

SmartRack™

Electrically Operated Remote Racking Device Installation, Operations and Maintenance Manual



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1.0 Safety Notices

1.1 General

Always follow your company's safety guidelines.

Wear appropriate Personal Protective Equipment (PPE).



Figure 1: Personal Protective Equipment

This product is intended to be operated and maintained by qualified persons thoroughly trained and knowledgeable of the hazards involved. This publication is written only for such qualified persons and is not intended to be a substitute for adequate training and experience in the safety procedures for this device.

Detailed descriptions of standard repair procedures, safety principles, and service operations are not fully elaborated in this instruction book. It is important to note that this document contains some warnings and cautions against some specific service methods that could cause personal injury to service personnel, or could damage equipment or render it unsafe. These warnings do not cover every conceivable method in which service (whether or not recommended by ABB) may be performed.

Secondly, ABB cannot predict or investigate all potential hazards resulting from all conceivable service methods. Anyone using service procedures or tools, whether or not recommended by ABB, must satisfy himself thoroughly that neither personal safety nor

equipment safety will be jeopardized by the service method or tools selected.

All information contained in this manual is based on the latest product information available at the time of printing. ABB reserves the right to make changes at any time without notice.

1.2 Device Specific



Figure 2: Electric Shock Hazard

The SmartRack™ electric racking device incorporates components, such as the DC power supplies, which could contain stored energy. Under no circumstances should the protective covers on any component of the device be removed.

Never tamper with, modify, or otherwise alter the mechanical components, electronics, or control software of the racking device. Failure to comply could cause the device to fail resulting in equipment damage or personal injury.

Never disconnect any of the cables from connected components while the device is powered. Always turn off the device and disconnect it from its power source before attempting to unplug the data cables.

Do not open a cabinet door with the SmartRack™ attached. This could damage the racking device coupling or circuit breaker truck. Always properly remove the Motor Box using the rotary

latch before attempting to open the cabinet door.

The ABB SmartRack™ Electric Remote Racking Device is only intended for use with ABB switchgear breakers, auxiliary devices such as PT or CPT drawout truck and Model 2 MCC contactors listed in Section 7 of this instruction manual. ABB makes no claims to compatibility regarding unlisted devices.

2.0 Introduction

2.1 Overview

The ABB SmartRack™ Electric Remote Racking Device is intended to assist technicians with the process of racking ABB medium voltage circuit breakers and associated equipment. The main function of the device is to perform the racking operation with minimal manual interaction. This allows the operator of the device to maintain a significant distance between themselves and the circuit breaker while racking is performed as compared to the traditional hand-crank method of racking.



Figure 3: The SmartRack™

The ABB SmartRack™ Electric Remote Racking Device is able to perform this complex task through the use of a programmable logic controller and servomotor. Throughout operation, the

controller and motor are in constant communication allowing the device to accurately position a circuit breaker or other device in the switchgear cell. The racking device incorporates an actuator to operate the interlock lever which eliminates need for an additional unit to perform this task or for additional manual interaction.

2.2 Additional Product Support

For additional product support and details not covered in the content of this instruction manual, please contact your local sales representative or ABB directly using the information below.

ABB Inc.
655 Century Point
Lake Mary, FL 32746

Telephone:
1-407-732-2000 Ext. 2510
1-800-929-7947 Ext. 5

Internet: www.abb.com/mediumvoltage

3.0 Receiving and Storage

3.1 Receiving Inspection

Upon receiving the SmartRack™, carefully unpack the device from its box and check for the following components which are fully furnished in the assembled unit:

Table 1: Receiving Inspection

Component	Quantity
Cart	1
Motor Box	1
Control Box	1
25 or 50ft. Connection Cable	2
Power Cable	1
Fuse	2
Socket Extension	1

Should any parts be missing, please contact your local sales representative or ABB using the information provided in Section 2.2 Additional Product Support.

Next, plug the device into an appropriate source of power. See Section 8.2 Electrical Specifications for power requirements. With the device plugged in, locate the On/Off switch on the top of the cart and turn it to the On position. Both the green indicator lights should illuminate. The lights show incoming power to the device and the status of the main power supply.



Figure 4: On Switch and Indicator Lights

Locate the Remote Control Box and make sure the screen of the controller is properly displaying the start-up screen as shown in fig. 5 below. If the screen does not appear or does not look like fig. 5, check all cable

connections. If the start-up screen does not appear after checking the connections, do not proceed to use the SmartRack™, contact ABB product support as indicated in Section 2.2.

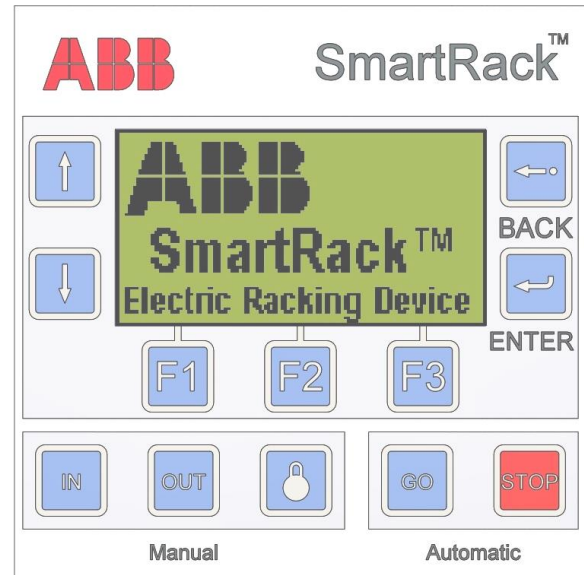


Figure 5: Start-up Screen

3.2 Handling the Device

Plastic handles have been provided at multiple places on the device to facilitate handling. These should be used whenever possible to avoid damage.

