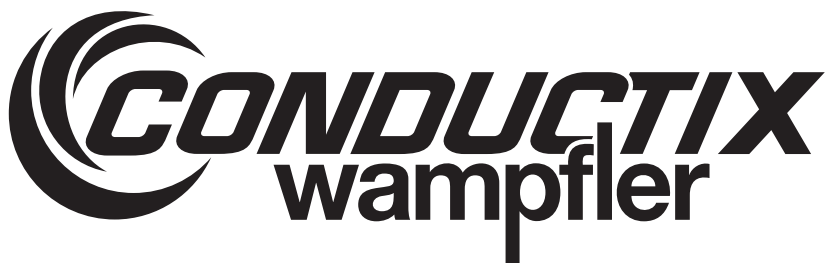
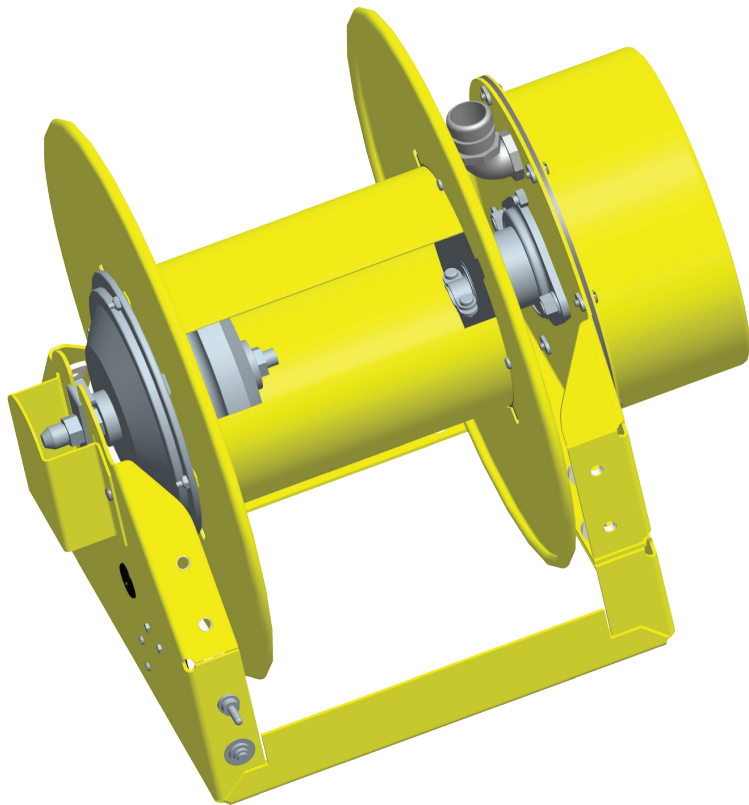


# Cable Reel Manual

## Series ECX



# Conductix Incorporated

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## 1.0 Introduction

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### RECORD

The catalog number of the reel and the serial number of the reel are required when ordering replacement parts or discussing the reel with the factory. Please record this information now in the spaces provided below.

CATALOG NO. OF REEL \_\_\_\_\_

SERIAL NO. \_\_\_\_\_

DATE INSTALLED \_\_\_\_\_

## 1.0 Introduction

The Conductix-Wampfler ECX series cable reel is designed specifically for vehicle mounted cable reeling applications. It is designed to store and manage a portable power cable. The reel is typically connected to an auxiliary generator on the vehicle and retracts the cable onto the storage spool using electrical power from the vehicle's electrical system.

