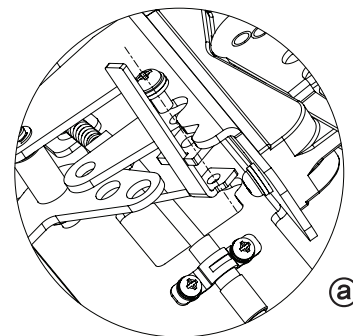
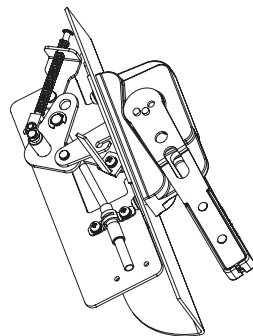
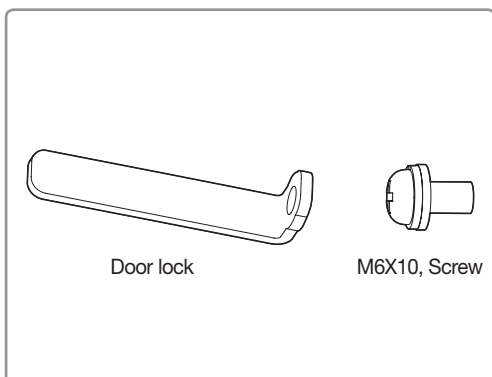
Place Rubber Ring in the slot of Handle Ass'y. Adhere it to Enclosure's upper part.

Place Plate Flange Ass'y in the slot and attach M6X18 loosely as ①.

Tighten loosely M6X18 as ② in the lower side. Find the balance of Handle Ass'y moving it up-down, right-left, then as ③, tighten completely Screw from the upper side with the one from the lower side. Move Handle in ON-OFF direction in order to make Link Hole of Handle Ass'y match with Lever Pin as ④, and connect D6, E-Ring. Check the movement of the Handle by switching it On and Off.

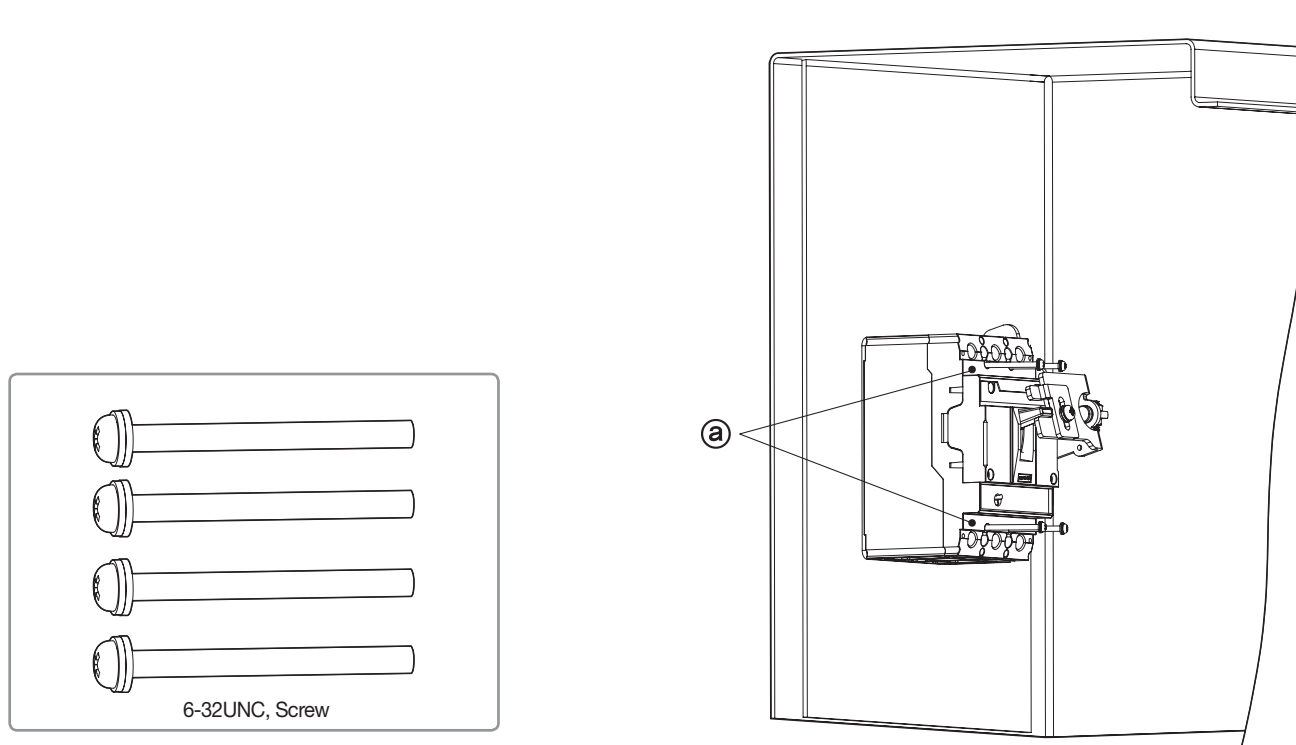


5. Place Door Lock's component in the slot of Release Lever as ① and tighten M6X10 Screw.



6. How to Connect MCCB and COM

Maintain Handle of GCB100 on ON status and tighten COM along with the MCCB using 6-32UNC(4ea) Screw to Enclosure as ①.