The cart includes a swinging push/pull bar with plastic grip.



Figure 6: Cart Handle

The Control Box incorporates two plastic handles for lifting and for use while operating the device. The control housing should never be picked up or held by the cord.



Figure 7: Control Box Handles

The Motor Box has three plastic handles that are located on either side and one in the rear to assist the operator in the installation and removal of the motor box to the mounting adapter plate. The Motor Box should never be lifted by the protruding hex socket or by the cord.



Figure 8: Motor Box Handles

3.3 Storing the Device

The SmartRack™ must be stored indoors in a cool, dry, dust-free place away from sunlight. During periods of non-use the SmartRack™ should be covered to protect from accumulation of dust and keep sunlight off the controller screen. The device should be stored in

an environment that meets the temperature and humidity specifications shown in Section 8.3 Environmental Specifications.

The SmartRack™ cart is intended to store and transport all the components of the device. It is good practice to always return the power, control, and motor cables to their respective sections of the cart, replace the Control Box to its spot, and latch the Motor Box to the provided bracket.



Figure 9: Properly Stored SmartRack™

4.0 General Description

4.1 Using the Cart

Upon arrival, motor box, and control box will be secured to the cart. All wiring and cables will be inside of the cart.

The cart brakes need to be locked whenever the cart is to be parked. Move the cart by disengaging the brakes, lifting the handle, and pulling the cart. Apply the brakes located behind the back wheels.



Figure 10: Wheels and Brake Lever

Connect the power cable, turn the power switch on, and then follow the prompts on the control box.

After using the device, return the motor box and control box to the original locations and replace the cables to their original position within the cart. Be sure to store the cart in a safe place and engage the brakes when parking the cart.

4.2 Motor Box

The motor box has a motor, gearhead, coupling, and interlock actuator inside. The box is secured on the door and cart using the rotary latches on the sides of the motor box. There is one connector on the back of the box, which is connected to the actuator and the motor. There is also a three-color indicator light on the back of the box, indicating an idle state (green), the

device in operation (yellow), or an error (red).



Figure 11: Indicator light and connector

The motor box has a socket protruding from the motor, which connects to the end of the racking screw. The socket can be removed and replaced if required.



Figure 12: Racking Socket on Motor Box

The motor box has three handles to lift and position the box. The operator should not use any other method to mount the motor operator on the mounting plate.

4.3 Control Box

The control box consists of aluminum housing with two handles on the sides, one handle on the rear and a connector on the

back, enclosing a pre-programmed PLC/HMI controller. The controller is connected to the cart by a standard length 25 foot cable, allowing the operator to move to a safe distance before operating the SmartRack™. The controller will give instructions and feedback to the operator throughout the process.



Figure 13: Control Box

4.4 Optional Equipment

4.4.1 Cable Extension

The SmartRack™ can be equipped with a 25 foot long optional extension cable (2RGA015184A0001) connecting the standard controller cable to the controller. This provides additional distance between the operator and the racking operation as well as providing an extra measure of safety.

4.4.2 63kA Socket

If racking 63kA switchgear, or if a custom door has been installed on the switchgear, the additional socket provided can be pinned to the drive. Remove the standard socket by removing the screw, replace the standard socket with the socket extension, and use the same screw to secure the longer socket in the hole on

the drive closest to the face of the motor box. The 63kA socket is a 16mm with a 3/8 drive and is 2 ¼ inches long.



Figure 14a: Racking Extended Socket for 63kA

4.4.3 ReliaGear ND Socket

If racking ReliaGear ND switchgear, or if a custom door has been installed on the switchgear, the additional socket adapter provided can be attached to the drive. The ReliaGear ND adapter is approximately 4 inches long with a hex head on one side and a square drive on the other. To install, insert the socket adapter into the racking tube of the switchgear and align it with the racking screw of the breaker. The adapter is properly engaged when you can push the adapter and depress the racking interlock on the breaker truck. The adapter should return to its initial position when you remove pressure. Proceed with the installation process of the motor box in section 5.2.



Figure 14b: Extension Socket for ReliGear ND

5.0 **Operation of Device**

5.1 Inspection Prior to Use

Prior to using the SmartRack™, always inspect the device for damage or wear. Ensure that all the cable jackets are intact and all connectors are properly secured. Do not use the device if any component is damaged. Check for loose hardware, especially on the Motor Box.

On the cell door, verify that the mounting adapter plate for attaching the Motor Box to the door is secure and the alignment pins are not bent. Confirm the area is clear and follow all procedures for working in the vicinity of power equipment including wearing the appropriate PPE.

5.2 Setup

Wheel the SmartRack™ up to the area where racking is to be performed. The swivel wheels on the side of the cart with the handle have locks which should be engaged to keep the cart in position.

Locate an appropriate power source and plug in the power cord. Turn on the device using the switch and verify both green lights are illuminated. Switching on the device will power up the controller and it will run through a startup procedure (fig. 15 and 16).