## 2.0 Specifications

### 2.1 Cable Capacities

2.1.1 Maximum Voltage: 600V Standard

2.1.2 Maximum Ampacity: 30A Standard  
75A Special

2.1.3 Conductors: 3 or 4

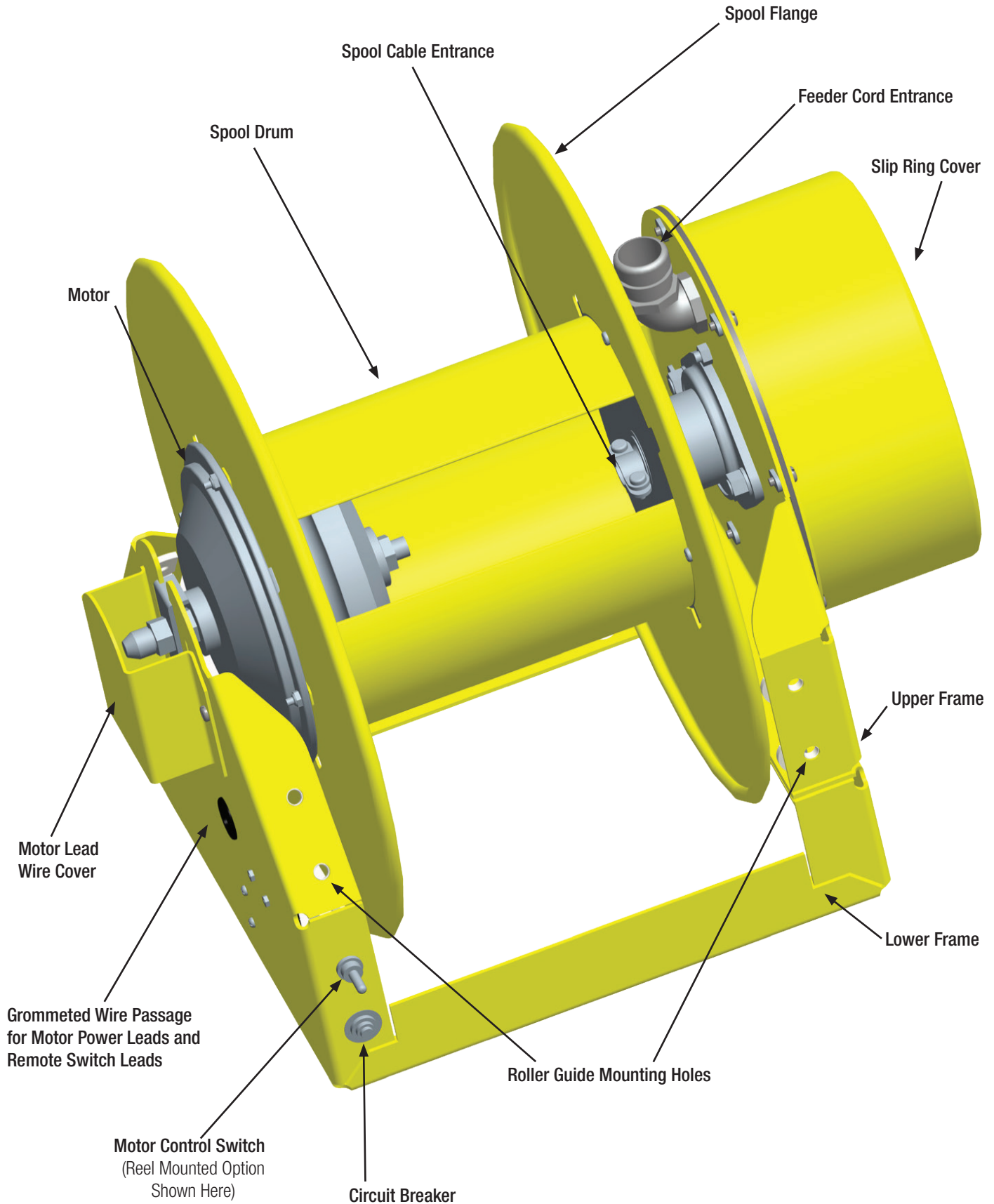
### 2.2 Drive Motor

2.1.1 Voltage: 12V DC Standard  
24V DC Special

2.1.2 Amperage: 10A Continuous, 40A Start-up

2.1.3 Protection: 15A Thermal Breaker with Manual Reset

## 3.0 Component Overview



## 4.0 Installation

### 4.1 Mounting

4.1.1 The ECX reel is designed to be mounted using four 3/8 inch mounting bolts. The reel must be mounted to a surface structurally sufficient to support the reel's weight and stresses caused by vibration during transport. The reel can be mounted base down (floor mount), base up (ceiling mount), or base vertical (wall mount). In any of the previously listed mounting positions, the spool must rotate about a horizontal axis. **DO NOT MOUNT THE REEL WITH THE SHAFT IN A VERTICAL POSITION!**

### 4.2 Electrical Connections

4.2.1 **CAUTION: The slip ring is not protected from short circuits or overloads. A circuit breaker sized appropriately for the size of the reeling cable must be installed on the output of the power source before the cable reel.**

#### 4.2.2 Reels Supplied with a Feeder Cord

4.2.2.1 Route the feeder cord as needed to the power source. Be sure to avoid sharp edges, moving parts, pinch points, or hot surfaces that will damage the cable. Install clamps or ties as needed to ensure the cable will stay in the intended locations.

4.2.2.2 Connect the cable to the power source. This can be done via a plug, junction box, or any other means to properly protect the electrical connections.

4.2.2.3 Connect the wires to the power source.

4.2.2.4 **CAUTION! The green circuit is dedicated ground and is electrically connected to the body of the reel. This circuit must be used for the grounding conductor only!**

#### 4.2.3 Reels Supplied Without a Feeder Cord

4.2.3.1 Remove the eight screws and nuts that retain the slip ring cover to the frame and remove the slip ring cover.

4.2.3.2 The reel is supplied with a watertight cord grip on the entrance for the slip ring. If a conduit connection is preferred, remove the sealing nut from the watertight cord grip and replace the cord grip with a 3/4 inch 90 degree conduit fitting of the appropriate type for the conduit in use.

4.2.3.3 Pass the supply cord or wires through the entrance fitting. Extend the supply cord or wires 4 to 6 inches into the slip ring enclosure.