7. How to Connect COM and Flange Handle Ass'y to Cable

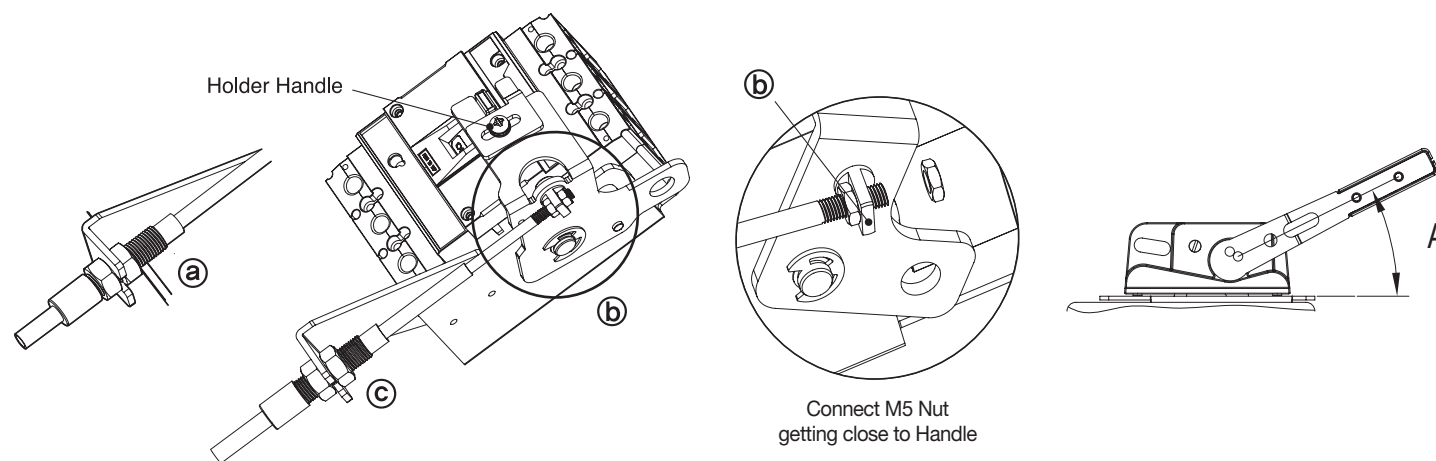
After attaching Cable cylinder loosely to COM with M12 NUT(2ea) as ①, unscrew a M5 NUT.

Moving Handle towards ON, place M5 Screw in Pin Drive Hole that is located by the side of COM as ②.

Adhere totally the Handle Holder to MCCB's Handle with Screw. Then, place M5 Nut in Pin Drive and tighten M12 Nut completely as ③.

When the angle A of the Handle is 30°~35°, adjust M5 Nut until upper Holder Handle makes contact with MCCB Handle as ④. Connect M12 Nut of ③ with 2 wrenches according to designated torque.

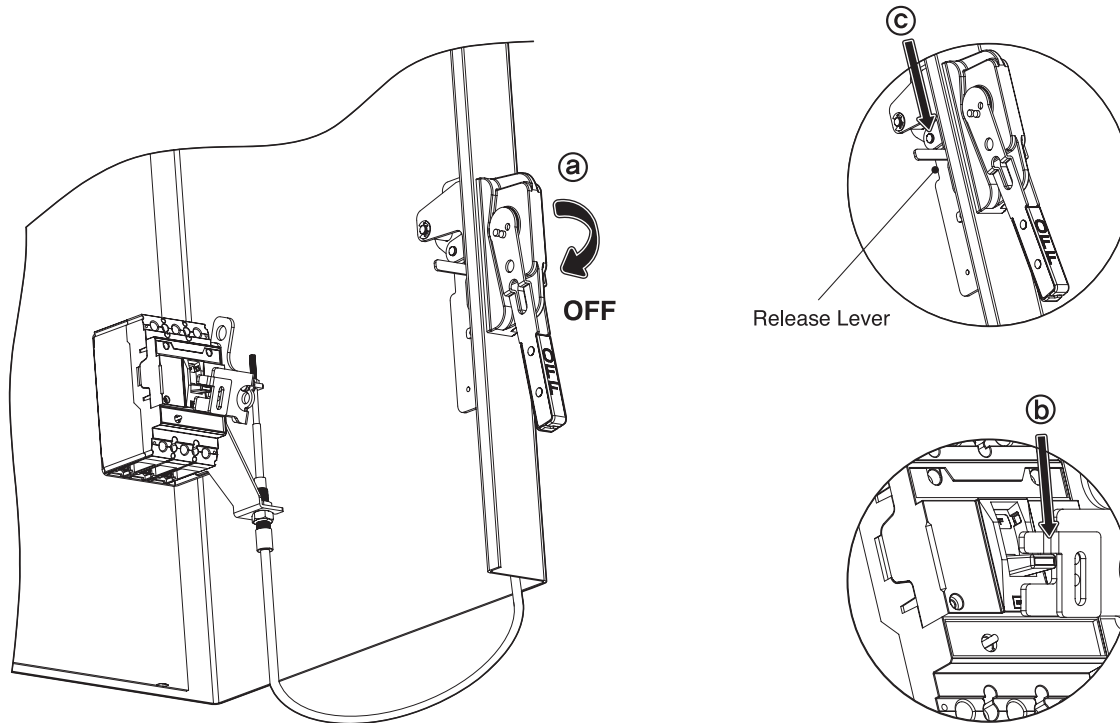
Check that all functions of the Handle work properly, then connect M5 Nut with 2 wrenches according to designated torque.



