CABLE INSTALLATION

Use the following procedure to replace cable or if reel was ordered without cable.

1. Unspool new cable from shipping spool and lay out to eliminate twist.
   NOTE: This step is not essential, but will aid in winding operation of the reel and prolong cable life.

2. Remove slip ring cover.

3. Loosen counter nut on cable connector (nut is inside slip ring housing).

4. Feed one end of the cable through cable connector in spool and into the slip ring side. (See drawing below).

5. Connect individual conductors to appropriate collector brushes on slip ring assembly using crimp fitting or similar connection method.

6. Tighten cable connector in spool. Do not over-tighten.

CABLE REMOVAL

If installing or servicing hand pull reel, skip step 1 under INSTALLATION and step one under CABLE REMOVAL.

All units are provided with right hand rotation unless otherwise specified. This means that spool rotates counter-clockwise to wind cable when viewing reel from slip ring side.

Clock-type springs provide power for cable take-up. Spring must be pre-tensioned at time of installation to insure that tension is applied to cable at all times.

**INSTALLATION**

1. If reel is supplying power to a machine, insure that machinery is at position closest to reel.

2. Turn off all electric power.

3. Disconnect cable from machine or other fixtures. Remove two or three wraps until desired tension is achieved. See Figure 3.

4. Using a 3/16” Allen wrench, loosen socket head screw in tensioned during step 5 or reel capacity has been exceeded.

5. Remove entire spool and spring motor assembly.

**SPRING REPLACEMENT**

The unique SAFETYCHANGE® spring motor consists of a pre-stressed spring sealed within a housing. A pre-stressed spring is supplied sealed in its housing and the old unit should be discarded completely.

1. Disconnect cable from working end connections.

2. Wind cable onto reel to relieve all spring tension.


4. Remove V-Ring seal from spring assembly.

5. Remove nuts holding spring assembly and slide spring assembly off main shaft.

6. Slide new spring assembly onto shaft and reassemble reel by reversing above steps.

7. Adjust spring tension. Refer to INSTALLATION, Step 5.

**SLIP RING REPLACEMENT**

1. Turn off all electric power.

2. Remove cover from junction box. Disconnect input wiring.

3. Engage ratchet lock to prevent spool from rotating.

4. Remove locknuts holding slip ring cover and gasket. Remove cover.

5. Disconnect cable leads from slip ring terminals.


7. Install new slip ring assembly on shaft and re-assemble reel by reversing above steps.

**CABLE REMOVAL**

Use the following procedure to remove worn or damaged cable from reel prior to installation of new cable.

1. Machine serviced by reel to a position closest to reel. Spring will still be under pre-tension at this point.

2. Turn off all electric power.

3. Disconnect cable from machine or other fixtures. Remove cable stop and allow cable to retract onto spool. Ensure all tension is off spring by manually rotating spool (normally counter-clockwise when viewed from junction box side).

**RATCHET LOCK**

Reel is shipped with ratchet lock “engaged”. If constant spring tension is required, lock may be disengaged by locating and removing the selector plate anchor screw on the frame, rotating the selector plate to disengage position, and replacing and tightening the selector plate screw.

**WARNING**

Failure to relieve all spring tension prior to removing cable could result in damage to equipment or personal injury. Follow instructions carefully.

1. If reel is supplying power to a machine, insure that machinery is at position closest to reel.

CAUTION

1. IF mounting overhead, provide safety chain between reel and mounting surface to prevent accidental reel drop.

2. Securely mount reel in desired position using 3/8"(M10) bolts. Be sure spool centerline is aligned with cable run.

WARNING

1. Do not remove cable stop.

2. Do not over-tighten.

**NOTE**

These instructions are written for machine pull reels. Clock-type springs can be dangerous to handle. Removal of spring from housing could result in personal injury.

**CONTINUED ON BACK PAGE**
### Illustrated Parts List

#### Electrical Connections

- **Input Wire to Slip Ring**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG. Use 12 AWG for larger circuits.
- **Slip Ring Assembly**: Use 14 AWG, 16 AWG, or 18 AWG, depending on circuit size.
- **Cable**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.
- **Contactor**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.

#### Cable Chart

<table>
<thead>
<tr>
<th>Cable</th>
<th>Type</th>
<th>AWG</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-15 AWG</td>
<td>Grounded</td>
<td>14 AWG</td>
</tr>
<tr>
<td>B-14 AWG</td>
<td></td>
<td>14 AWG</td>
</tr>
<tr>
<td>C-12 AWG</td>
<td></td>
<td>12 AWG</td>
</tr>
<tr>
<td>D-10 AWG</td>
<td></td>
<td>10 AWG</td>
</tr>
<tr>
<td>E-8 AWG</td>
<td></td>
<td>8 AWG</td>
</tr>
</tbody>
</table>

#### Color Sequence for Type 60 Cable

- **120/208 Volt**: White/Black, Black/White.
- **208/277 Volt**: Orange/White, Blue/White.
- **277/480 Volt**: Green/White, Blue/White.