4.2.3.4 Strip the conductor ends back 3/8 of an inch.

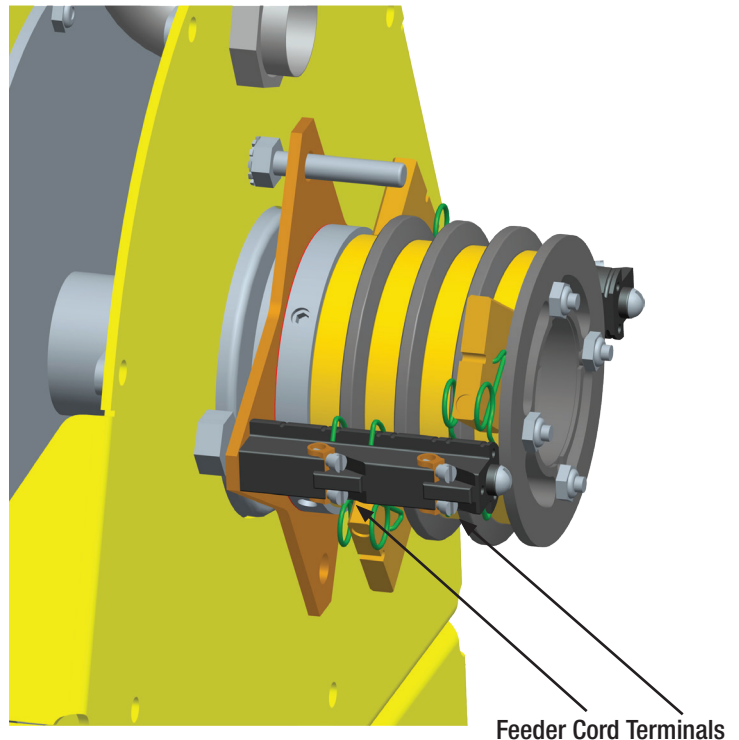
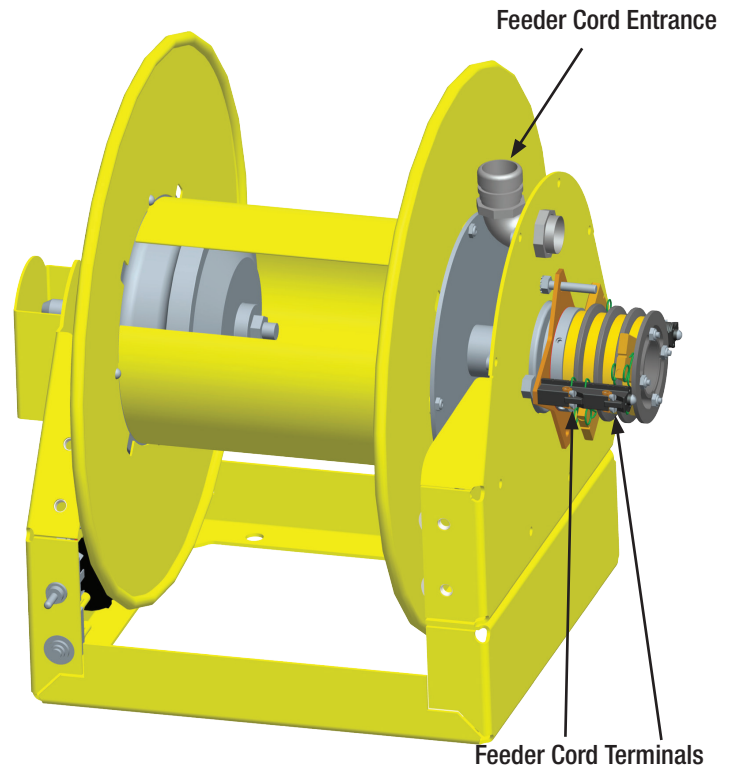
4.2.3.5 Insert the bare conductors of each wire into the appropriate terminal connection. The wire should be firmly captured in the barrel connectors.

4.2.3.6 Connect the wires as follows:

- #1 Green
- #2 Black
- #3 White
- #4 Red

4.2.3.6.1 **Note:** When using 3-conductor cables, leave conductor #4 empty as a spare.

4.2.3.6.2 **CAUTION! The #1 circuit is dedicated ground and electrically connected to the body of the reel. This circuit must be used for the grounding conductor only!**

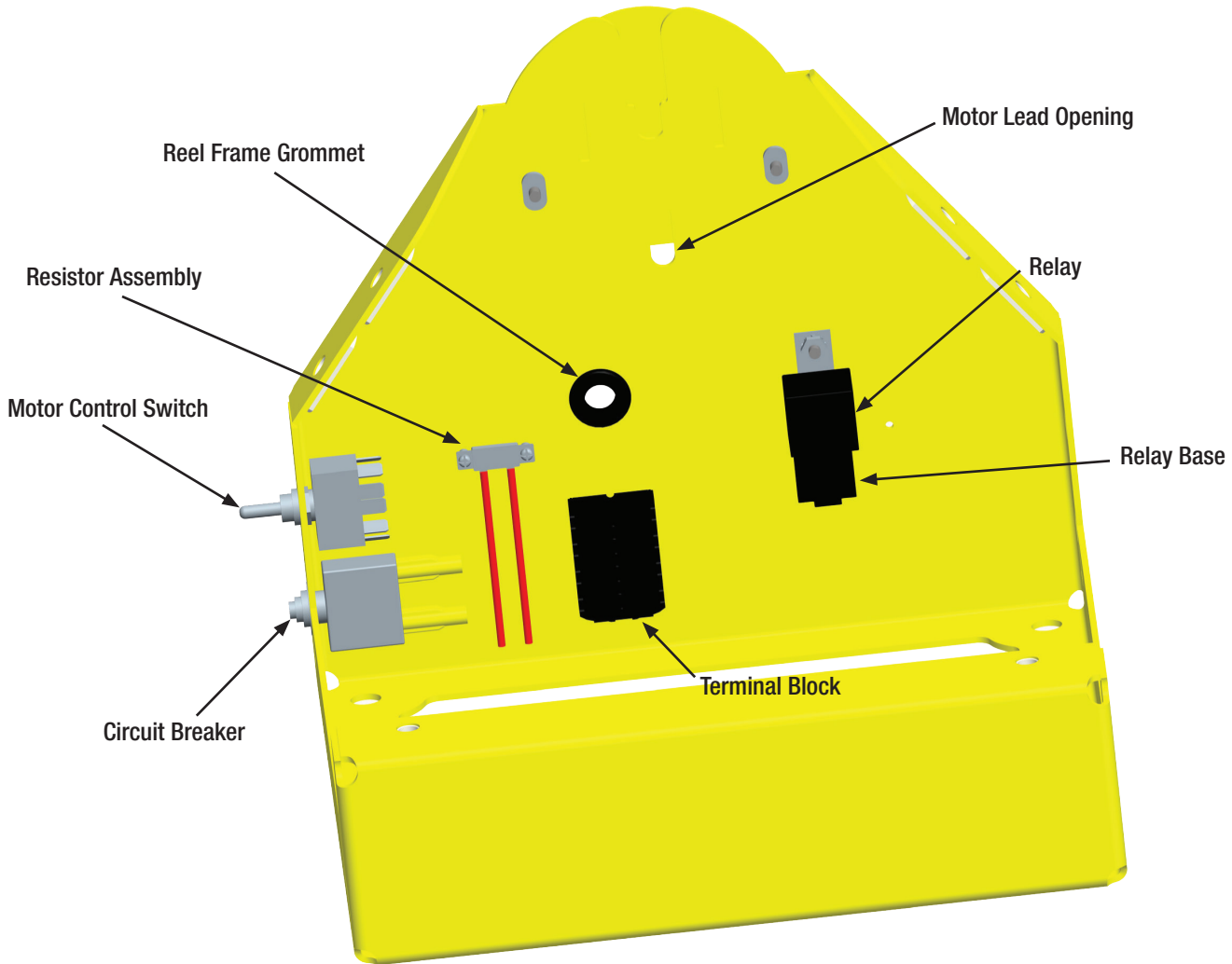


## 4.0 Installation

### 4.3 Drive Motor Power

#### 4.3.1. Drive Motor Controls with a Reel Mounted Switch

4.3.1.1 If the reel is supplied with the motor control switch mounted on the reel base, there are no connections that need to be made. The reel is supplied factory wired per the wiring diagram shown in 4.3.2.8.