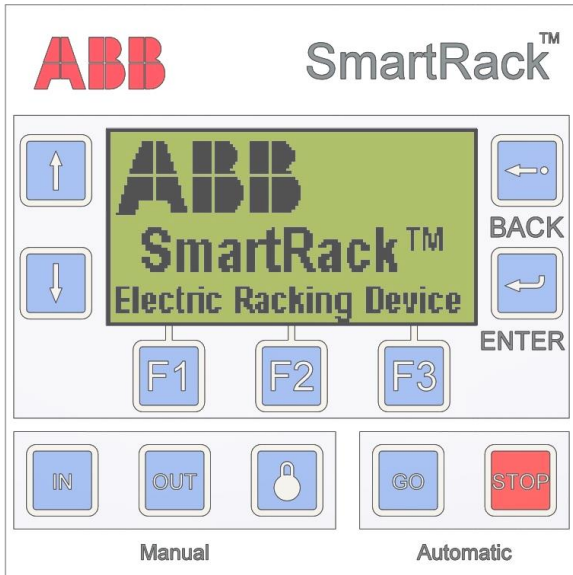


Figure 15: Controller Start-Up Screen

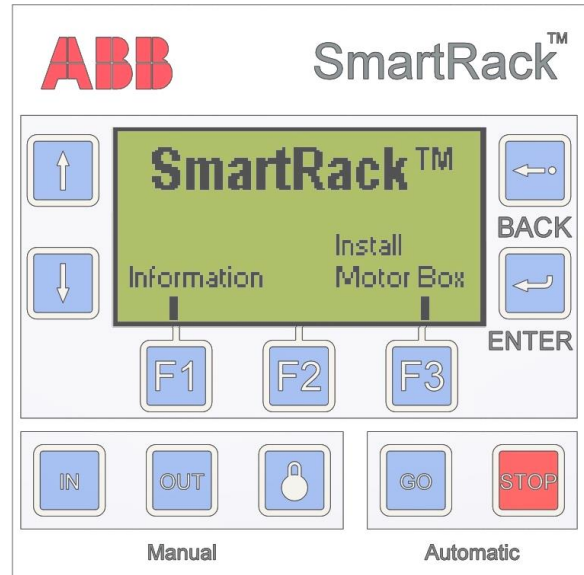


Figure 17: Info/Install Selection Screen

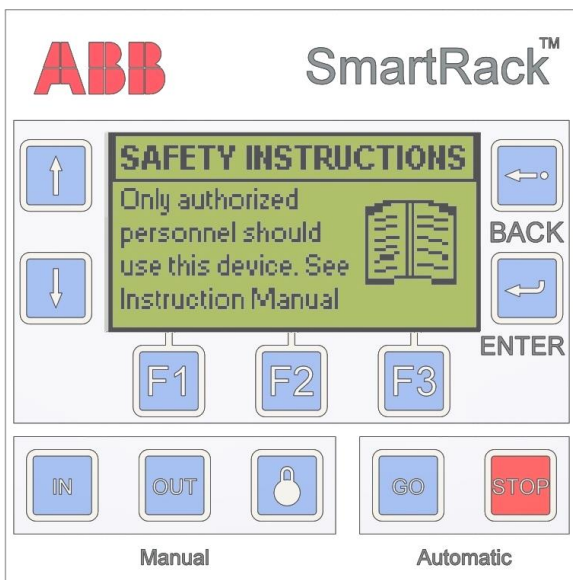


Figure 16: Product Warning Screen

Read through the product warning (fig. 16) and if acceptable press enter to continue. Otherwise, turn off the device. Continuing from the warning screen will bring up the install/ information selection screen (fig. 17).

At this point it is necessary to either select “Information” by pressing F1 or “Install Motor Box” by pressing F3 (fig. 17).

The information screen contains the software version, motor communication status, power status, operation counter and any error codes currently active. Press the up and down buttons to toggle between the two information pages.

5.3 Motor Box Installation

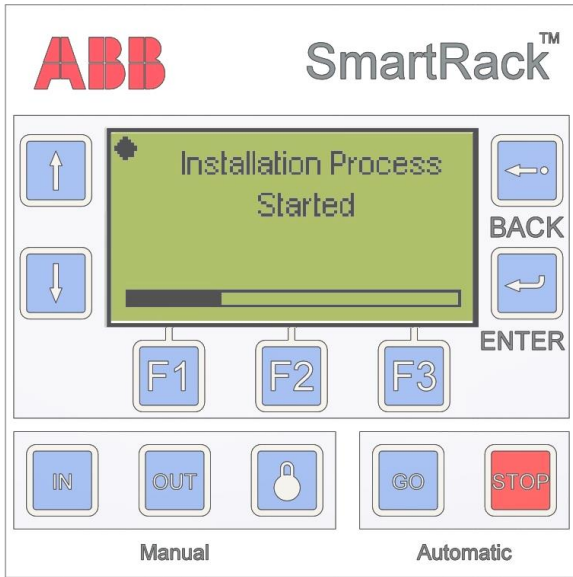


Figure 18: Installation Process Started Screen

When “Install Motor Box” is selected and “enter” is pressed, the motor begins to rotate slightly back and forth to assist in the mating of the 16mm socket and the racking screw on the breaker, PT, CPT, contactor or G&T truck. This slight rotation will continue for 30 seconds or until the motor box socket has engaged the racking screw. If the motor box socket did not properly install, press enter to restart the slight rotation.

After the Motor Box is secured to the mounting plate on the door by rotating the two side latches, the operator should take the hand-held Remote Control Box and move a distance away as defined by local procedure. Once the motor box is installed, press enter to continue.