8. After making MCCB to Trip, verify the Reset status moving the Handle towards OFF as ①.

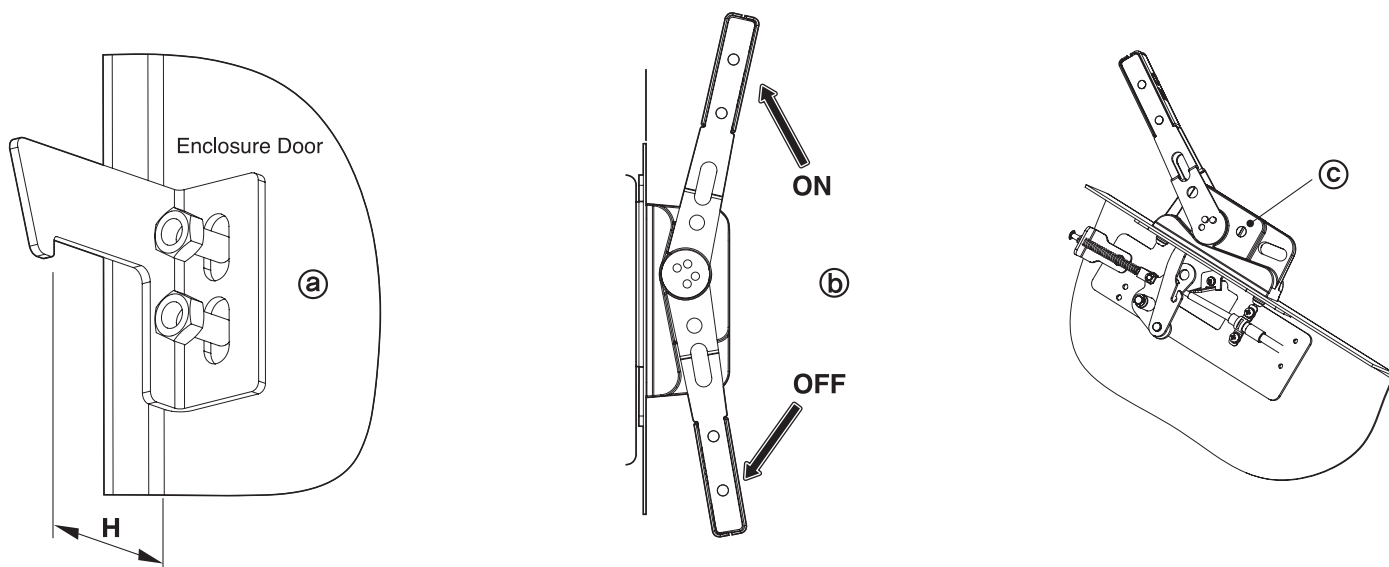
Finally, verify MCCB's Reset status and move Handle Holder as ②.

Nonetheless, in case of opening Enclosure Door and moving Flange Handle to ON from OFF, it must be moved after unblocking Locking that can be done pulling the Release Lever of the Handle as ③.



9. How to Connect Enclosure Door and Lock Hook

Open Enclosure Door and attach Plate Hook Lock loosely as ①, push Handle totally to OFF. Doing this, close Door and adjust Locking status. If height "H" is insufficient for proper locking of the door, adjust the elevation of the Plate Hook Lock from the door with washers and re-check operation.



10. Flange Handle's Principal Movements

- ON, OFF(RESET) movements must operate smoothly when Door is locked.
- Flange Handle movement has to be verified during ON, OFF operation by totally pushing the handle as ⑥.
- Enclosure Door only opens when Flange Handle is in "OFF" status.
- Door Open is impossible when Handle is on "ON". In case of being necessary its opening, you have to unblock Lock equipment with a screwdriver (–) and twisting clockwise the Pin Release that is located next to Handle as ⑦.
- Do not move Flange Handle to ON if electricity flows at the moment of turning it on. Electric shock may occur.

Installation Instruction

GCB100
(GCBX1-FHC-N3R4-M/GCBX1-FHC-N4X-M)

Este manual tiene como objetivo explicar la instalación de Cable Operating Mechanism (COM) usando Flange Handle. Se aplica Handle FHU-S o FHX-S y el COM-0 en MCCB GCB100.