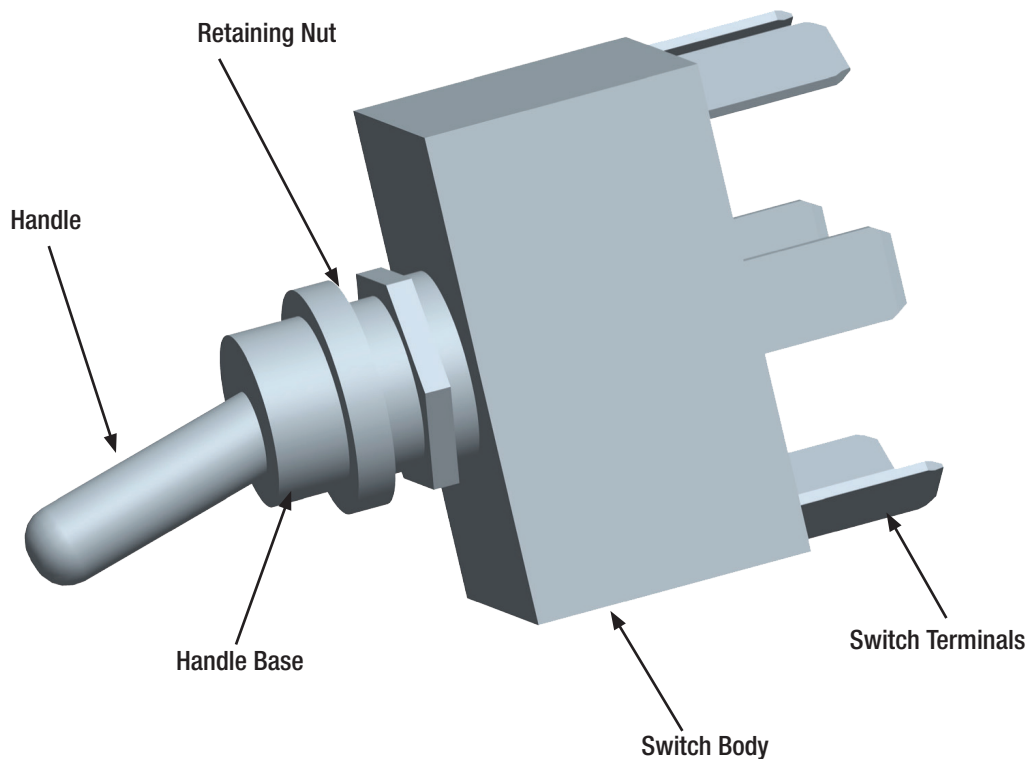


Note: Spool Assembly has been omitted from this view to show the wiring component locations. **The reel does not need to be disassembled to make electrical connections.**

## 4.0 Installation

### 4.3.2 Drive Motor Controls with a Remote Mounted Switch

- 4.3.2.1 Mount the switch in the desired location on the truck. If using the switch provided by Conductix-Wampfler drill a .500 inch (13mm) hole in the panel where the switch is to be mounted.
- 4.3.2.2 Remove the retaining nut from the handle boss of the switch.
- 4.3.2.3 Insert the switch handle boss into the drilled hole.
- 4.3.2.4 Install the retaining nut onto the handle boss and tighten.
- 4.3.2.5 Connect wires to the switch using the provided ring terminals per the following wiring diagram.
- 4.3.2.6 Route the wires from the switch to the terminal block in the reel frame. Route the wires through the grommet provided in the reel frame. Be sure to avoid sharp edges, moving parts, pinch points, or hot surfaces that will damage the cable. Install clamps or ties as needed to ensure the cable stays in the intended route.