Figure 19a: Installation of Motor Box 1



Figure 19b: Installation of Motor Box 2

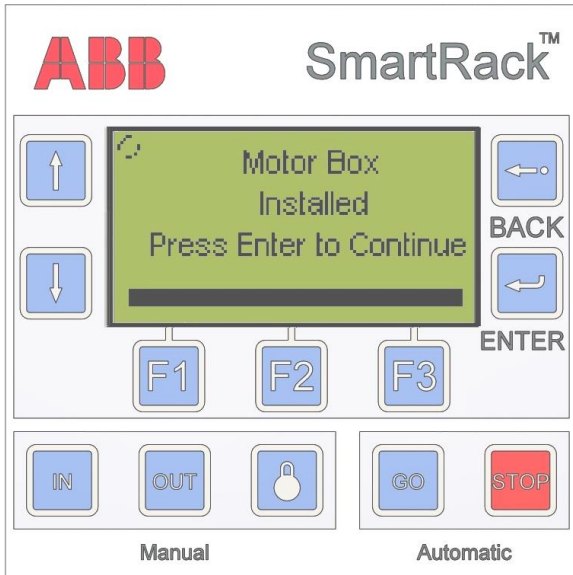


Figure 20: Motor Box Installed Screen

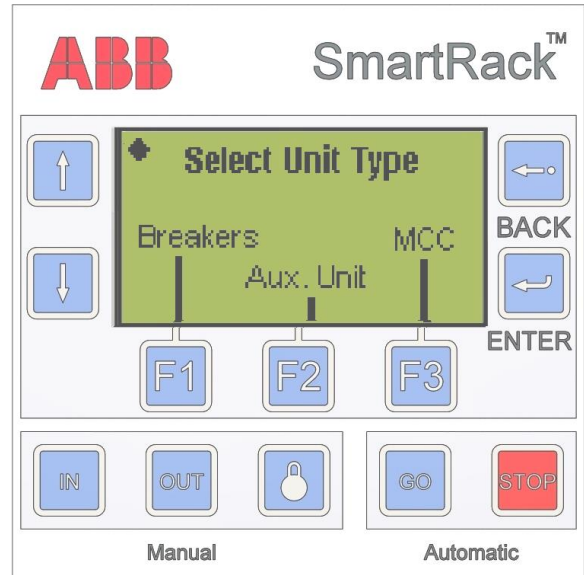


Figure 21: Select Unit Type Screen

After the motor box is installed (fig. 20), the select unit type screen is displayed (fig. 21). The operator is required to select what breaker, auxiliary or contactor the motor box is installed in order to load the specific properties of that unit for operation. Press F1 for “Breakers”, F2 for “Auxiliary Unit” and F3 for “MCC Contactors”. Review Section 7.0 Compatible Devices to see how units are sorted and pick the appropriate category.

The Breaker, Auxiliary Unit, and MCC contactor selection screens (fig. 22) operate the same. Use the up and down arrows to highlight the correct unit and press enter. The unit type can be changed later from the main menu (fig. 23).

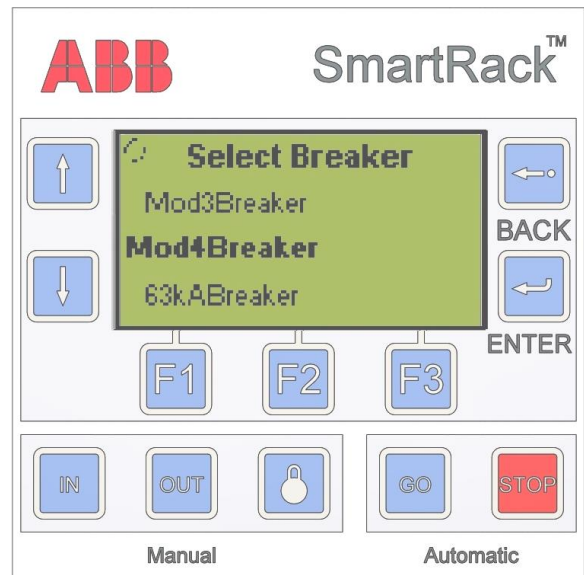


Figure 22: Unit Type Selection Screen

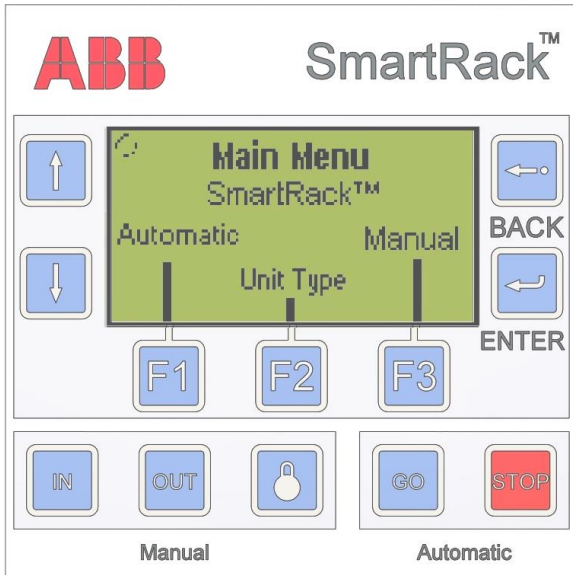


Figure 23: Main Menu Screen

In the main menu screen, (fig. 23) the operator can select either F1 for automatic racking, F2 to change the unit type or F3 for manual racking.

Automatic racking should be used whenever possible since it is intended to move devices between positions. Manual Racking gives the user greater control over the operation of the racking device; however, should only be used in exceptional circumstances, such as when a breaker failed to completely rack to a position. Refer to Section 5.4 Automatic Racking or Section 5.5 Manual Racking for more detail on the racking process.

5.4 Automatic Racking

Automatic Racking is the device’s standard operating mode. It allows the operator to specify a starting position and an end position. The device processes this information and then performs the complete racking procedure.