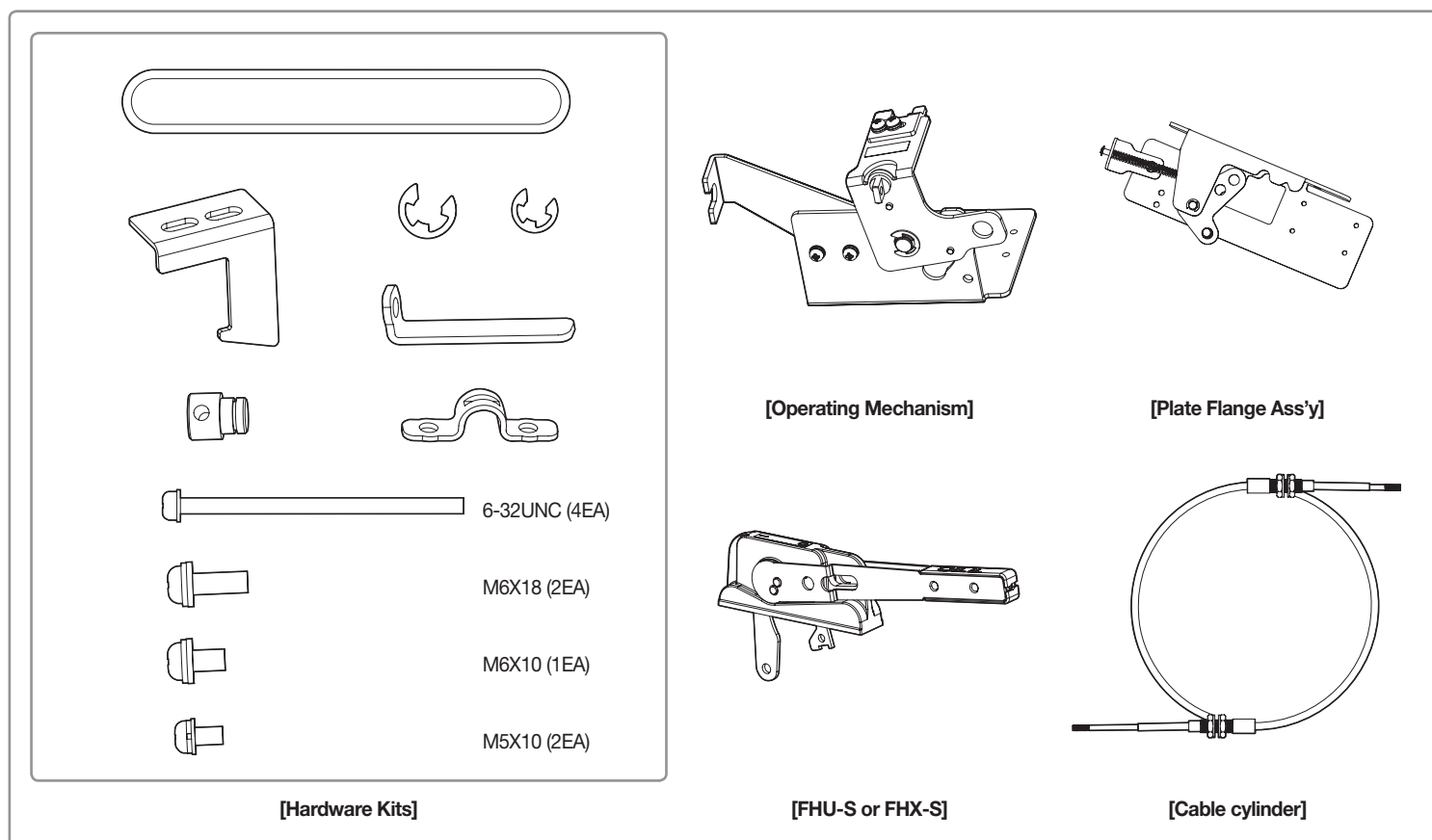
⚠ PELIGRO

PELIGRO DE DESCARGA ELÉCTRICA, EXPLOSIÓN O DESTELLO POR ARQUEO

- 1) Utilice equipo de protección personal (EPP) apropiado y siga las prácticas de seguridad en trabajos eléctricos establecidas por su Compañía, consulte la norma 70E de NFPA y NOM-029-STPS.
- 2) Solamente el personal eléctrico especializado deberá instalar y prestar servicio de mantenimiento a este equipo.
- 3) Desenergice el equipo antes de realizar cualquier trabajo dentro o fuera de él.
- 4) Siempre utilice un dispositivo detector de tensión nominal adecuado para confirmar la desenergización del equipo.
- 5) Vuelva a colocar todos los dispositivos, las puertas y las cubiertas antes de energizar este equipo.

El incumplimiento de estas instrucciones podrá causar la muerte o lesiones serias.

1. Verifique cantidad y condición de las partes de los siguientes dibujos antes de instalar.



※ Par de torsión de Apriete

[Unidad: lbs-pulg (N•m)]

Clasificación	Par de torsión de Apriete	Objetivo de su uso
M5 x 10	25.5(2.9)	Acoplamiento de Lever al Flange Handle Link y Plate Flange Ass'y Conexión de Bracket y Handle Holder
M6 x 18	46.0(5.2)	Conexión de Plate Flange Ass'y y Flange Handle Ass'y
M6 x 10	46.0(5.2)	Conexión de Release Lever, un aparato Door Lock
6-32UNC	13.3(1.5)	Acoplamiento de COM y MCCB al Enclosure
M12 Nut	34.7(3.9)	Acoplamiento de Bracket y Cable Cylinder (Ensamblado mediante Cable Cylinder)

2. Medida del Tap & Hole necesaria para instalar el COM and Flange Handle

- ① Prepare 4 lugares del Tap 6-32UNC para adherir COM.
- ② Prepare para adherir the Flange Handle Assembly.
- ③ Prepare 2 lugares de Bolt Stud 1/4-20UNC para adherir Lock a Door.
- ④ El lugar de instalación puede cambiar dependiendo de Cable Extension.
Cable Extension: 60/72 pulg (1524.0/1828.8 mm)
- ⑤ Enclosure Depth "D" debe ser mínimo 8.66 pulg (220.0 mm).