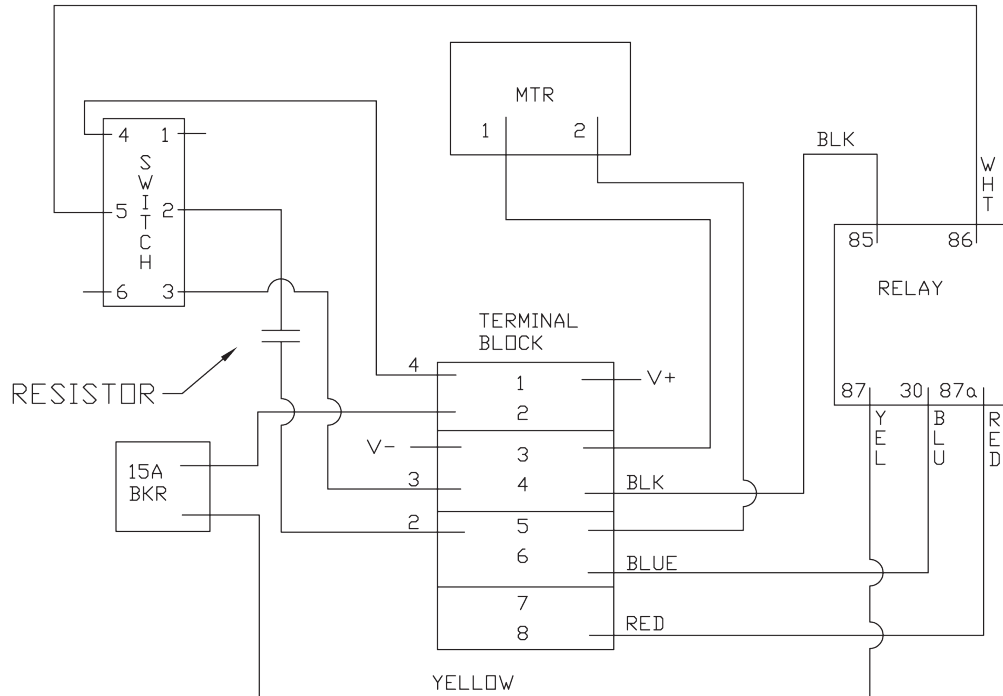




## 4.0 Installation

4.3.2.7 Strip the wire ends approximately 3/8 inches (10mm) from the ends.

4.3.2.8 Insert the wires into the appropriate terminal block according to the following wiring diagram. To insert the wires use your finger or a screw driver to press in the rectangular button on the top of the block where the wire is to be inserted. The button operates clamps for both wires that are under it. Use care not to remove any of the pre-wired wires from the terminal block.



4.3.2.9 **Note:** Reversing the positions of the red and black motor leads in the terminal block will reverse the direction of rotation for the cable retraction. Unintentionally doing this will cause improper cable guide alignment and improper cable stack on the spool resulting in cable damage and poor functionality of the reel.

4.3.2.10 Motor lead colors as follows:

Right Hand Rotation

1= Black

2= Red

Left Hand Rotation

1= Red

2= Black

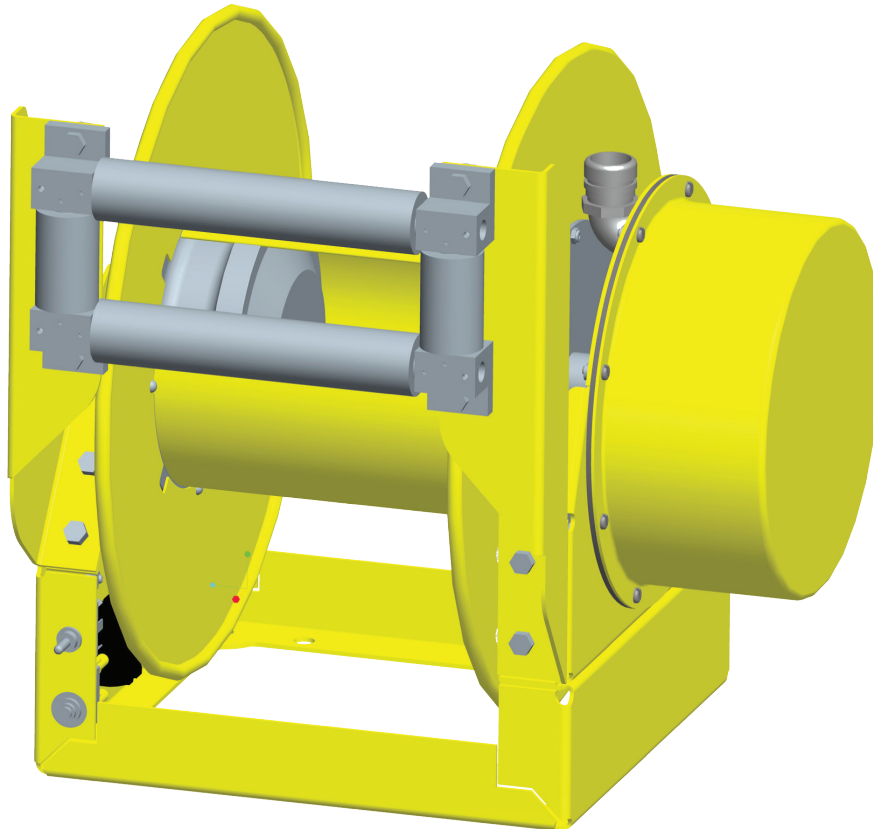
## 4.0 Installation

### 4.4 Roller Guide (Optional)

4.4.1 Optional roller guides are available to be mounted either directly on the reel or in a cabinet door or wall directly in front of the reel. Here are a few simple rules to follow when mounting a roller guide:

4.4.1.1 The roller guide must be mounted directly in front of the cable reel spool and centered between the spool flanges.

4.4.1.2 The roller guide should be mounted at an elevation where the lowest roller is approximately level with the side of the spool that the cable is paying off of. Typically the cable should pay off of the top of the spool drum.



Reel with Integrated Cable Guide

## 5.0 Operation

### 5.1 Cable Payout

5.1.1 Grab the end of the cable and pull out the desired length of cable.

5.1.1.1 **CAUTION!** Excessively fast extension of the cable can result in the spool building too much momentum. Momentum can cause the cable to unspool even after the operator has quit pulling on it.

### 5.2 Cable Retraction

5.2.1 Lay the cable straight out from the reel. The angle at which the cable enters the reel or roller guide should not exceed 15 degrees of perpendicularity to the spool.

5.2.2 Move the control switch lever to the momentary ON position. (Note: The reel can be stopped at any time by simply releasing the switch lever.)

5.2.3 As the reel retracts, monitor the cable stack on the spool to ensure it fills the spool evenly. Manually guide the cable side to side as needed.

5.2.4 When the cable is retracted, release the switch lever and position the end of the cable in a retaining position.

5.2.4.1 **CAUTION!** Neglecting to place the cable end into a retaining position can allow the cable to unspool during transport.