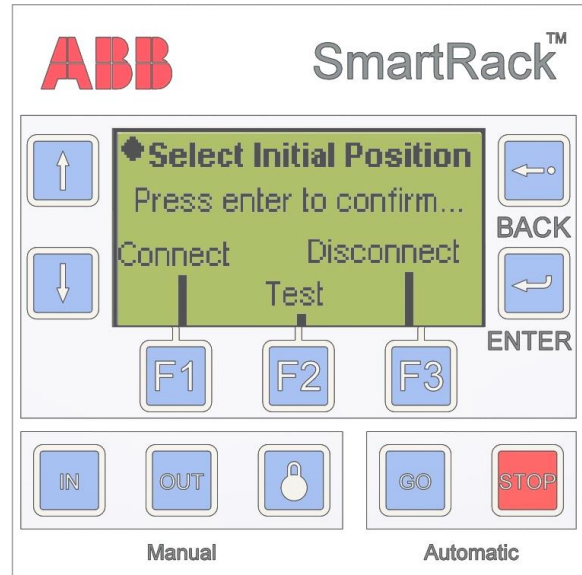


Figure 24: Select Initial Position Screen

Once Automatic Racking has been selected, the select initial position screen (fig. 24) will request the current position. Connect is when the unit is all the way forward into the frame and both primary and secondary connections are made. Disconnect is when the unit is all the way backward where neither the primary nor secondary connections are made. Test is between disconnect and connect where only the secondary connections are made. Connect, Test, and Disconnect may be selected by pressing function buttons F1, F2, and F3, respectively. The ReliaGear ND platform will only have Disconnect and Connect positions for the circuit breaker.

Note that the Test option may not be available for some devices, like potential transformers which have no test position on the racking screw.

Once a start position has been selected, the text for that position will be

highlighted. Confirm the selection by pressing the ENTER button. Always be sure to double check the entered initial position matches the actual position of the unit.

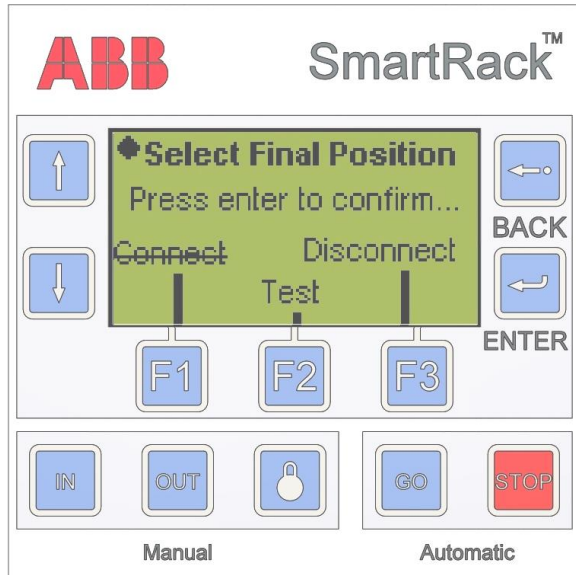


Figure 25: Select Final Position Menu

Once an initial position has been entered, the device will display a screen to select the final position (fig. 25). Note that some options, like the selected initial position, will be unavailable. Similar to the previous menu, the final end position will be highlighted and must be confirmed by pressing enter.

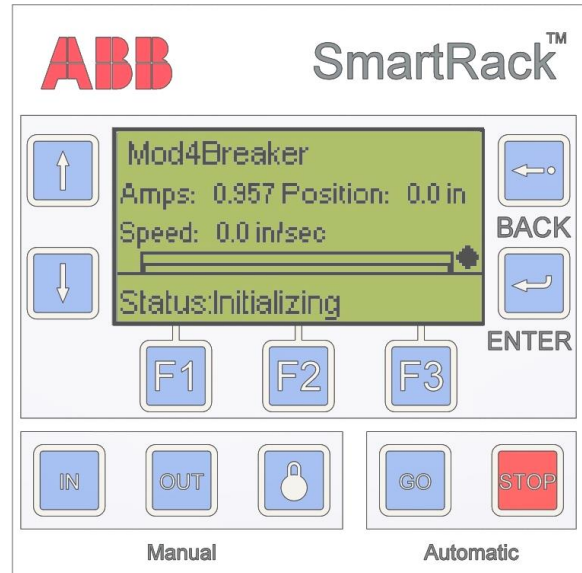


Figure 26: Auto Racking Screen

At this point the SmartRack™ is ready to start the Automatic Racking sequence. The program tells the motor to torque to one side and then the other side and then moves to the center of the hole as a calibration of the breaker or other unit. If the unit is not in a positive position such as Disconnect, Test, or Connect, then the SmartRack™ will not be able to calibrate and a centering error will be displayed. Please remove the motor and ensure that the unit is in a positive position with the position interlock in place.

After initialization, the position interlock is actuated. The operator can begin by pressing the GO button. The operator can monitor racking progress through the Automatic Racking screen (fig. 26). The Automatic Racking screen displays the device status and shows the relative position of the unit inside the cell using an incremental status bar.

When the SmartRack™ reaches 90% of its calculated travel (i.e. from connect to test), the position interlock is released. As the final 10% of travel is completed, the position interlock should make an audible click as it locks into the position.