※ Maximum Measure to Install COM

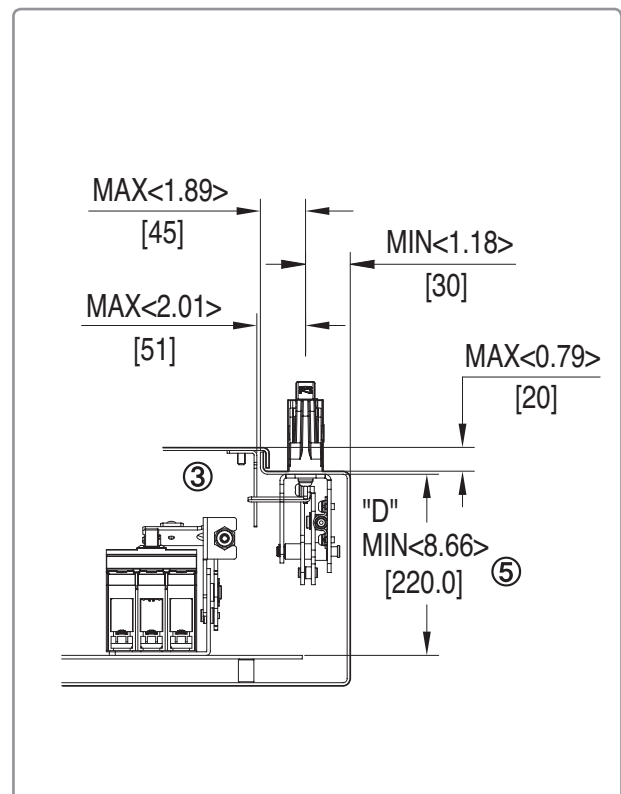
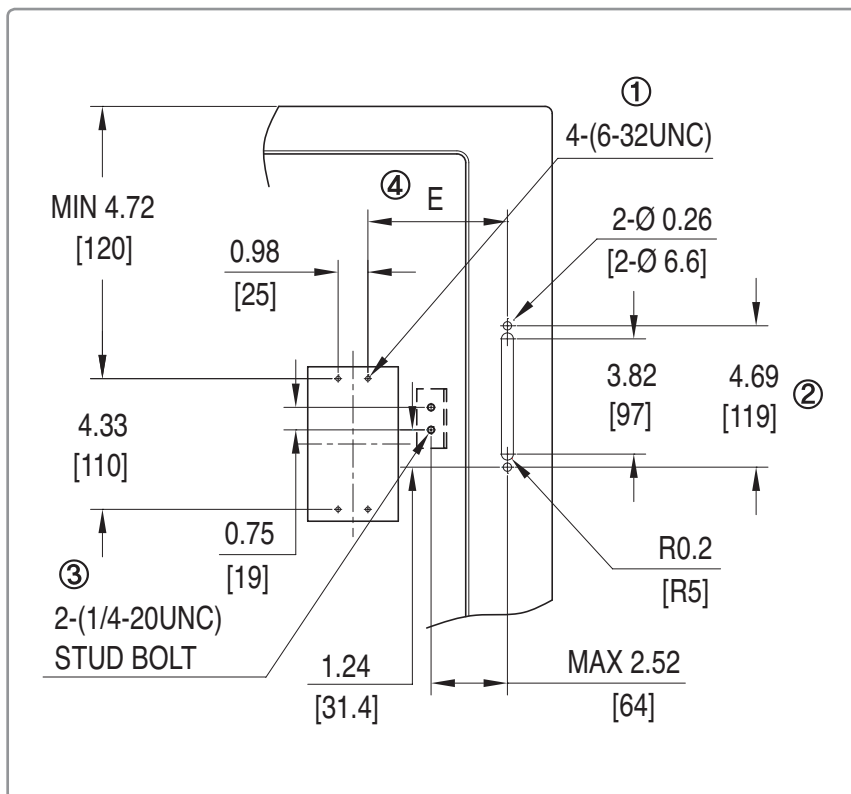
[Unidad: pulg (mm)]

Medida del lugar de instalación "E" max		Enclosure Depth							
		10 (254.0)	12 (304.8)	16 (406.4)	18 (457.2)	20 (508.0)	24 (609.6)	30 (762.0)	36 (914.4)
Cable Lengths	60 (1524.0)	25 (635.0)	24 (609.6)	23 (584.2)	22 (558.8)	21 (533.4)	20 (508.0)	19 (482.6)	18 (457.2)
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※ Medida mínima para Enclosure "D"

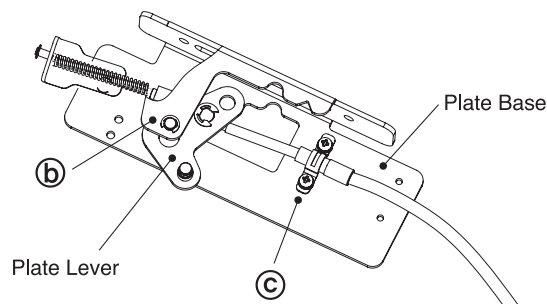
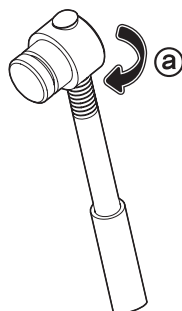
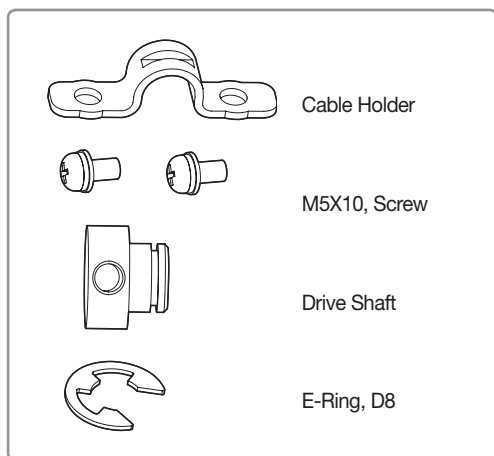
[Unidad: pulg (mm)]

Medida estándar "E" para instalar COM	0~1.77 (0~45.0)	1.77~ (45.0~)
	Enclosure Depth "D" Min	8.86 (225.0)