## 6.0 Maintenance

### 6.1 Routine Inspections

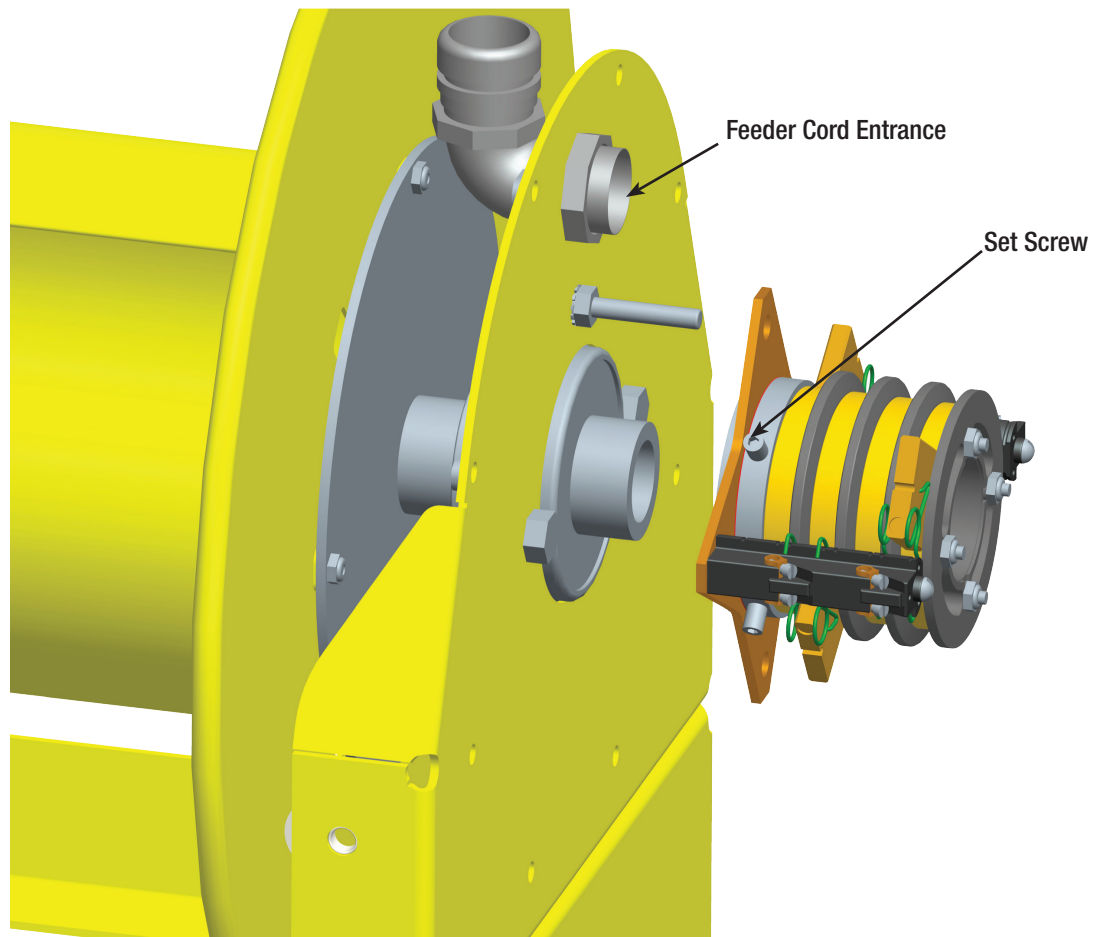
- 6.1.1 Inspect the cable for any damaged sections. Replace the cable if there is any damage to the jacket or any irregular bulges in the jacket.
- 6.1.2 Check for loose or missing hardware. Tighten or replace as needed.
- 6.1.3 Remove the slip ring cover. Clean to remove dust and dirt from the slip ring housing area and all slip ring surfaces using compressed air only.
- 6.1.4 Check the frame for cracks or other structural damage.

### 6.2 Repair

#### 6.2.1 Slip Ring Replacement

##### 6.2.1.1 Removal:

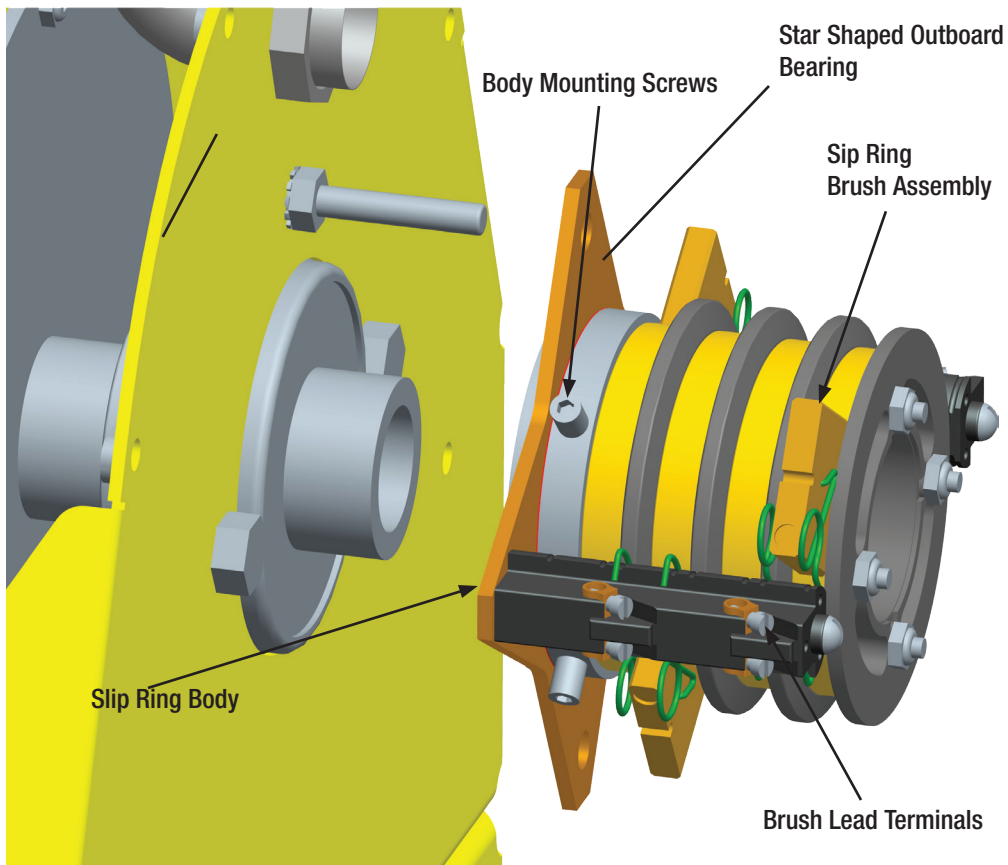
- A) Disconnect all power to both the slip ring and the motor of the reel.
- B) Remove the slip ring cover by removing the eight screws around the mounting flange of the slip ring cover.
- C) Disconnect the supply wires from the slip ring brush leads by unscrewing barrel connectors.
- D) Pull the supply wires out of the terminals.
- E) Disconnect the spool cable wire leads from the slip ring core wires removing crimp connectors.
- F) Loosen (2) 1/4-20 setscrews in drive collar.
- G) Pull the slip ring body off of the reel shaft.