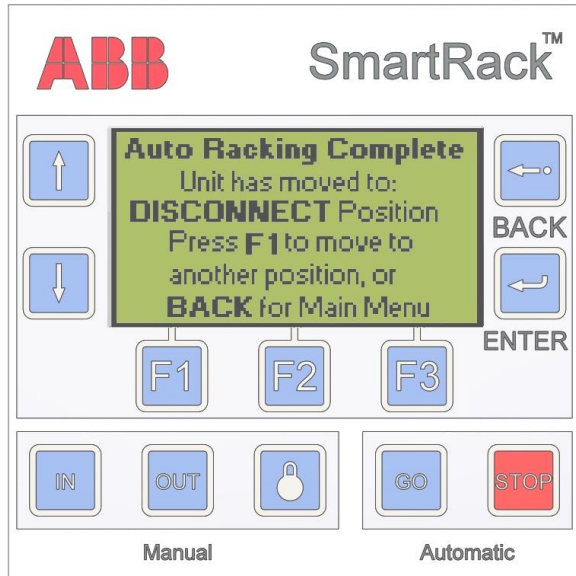


Figure 27: Racking Complete Screen

Once the SmartRack™ completes an automatic position move, a racking complete screen (fig. 27) appears showing the new current position of the unit. Press the F1 button to move to a new position, or BACK to return to the main menu.

NOTICE

After operating the SmartRack™ in an automatic or manual move of a Breaker, Auxiliary unit, or MCC Contactor, verify that the unit is in the desired position visually or manually through use of a racking handle before operating unit.

5.5 Manual Racking

Manual racking allows the operator greater control over the unit as compared to Automatic Racking. Rather than the device performing all the steps in the racking process, the operator is responsible for starting and stopping the unit being racked. Manual racking is not unit-specific. Initial and final positions are not required for operation, although other settings such as torque limit, velocity and the existence of an interlock are unit specific; therefore, considerable caution is required when using the SmartRack™ in manual mode.

If selected from the Main Menu, the racking device goes directly to the Manual Racking screen (fig. 28) and applies power to the Motor Box.

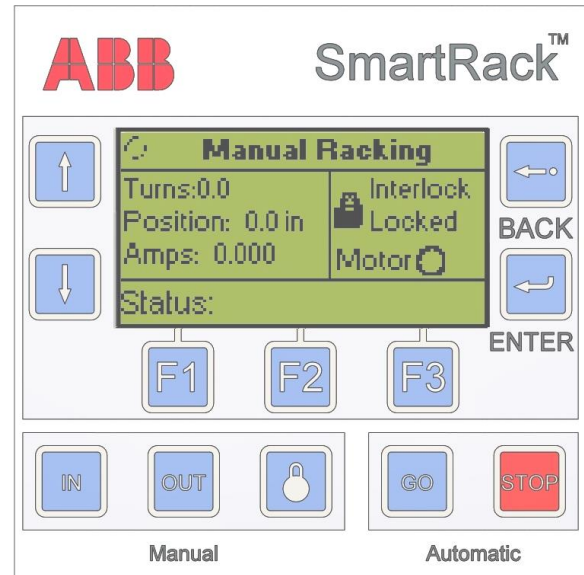


Figure 28: Manual Racking Screen

Once the Motor Box is secured to the cell door, the operator should take the hand-held Control Box and move a distance away as defined by their local

procedures. At this point the SmartRack™ is ready to start Manual Racking. This setting utilizes the three buttons to the lower left of the screen (fig. 29).

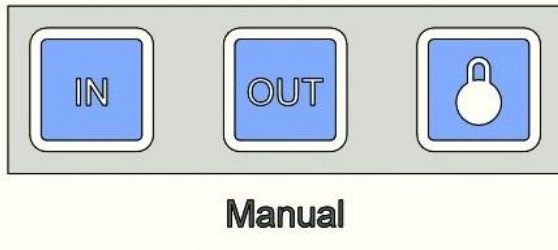


Figure 29: Manual Racking Buttons

The IN button moves the unit towards the contacts and the OUT button moves the unit towards the door. These buttons must be pushed and held to produce motion. Releasing the button will cause the unit to come to a stop. The button with a picture of a pad lock toggles the interlock. In an emergency situation, the red STOP button can be pressed to send a stop command to the servomotor and cut power to the Motor Box.

5.6 Indicator Lights

While the SmartRack™ is in operation, the indicator light on the motor box will change from green to yellow. When racking is complete the indicator light will return to green. The indicator color significance is listed in table 2.

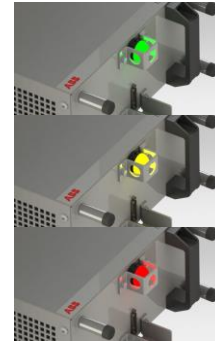


Figure 30: Motor box green, yellow and red indicator lights

Table 2: Motor Box Indicator Significance

Condition	Significance
Green	Device ready
Yellow	Warning – Racking or interlock movement in progress. All personnel should remain a safe distance from the SmartRack™ while in operation
Red	Alert – Error encountered (flickers on startup)
Off	No power to Motor Box

5.7 Racking Complete

When either Automatic or Manual Racking is complete, press the BACK button to return to the main menu. From here racking can be repeated using the process explained earlier in this section. Otherwise, return the hand-held control to its place on the cart and detach the Motor Box from the door by twisting the rotary latches on both sides. Return the Motor Box to its area on the cart and follow the instructions in Section 3.3 Storing the Device.

Always ensure that the unit is completely racked to the desired position and that the interlock pin has dropped into its slot in the racking screw, if applicable, before continuing.

6.0 Maintenance

6.1 Standard Maintenance

No regular maintenance should be required, but visual inspection prior to use is required. Possible places for wear include, but are not limited to, the socket head, the drive, the coupling, the gearhead, and the actuator. All parts have been tested to 500 operations, but improper use of the SmartRack™ could cause failure.