3. Manera de acoplar Plate Flange Ass'y y Cable cylinder

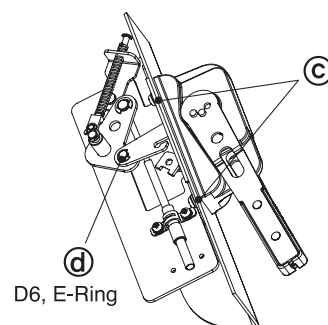
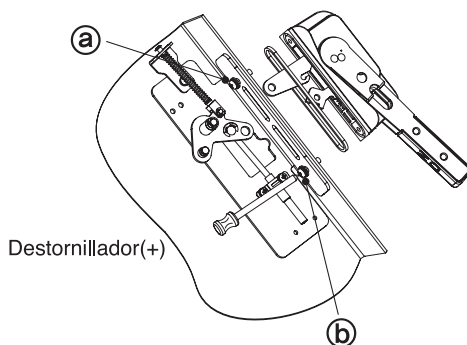
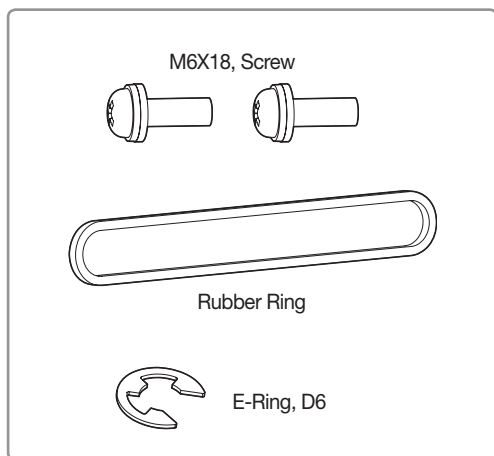
Conecte girando Drive Shaft que está dentro de la bolsa plástica como ① para que la parte terminal de Cable cylinder screw sobresalga 2~3mm. Ponga Plate Lever en la muesca $\varnothing 10$ y conéctelo como ② a D8,E-Ring. Adhiera Cable cylinder en la parte delantera de Plate Base junto a Cable Holder como ③ utilizando M5X10 Screw(2ea).



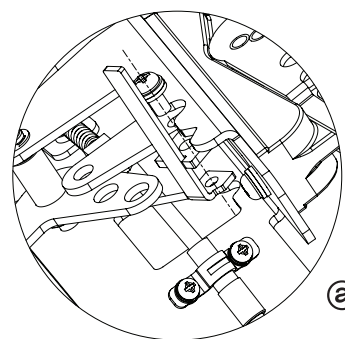
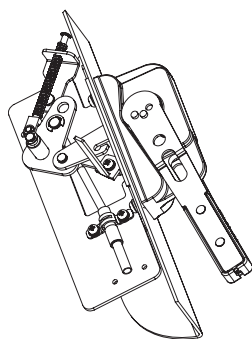
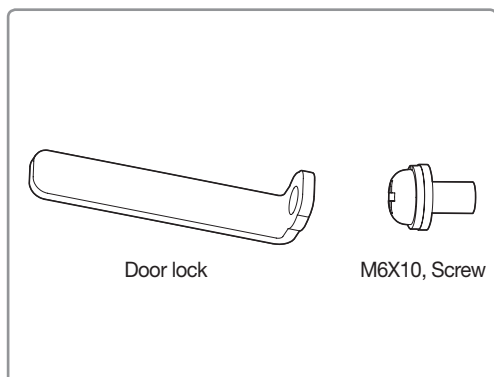
4. Manera de Conectar Plate Flange Ass'y y Handle a Enclosure

Ponga Rubber Ring en la muesca de Handle Ass'y. Adhiéralo en la parte superior de Enclosure. Ponga Plate Flange Ass'y en la muesca y fije M6X18 flojamente como ①.

Apriete M6x18 como ② la parte inferior flojamente. Encuentre el balance de Handle Ass'y moviéndolo arriba-abajo, derecha-izquierda, después como ③, conecte Screw de la parte superior con el de inferior. Mueva Handle en dirección ON-OFF para que Link Hole de Handle Ass'y y Lever Pin concuerden como ④, y conecte D6, E-Ring. Revise el movimiento cambiando en las direcciones On-Off.

