GE Consumer & Industrial
Electrical Distribution

Operation & Maintenance Manual
DEH-41467
Catalog # EGGRRLV
115 VAC, 60 Hz

Low Voltage Entelliguard™ G
Circuit Breakers

Remote Racking Operator

For Entelliguard ™ G Breakers 400A-6400A

imagination at work

Section 1. Introduction

The remote racking operator allows the user to move a draw out circuit breaker between the CONNECT and DISCONNECT positions via an electric racking gear head motor and the Cassette housing the breaker. The remote racking operator requires 115VAC, 60Hz control power. A control box connected to the operator with a thirty-foot chord permits control from a remote location.

Section 2. Receiving, Handling and Storage

2.1 Receiving and Handling

Each Remote Racking operator is carefully inspected and packed for shipment. Immediately upon receipt of the device an examination should be made for any damage sustained in transit. If injury or rough handling is evident, a damage claim should be filed immediately with the transportation company, and the nearest General Electric Sales Office should be notified.

The device should be removed from the shipping box with sufficient care so that no damage will result from rough handling. "Loose parts" associated with the apparatus may be included in the crate. Care should be taken to make certain that these parts are not overlooked.

2.2 Storage

The remote racking operator should be protected against condensation, preferably by storing it in a warm, dry environment at moderate temperatures such as 40 degrees F to 100 degrees F. The storage area should be clean and contain no corrosive gasses.

If the device is stored for any length of time, it should be inspected prior to use to insure its proper mechanical and electrical working condition.

WARNING: **Danger of electrical shock or injury. Ensure ALL electrical power supplies are « OFF « before installing or removing any devices. Ensure the breaker is in the OFF position before racking from the disconnected to connect position or from connect to disconnect. The breaker, trip unit or accessories MUST ONLY be installed and serviced by QUALIFIED personnel, see NEMA publication Ab4.**

Avertissement : **Danger de electrocution ou de blessure. S 'assurer avant TOUTES manipulations du disjoncteur que les differentes sources d'alimentation sont en position « OFF ». S'assurer que le disjoncteur est en position « OFF » avant montage dans la position branchee a partir de la position debranchee et.ou mantage dans la position de'branchee a' partir de la position branchee. Les disjoncteurs, unites de protection ou accessoires doivent etre installes par des personnes qualiffees et habilitees. Voir NEMA publication Ab4.**

Section 3. Attachment / Removing

Attaching the Remote Racking Operator to the breaker cassette.

Tool needed: Regular flat head screwdriver approximately 8 inch long shank.

Warning: *GE breaker cassettes mounted in AKD-20 switchgear is equipped with a steel mounting tube assembly. OEM breaker cassettes are equipped with a plastic tube for holding the manual racking tool.* ***PLASTIC TUBES ARE NOT ACCEPTABLE FOR MOUNTING THE REMOTE RACKING OPERATOR.*** *The proper mounting tube assembly is part number 0275B8280G001. If the cassette has the plastic tube you must order this part for each cassette and replace the plastic tube (see page 5 for cassette identification).*

1. Attach the Remote Racking Operator to the Entelliguard™ G breaker cassette by first locating the port located to the far right of the cassette lower facia (see fig. 1). There are three ports located on the cassette bottom facia. The other two are for Kirk Locks.
2. Depressing the blue button on the quick lock pin (1 fig. 2), insert the pin into the Port. Depressing the button allows the two detent pins to retract allowing insertion. Align the hex bit driver with the racking driver port, (2 fig. 2).
3. Insert the bit while at the same time turn the racking access door screw clockwise, (3 fig. 3) with the screwdriver.
4. Apply forward pressure to engage and seat the hex drive bit. If the hex bit wont insert then the hex male bit is not aligned with the hex female drive in the cassette. Rotate the motor shaft exiting the rear of the motor body until the bit aligns while pushing the racking operator handle. When they are in alignment, the Remote Racking Operator will slide further into the cassette. When the racking operator is fully inserted you will hear the detent pins on the Kwik lock shaft click into the locked position. Pull the racker back slightly to confirm locked condition.