Running the device in manual mode and listening for irregular noise, such as a screeching, grinding, or clunking sounds is not normal particularly if the SmartRack™ is giving error messages.

Before operating the SmartRack™, a visual inspection must be conducted prior to use for general problems.

6.2 Troubleshooting

Table 3: Troubleshooting

<u>Problem</u>	<u>Solution</u>
No indicator lights illuminate when the device is switched on.	If neither light turns on then there is an issue with the power source or fuse.
Only one indicator light illuminates when the device is switched on.	One light signifies that there is an issue with the main 24VDC power supply.



Figure 31: Fuse Installation

If there is a problem in the setup of the device or while the device is operating, an error code will appear on the screen. A list of the error codes and the instructions of how to address each error is available in section 10.

7.0 Compatible Devices

7.1 Indoor Circuit Breakers

- 63 KA 1200A ADVAC
- 63 KA 2000A ADVAC
- 63 KA 3000A ADVAC
- 50 KA 1200A AMVAC/ADVAC
- 50 KA 2000A AMVAC/ADVAC
- 50 KA 3000A AMVAC/ADVAC
- 40 KA 1200A AMVAC/ADVAC
- 40 KA 2000A AMVAC/ADVAC
- 40 KA 3000A AMVAC/ADVAC
- 31.5 KA 1200A AMVAC/ADVAC
- 31.5 KA 2000A AMVAC/ADVAC
- 31.5 KA 3000A AMVAC/ADVAC
- 25 KA 1200A AMVAC/ADVAC
- 25 KA 2000A AMVAC/ADVAC
- 25 KA 3000A AMVAC/ADVAC
- 25 kA 1200 A Vmax/A
- 25 kA 2000 A Vmax/A
- 31.5 kA 1200 A Vmax/A
- 31.5 kA 2000 A Vmax/A

7.2 Auxiliary Units

- PT in Advance Compartment
- CPT/ CPT Fuse Unit in Advance Compartment
- PT in SafeGear Compartment
- CPT/ CPT Fuse Unit in SafeGear Compartment
- 1200/2000A Manual and Electric G&T's for Advance/SafeGear

- 3000A Manual and Electric G&T's for Advance/SafeGear
- 1200 A Manual G&T for ReliaGear ND
- 2000 A Manual G&T for ReliaGear ND

7.3 MCC Contactors

- Model 2 MCC Contactor

8.0 Specifications

8.1 Mechanical

Parameter	Value
Mechanical Life	500 Operations
Ambient Temperature Range	0°C to +40 °C
Continuous Output Torque	35 ft-lbs
Racking time from Disconnect to Connect	<120 seconds
Weight	25-50 lbs
Power Cable Length	25 feet
Control Cable Length	25 feet
Power Cable Size	10 gauge

8.2 Electrical

Parameter	Value
Input Voltage	120 VAC
Rated Current	<20 Amps

8.3 Environmental

This is indoor equipment and is designed to operate under standard service conditions as defined in ANSI C37.04 for breakers and C37.20.2 for the switchgear assembly

9.0 Installation of the SmartRack™ Mounting Adapter Plate

9.1 Doors with Release Lever
(Advance and SafeGear)

Breaker doors have a position release lever assembly on the front of the door (figs. 32 & 33). This lever actuates by lifting the racking pin in the withdrawable truck to allow the racking screw to rotate. The mounting hardware that mounts this lever in place can be used to also mount the SmartRack™ mounting adapter plate. The exploded view (fig. 33) should be used as a reference for disassembly and for reassembly of these parts.

washer that need to be removed from the center of the lever itself. Then there are two screws that hold the position release stop onto the door. Both the position release stop and position release lever need to be removed and discarded.



Figure 33: Position Release Lever Exploded View

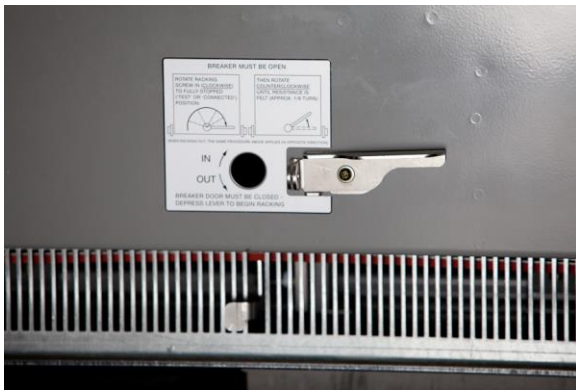


Figure 32: Position Release Lever



Figure 34: Removal of the Position Release Lever

First, the position release lever should be removed from the switchgear door (fig. 34). There is one screw, a flat washer and a lock



Figure 35: Installation of SmartRack™ mounting adapter plate

Using the same hardware from the removal of the position release stop, mount the SmartRack™ mounting plate to the Switchgear door with the replacement position release lever (fig. 35) found in the mounting adapter plate hardware bag. The longer of the two screws should be screwed into the right hand side. The end of this screw will be used to catch the end of the spring.



Figure 36: Installation of Position Release Lever

With the SmartRack™ mounting adapter plate mounted, re-assemble the spring onto the replacement position release lever, and then the latch into the housing (fig. 36).

With the latch rotated with torque against the spring, align the position release lever as shown in fig. 36.

Use the same hardware that was removed ($\frac{1}{4}$ -20 x $\frac{3}{8}$ screws) to install the position release lever.

Using the mounting adapter plate as a drilling guide, drill a $\frac{9}{32}$ inch hole through the square holes on either side of the mounting plate through the door. Install the $\frac{1}{4}$ -20 X $\frac{3}{4}$ long carriage bolts into these holes and secure with the flat & lock washers plus the nut. These fasteners are required to securely hold the mounting plate against the door during racking.