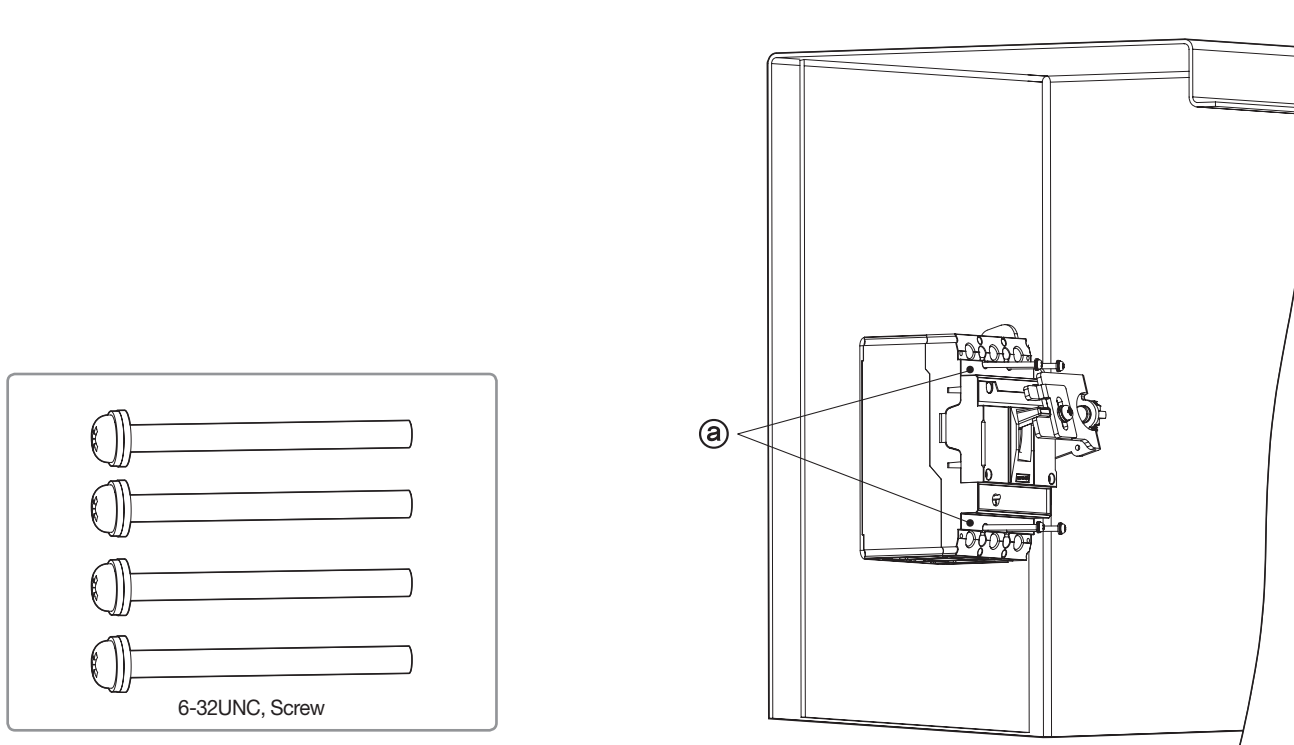


5. Ponga el componente de Door Lock en la muesca de Release Lever como ① y apriete M6X10 Screw.



6. Manera de Conectar MCCB y COM

Mantenga en ON el Handle de GCB100, y conecte COM junto al MCCB usando 6-32UNC(4ea) Screw a Enclosure como ①.



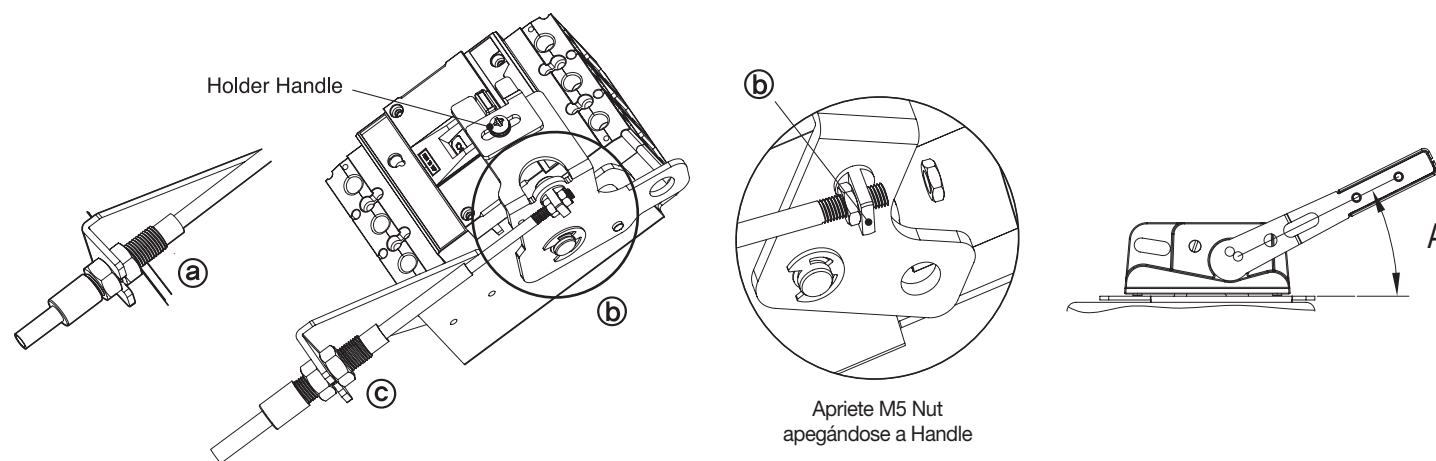
7. Manera de Conectar COM y Flange Handle Ass'y a Cable

Después de fijar flojamente Cable cylinder a COM con M12 NUT(2ea) como ①, destornille un M5 NUT.

Moviendo Handle hacia ON, ponga M5 Screw en el Hole de Pin Drive que se encuentra al costado de COM como ②.

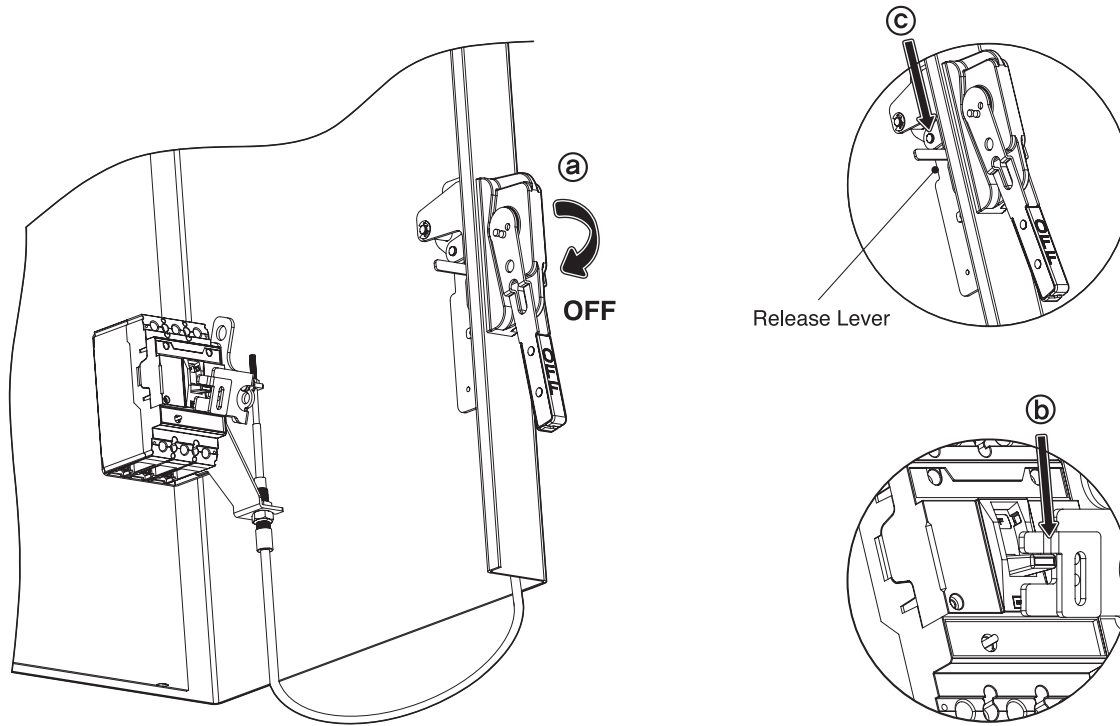
Cuando el ángulo A de Handle es 30°~35°, ajuste M5 Nut hasta que la parte superior de Holder Handle haga contacto con MCCB Handle como ③. Conecte M12 Nut de ④ con dos llaves de acuerdo al par de torsión designado.