#### Model Number Code

- **Cable Length**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.
- **Protection Required**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.

#### Illustrated Diagram

- **Input Wiring to Slip Ring Terminal Connections**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.
- **Slip Ring Assembly**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.
- **Cable**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.
- **Contactor**: Use 14 AWG, 16 AWG, 18 AWG, or 20 AWG, depending on circuit size.

#### Notes

- **Wire size**: Wire sizes must comply with National Electrical Code and local electrical ordinances. If in doubt, consult a local electrical contractor or electrical inspector.
- **Number of Circuits**: The number of circuits may vary from two (minimum) to twelve (maximum), four circuits shown.
4. Remove cable from spool by looping over spool flange and slip ring cover.
5. Remove slip ring cover
6. Disconnect cable leads from slip ring brush terminals.
7. Loosen counterclockwise on cable connector in spool and pull cable out.

**CAUTION**

Failure to relieve all spring tension prior to removing cable could result in damage to equipment or personal injury. Follow instructions carefully.

8. Install new cable following directions below.

**CABLE INSTALLATION**

Use the following procedure to replace cable or if reel was ordered without cable. Refer to CABLE INSTALLATION REFERENCE DRAWING, below.

1. Unspool new cable from shipping spool and lay out to eliminate twist.
   - NOTE: This step is not essential, but will aid in winding operation of the reel and prolong cable life.
2. Remove slip ring cover.
3. Loosen counter-clockwise on cable connector (nut is inside slip ring housing).
4. Feed one end of the cable through cable connector in spool and into the slip ring side. (See drawing below).
5. Connect individual conductors to appropriate collector brushes on slip ring assembly using crimp fitting or similar connection method.
6. Tighten cable connector in spool. Do not overtighten.

**SPRING ADJUSTMENT**

- **WARNING**
  - If machine pull reel, move machinery to position closest to reel before adjusting spring tension. Adjusting tension with cable extended may result in damage to reel or personal injury.

Adjust tension by adding wraps (increasing tension) or removing wraps (decreasing tension) from the spool.

1. Pull about 10' of cable, allowing spool to rotate.
   - **INCREASE TENSION:** Without allowing spool to rotate, hand feed cable through hose guide until loop is large enough to slip onto spool.
   - **DECREASE TENSION:** Without allowing spool to rotate, hand feed cable back through guide to provide slack.
2. **TEST REEL OPERATION**
   - 2. Securely mount reel in desired position using 3/8" (M10) main shaft clamp nut. Support spool and spin nut off shaft.
   - 3. Engage ratchet lock to prevent spool from rotating.
   - 5. Install new slip ring assembly on shaft and re-assemble slip ring cover and gasket.

3. **INSTALLATION**
   - 1. If reel is supplying power to a machine, insure that machinery is at position closest to reel.
   - 2. Turn off all electric power.
   - 3. Remove V-Ring seal from spring assembly.
   - 4. Remove nuts holding spring assembly and slide spring assembly off main shaft.
   - 5. Slide new spring assembly onto shaft and reassemble reel by reversing above steps.
   - 6. Turn on electric power.
   - 7. Adjust spring tension. Refer to INSTALLATION, Step 5.

**SLIP RING REPLACEMENT**

1. Turn off all electric power.
2. Disconnect cover from junction box. Disconnect input wiring.
3. Engage ratchet lock to prevent spool from rotating.
4. Remove locknuts holding slip ring cover and gasket. Remove cover.
5. Disconnect cable leads from slip ring terminals.
7. Install new slip ring assembly on shaft and reassemble reel by reversing above steps.
8. CABLE REMOVAL
   - Use the following procedure to remove worn or damaged cable from reel prior to installation of new cable.
   - 1. Move machine serviced by reel to a position closest to reel. Spring will still be under pre-tension at this point.
   - 2. Turn off all electric power.
   - 3. Disconnect cable from machine or other fixtures. Remove cable stop and allow cable to retract onto spool. Ensure all tension is off spring by manually rotating spool (normally counter-clockwise when viewed from junction box side).

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**NOTE:** These instructions are written for machine pull reels. If installing or servicing hand pull reel, skip step 1 under INSTALLATION and step one under CABLE REMOVAL.

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**MAINTENANCE**

Bearings and springs are pre lubricated and require no periodic maintenance.

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**SPRING REPLACEMENT**

The unique SAFETYCHANGE® spring motor consists of a spring sealed within a housing. A preplacement spring is supplied sealed in its housing and the old unit should be discarded completely.

- 1. Turn off all electric power.
- 2. Disconnect cable from working end connections.
- 3. Wind cable onto reel to relieve all spring tension.
- 5. Install new slip ring assembly on shaft and reassemble reel by reversing above steps.

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**WARNING**

Do not attempt to remove spring from its housing. Clock-type springs can be dangerous to handle. Removal of spring from housing could result in personal injury.

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P.O. Box • 600 South Clark St.
Mayville, WI 53050
Phone 920-387-5195

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