## 6.0 Maintenance

### 6.2.1.2 Installation:

- A) Using the following color code, insert the spool cable wires thru shaft. Secure wire to slip ring leads using crimp connectors.  
#1 Green #2 Black #3 White #4 Red
- B) Slide the slip ring onto the shaft and ensure the drive pin is inserted in a hole on the star-shaped outboard bearing.
- C) Tighten the two set screws to secure the slip ring to the shaft.
- D) Using the following code, insert the supply wires into the barrel connectors on brush posts & tighten. Note: When using 3 conductor cable, leave conductor #4 empty as a spare  
#1 Green #2 Black #3 White #4 Red
- E) Install the slip ring cover. Use of a new gasket is recommended.



## 6.0 Maintenance

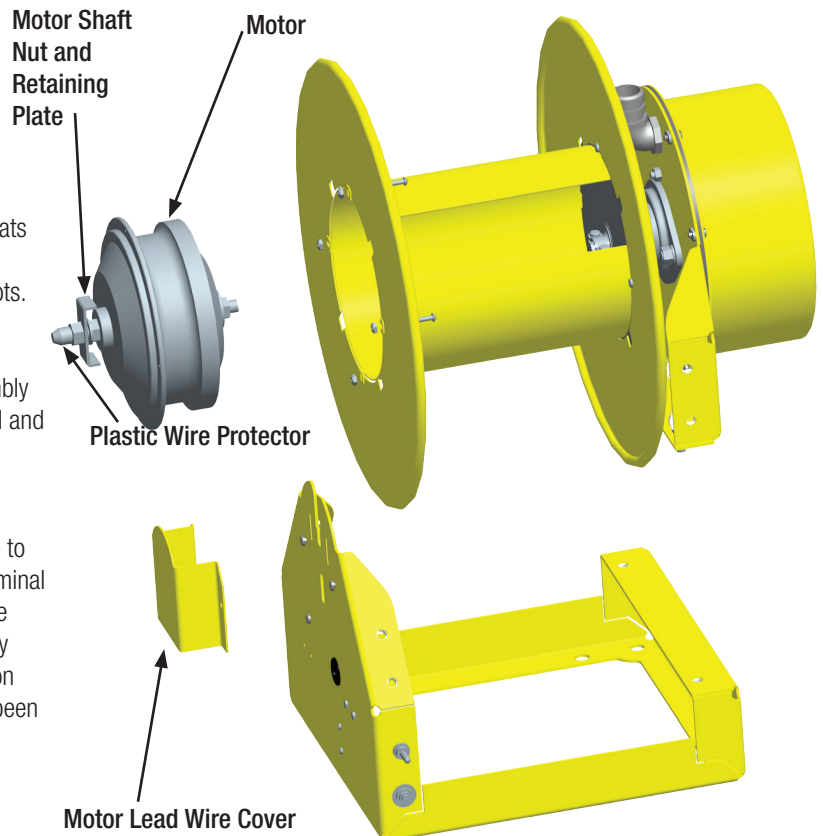
### 6.2.2 Motor Replacement

#### 6.2.2.1 Removal:

- A) Disconnect all power to both the slip ring and the motor of the reel.
- B) Unspool the cable from the reel to expose the four flange screws on the motor side of the spool.
- C) Remove the motor lead wire cover by removing the two mounting nuts.
- D) Disconnect the motor leads from the wiring terminal inside the reel frame. Note which terminals the black and red wires are attached to. (Reversing them will cause the new motor to run backwards!) Use your finger or a screw driver to depress the button on the top of the terminal block directly over the wire port and pull out the wire.
- E) Pull the motor lead wire through the slot in the frame.
- F) Unscrew the plastic wire protector from the end of the motor shaft.
- G) Unscrew the nut from the motor shaft and remove the retaining plate from under the nut.
- H) Remove the two frame bolts connecting the lower frame assembly to the upper frame assembly on the slip ring side of the reel.
- I) Lift the spool, motor, and slip ring assembly from the lower frame assembly.
- J) Remove the four flange screws from the motor side of the spool.
- K) Pull the motor out of the spool.

#### 6.2.2.2 Installation:

- A) Insert new motor into the spool with the motor leads to the outside of the spool and align the flange screw holes.
- B) Insert the flange screws and tighten.
- C) Remove the plastic motor lead wire protector, outer nut, and retaining plate from the end of the motor shaft.
- D) Slide the motor shaft into the fork of the frame aligning the flats on the shaft with the sides of the frame fork.
- E) Install the retaining plate engaging the tabs into the frame slots.
- F) Install the motor shaft nut and tighten.
- G) Install the plastic motor lead wire protector.
- H) Install the two frame bolts to connect the upper frame assembly to the lower frame assembly on the slip ring side of the spool and tighten.
- I) Insert the motor lead wires through the slot in the frame.
- J) Connect the motor lead wires to the appropriate terminals on the terminal block. To do this use your finger or a screw drive to depress the button on the terminal block directly over the terminal to be connected. Insert the wire and release the button. Give the newly installed wire and each adjacent wire a pull to verify that they are captured in the terminal block. **Note:** One button releases two terminals so be sure the adjacent wire has not been accidentally removed!
- K) Install the motor lead wire cover.