Before operating the racking operator make sure you have positioned yourself at least 25 feet away from the breaker. Proceed to section 4.

Fig. 1 Remote Racking Operator mounting Port.

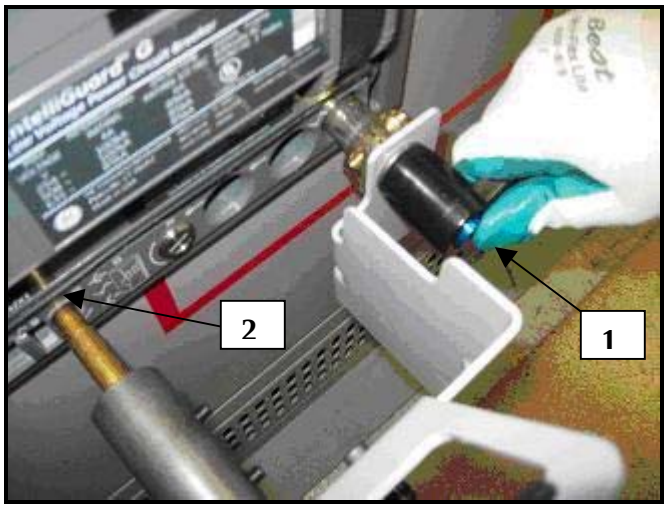

Fig. 2 Inserting racker operator

Fig. 3 Opening Racker access door

Description and Operation

Section 4.1 Description

Remote Racking Operator – 400-6400A frame size Entelliguard™G breakers

The remote racking operator consists of a drive train, control box with switches, power chord and connecting chord. The drive train is made of a gear head motor (1, fig. 4). The hand held control box consists of an (OFF/ON) toggle switch (2, fig. 5). A forward, stop, reverse (FWD STOP REV) three position toggle switch (3, fig. 5). A (RUN), momentary push button (4, fig. 5). And a two position torque selector toggle switch labeled (BREAKER FRAME) with choices Frame 1/ 2, left position and Frame 3, right position. (5, fig. 5). After plugging in the grounded 3-pronged power chord to a 115V AC outlet, the OFF/ON toggle can be switched to ON which powers up the control box. Depending on the breaker frame size being racked in or out, toggle this switch to the appropriate position. Refer to the Breaker Envelope Frame Size chart on page 5 to determine the envelope frame size of the breaker you are racking. Next step is to determine which intended direction the breaker will go. If breaker is in the DISCONNECTED position then the intended direction would be forward (FWD) to rack to the connected position. If the breaker is in the CONNECTED position then the intended direction is reverse (REV). Existing breaker position is confirmed by the position flag in the lower left location of the breaker cassette facia plate located below the breaker. There is a window indicating the breakers position. **Before Racking breakers in or out, ensure breaker is in the OFF position**. **See Warning on page 1.**

Section 4.2 Operation

Next step is to depress the momentary pushbutton, (RUN) which will start the drive. Hold down the button until the breaker reaches final position. The drive controller is equipped with a current inrush sensor. When the breaker reaches it's end of stroke whether CONNECTED