Revise que todas las funciones de Handle funcione bien, de ahí conecte M5 Nut con dos llaves de acuerdo al par de torsión designado.



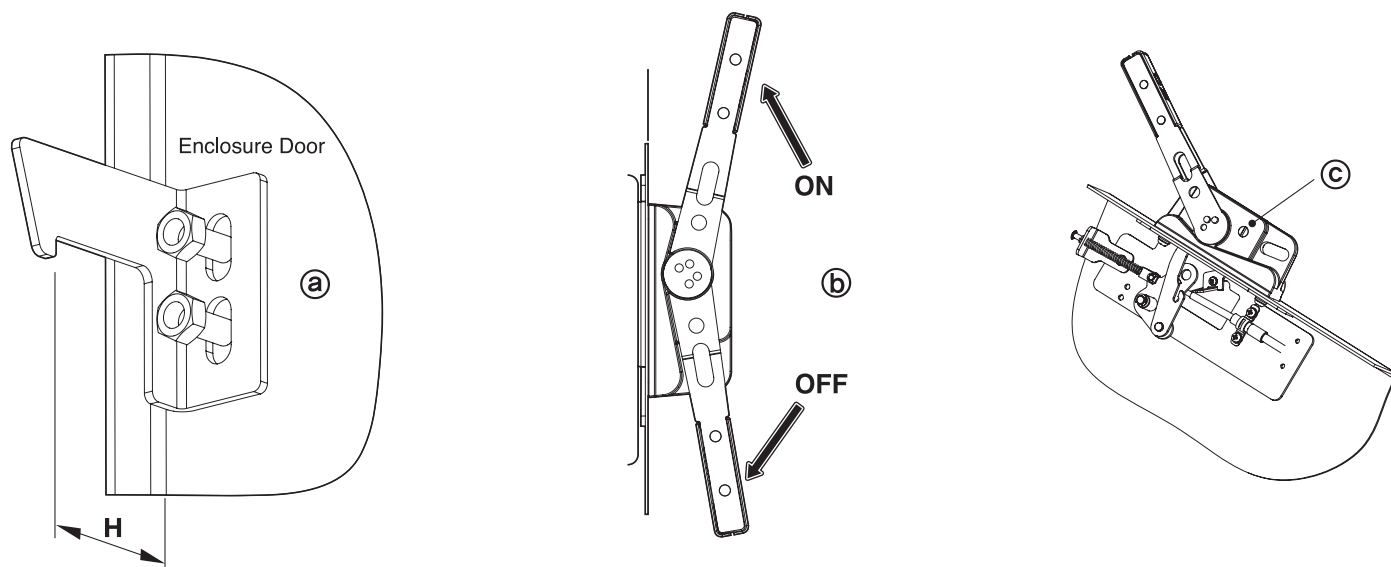
8. Después de hacer que MCCB haga Trip, verifique el estado de Reset moviendo Handle hacia OFF como ①. Finalmente, verifique el estado de Reset de MCCB y mueva Handle Holder como ②.

Sin embargo, en caso de abrir Enclosure Door y mover Flange Handle a ON de OFF, debe moverlo después de desbloquear Locking que se logra jalando Release Lever de Handle como ③.



9. Manera de Conectar Enclosure Door y Lock Hook

Abra Enclosure Door y fije flojamente Plate Hook Lock como ①, empuje totalmente el Handle a OFF. De esta manera, cierre Door y ajuste el estado de Locking. En caso de insuficiencia de la medida "H" y mala operación de Locking, verifique movimiento mediante el ajuste de la elevación colocando Washer entre Door y Plate Hook Lock.



10. Los Movimientos Principales de Flange Handle

- Los movimientos ON, OFF(RESET) deben operar suavemente cuando Door esté cerrado.
- Se tiene que verificar el movimiento de Flange Handle a través del empuje total en operación ON, OFF como ⑥.
- El Door de Enclosure solamente se abre cuando Flange Handle se encuentra en estado "OFF".
- Es imposible abrir la puerta cuando Handle se encuentra en "ON". En caso de que sea necesaria su apertura, tendrá que desbloquear el aparato Lock usando un destornillador (—) y girando Pin Release que se encuentra a lado de Handle en sentido del reloj como ③.
- No mueva el Flange Handle a ON en caso de haber un flujo eléctrico a la hora de prenderlo ya que existe peligro de descarga eléctrica.