## 6.0 Maintenance

### 6.2.3 Relay Replacement

6.2.3.1 **Note:** Replacement relays must have a minimum rating of 30 amps, 12 volts DC (24 volts in some instances).

6.2.3.2 Unplug the relay base from the relay.

6.2.3.3 Remove the relay mounting screw.

6.2.3.4 Mount the new relay to the relay mounting hole in the frame.

6.2.3.5 Plug the relay base into the new relay.

### 6.2.4 Motor Control Switch Replacement

6.2.4.1 **Note:** Replacement switches must be of a dual pole, dual throw type with momentary and maintained off positions.

6.2.4.2 Disconnect all power to the motor of the reel.

6.2.4.3 Remove the retaining nut from the front of the switch.

6.2.4.4 Pull the switch out of the mounting hole to the inside of the frame.

6.2.4.5 Mark and disconnect the lead wires.

6.2.4.6 Install the lead wires on the new switch. Due to variations in switches the terminal identification may be different than the original switch. Check the function of the new switch with that of the original switch to verify proper connections. The reel motor should activate with the switch in the momentary on position.

6.2.4.7 Mount the switch into the frame and tighten the retaining nut. The switch should be mounted in a position where falling objects will not activate the reel motor.

## 6.0 Maintenance

### 6.2.5 Circuit Breaker Replacement

6.2.5.1 **Note:** Replacement circuit breakers must be of the thermal type and rated for 15 amps.

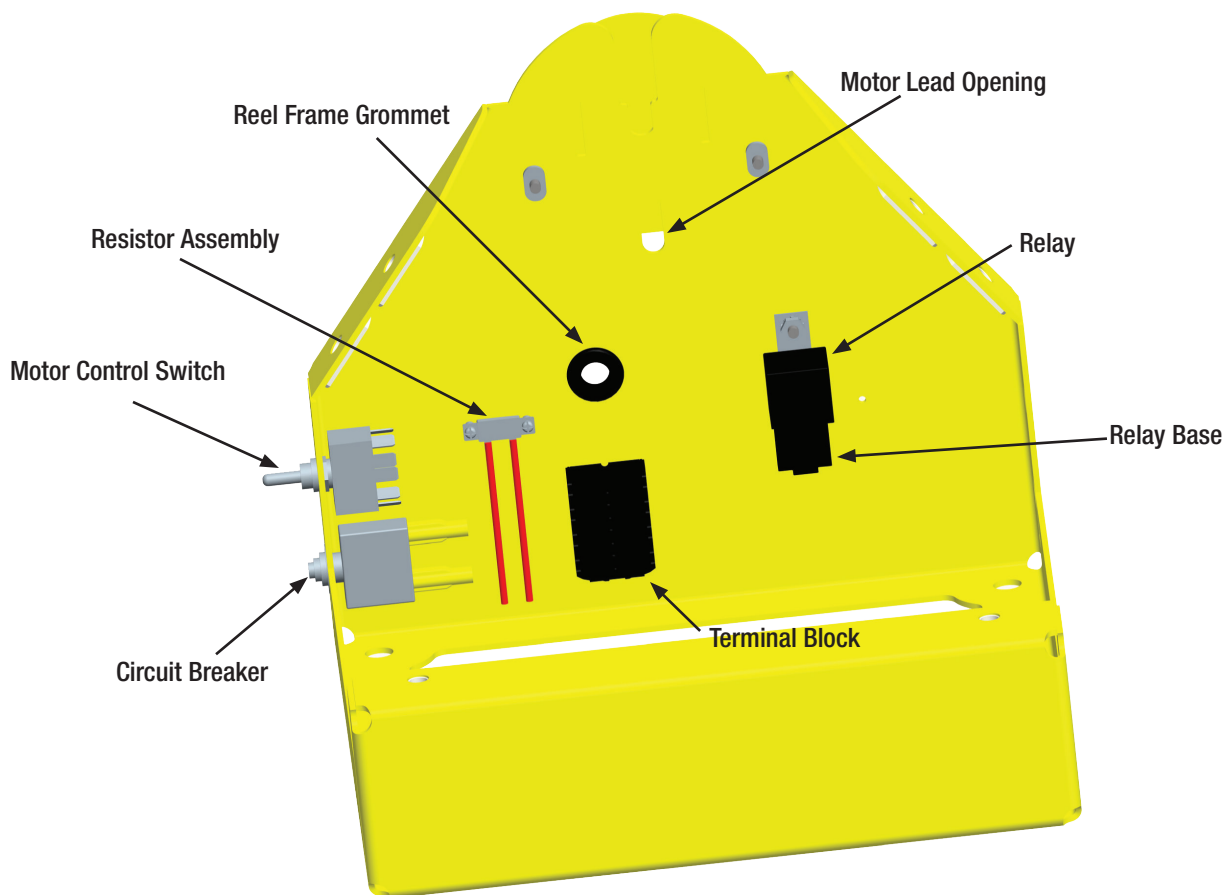
6.2.5.2 Remove the retaining nut from the front of the circuit breaker.

6.2.5.3 Pull the circuit breaker out of the mounting hole to the inside of the frame.

6.2.5.4 Remove the wire terminals from the rear of the circuit breaker.

6.2.5.5 Install the wire terminals to the new circuit breaker.

6.2.5.6 Mount the circuit breaker into the frame and tighten the retaining unit.



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