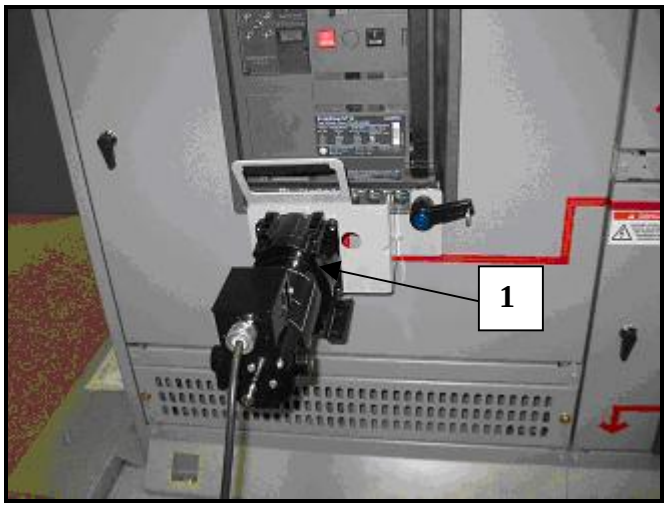

Fig. 4 Remote Racking Operator drive train

or DISCONNECTED the controller will sense the increase in current and shut off power to the motor. An LED labeled "TORQUE LIMIT" , (6, fig 5) will illuminate signaling end of stroke. Remove pressure from the (RUN) button. There is also a striped label on the motor shaft exiting the rear of the motor. This can be used for a visual reference for when the breaker has reached the final positions.

Fig. 5 Control Box

Breaker Envelope Frame Size Chart

In the catalog number printed on the breaker label, the 5th digit is identified as the breaker type and can be found in the first column in the table below. Determine the envelope frame size by looking up the breaker type and finding the Amp rating. The chart will show which envelope the breaker falls under.

Interrupting Rating Tier ANSI/UL1066 Devices, LVPCB					Frame 1	Frame 2		Frame 3	
Type	**240 V**	**480 V**	**600 V**	**1/2S Withstand**	**400 to 2000**	**3200**	**400 to 3200**	**3200**	**4000 to 5000**
N	65,000	65,000	65,000	65,000	X	X			
H	85,000	85,000	65,000	85,000	X				
E	85,000	85,000	85,000	85,000			X		
M	100,000	100,000	85,000	85,000			X		X
B	100,000	100,000	100,000	100,000				X	X
L	150,000	150,000	100,000	100,000				X	X

Mounting Tube Accessory For OEM Breaker Cassette **Part number 0275B8280G001**

The OEM cassette is equipped with a black plastic racking handle storage tube. If you have an OEM cassette the plastic part needs to be removed and this part needs to be installed. To identify an OEM breaker, the sixth character in the 20-digit catalog number will be 1, 2 or 3 if it is an OEM breaker. If the sixth digit is a D, then it is an AKD-20 cassette. Hardware for mounting the metal tube is already in the cassette. The nut needs to be loosened, slide in the tube from the side and retighten the nut to 25 lb-in. See figures 6 and 7

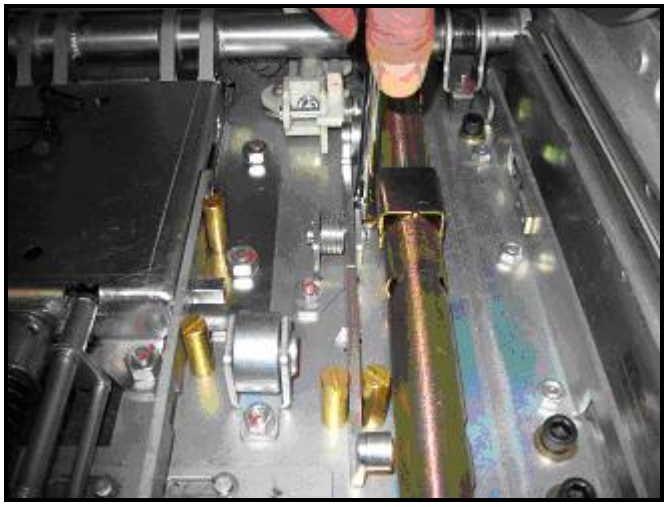

Fig 6. Installing the mounting tube

Fig 7. Mounting Tube Assembly. Part No. 0275B8280G001

Section 4.3 Replacing Fuse

Fig 8. Enclosure Fuse Holder

The enclosed drive is protected by an accessible fuse as shown in figure 8. To replace the fuse, turn the fuse holder cap counter-clockwise and remove the 8A 250 volt fuse and replace with a fuse of the same size and rating.

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

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