Figure 37: Lever Spring inside door

9.2 Doors for ReliaGear ND

Locate and remove the two carriage bolts (1/4-20X3/4), flat washers, lock washers, and hex nuts on the front door where the SmartRack adapter plate will mount. Retain for future use.

Remove the three #10-24 carriage bolts, spacers, washers, and hex nuts used to secure the racking hole blocking plates and retain for future use.

Remove the bushing retaining ring and slide the centering bushing out from the door. These will be re-used as well.

To install the adapter plate, align the plate with the two holes on the door and secure using the 1/4-20X3/4 bolts that were removed previously.

Insert the centering bushing and secure it using the bushing retaining ring that was removed previously.

Attach the blocking plates using the three #10-24 bolts that were removed previously.

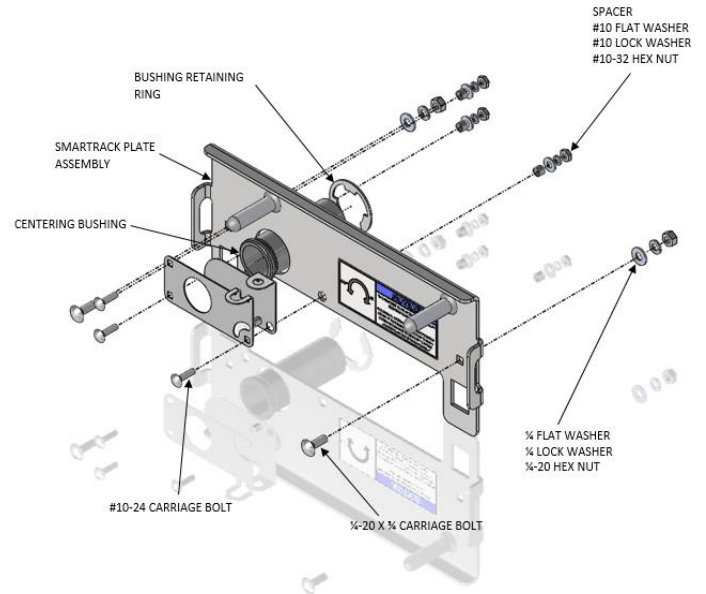


Figure 38: ReliaGear ND adapter plate

10.0 PLC Controller Error Codes



Before addressing any error involving the cart itself, turn off the racking device and make sure the indicator light on the motor box is not illuminated. Then remove the device and return it to the cart or in another safe, stable location.

Table 4: PLC Controller Error Codes

<u>Code</u>	<u>Description</u>	<u>Solution</u>
E0004	Start Up Error	Safely remove motor box. Try to manually turn handle. If handle moves, replace motor box and try again. If it is not fixed, follow unit instructions.
E0005	E-Stop	E-Stop Button was pressed and motor power has been shut off. Press the E-Stop Button again, safely remove motor box, and reinstall motor box.
E0007	Centering Error	In an automatic position move, the motor box attempts to find the center of the hole in the racking screw. If the pin is not fully seated, the center cannot be found. Remove the motor box, try to manually lock the unit into a position and reinstall the motor box.
E0012	Motor Torque Error	Motor has reached a maximum defined torque. Check the position of the breaker or auxiliary unit to be sure it is not already fully connected or disconnected.
E0013	Motor Thermal Fault	Motor has reached a maximum temperature. Remove the motor box, allow the motor to cool and reinstall the motor box.
E0014	Position Fault	The encoder in the motor does not match the output position. Inspect unit for blockage, and inspect motor box for damage.
E0015	Motor Low Voltage	Contact Support
E0016	Motor High Voltage	Contact Support
E0017	PLC Low Voltage	Contact Support
E0018	PLC High Voltage	Contact Support
E0020	Version Error	The version of the programming in the motor is not the same as the version expected by the PLC.
E0021	Motor Communication	The PLC cannot communicate with the Motor. Check that the communication cables are fully connected and the shielding is not broken.

11.0 Renewal Parts Reference

Table 5: Renewal Parts Reference

Description	Catalog Number
Complete SmartRack™ Assembly	2RGA015186A0001
Mounting Adapter Plate with Hardware (Advance/SafeGear)	2RGA017881A0002
Optional 25 ft. Motor Communication Cable	2RGA015184A0001
63kA Racking Screw Socket, 3/8" Drive X 2.25" X 16mm	2RGA014923P0001
120VAC Power Cord	2RGA015731P0001
6 A Class CC Fuse	2RGA017246P0001
Remote Hand Held PLC Control Unit	2RGA015090A0001
Motor Box Red/Green/Yellow Light	2RGA015054P0001
Fixed Caster Wheel	2RGA015176P0001
Locking Swivel Caster Wheel	2RGA015177P0001
PLC Power Supply 24VDC / 5 A CP-E 24/5.0	2RGA015156P0001
PLC Power Supply 24VDC / 20 A	2RGA015155P0001
Panel Mounted Fuse Holder	2RGA015358P0001
Std Racking Screw Socket, 3/8" Drive X 1.125" X 16mm	2RGA014924P0001
Pilot Light, Green	3WGA015348P0001
Motor Compression Socket Spring	2RGA018981P0001
Lighted Selector Switch, Green	2RGA015355A0001
ReliaGear ND Racking Screw Socket	2RGA022094P0001
Mounting Adapter Plate for ReliaGear ND	2RGA020927A0001
Zero Max Coupling	2RGA014941A0001

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1VAL104601-MB Rev. B, May 2015