MAINTENANCE

CAUTION

Hammers or prying tools must not be allowed to damage the flat ground joint surfaces. Do not handle covers roughly, or place them on surfaces that might damage or scratch the flat ground joint surfaces. Keep mating surfaces clean of dirt, grit, or other foreign materials.

WARNING

Electrical and mechanical inspections of all components must be performed on a regular schedule determined by the environment and frequency of use. It is recommended that inspection be performed a minimum of once a year.

1. Inspect all contact wire terminals for tightness. Discoloration due to excessive heat is an indicator of a possible problem and should be thoroughly investigated and repaired as necessary.
2. Check grounding and bonding for correct installation and secure connection.
3. Clean exterior surfaces making sure nameplates remain legible.
4. Check tightness of all screws before using.
5. Inspect housings and replace those which are broken.
6. Check contacts for signs of excessive arcing or burning and replace if necessary.

In addition to these required maintenance procedures, we recommend an Electrical Preventive Maintenance Program as described in the National Fire Protection Association Bulletin NFPA No. 70B.

DR Dead Front ARKTITE® Circuit Breaking Receptacles

APPLICATION

DR Series dead front ARKTITE® circuit breaking receptacles are designed to provide connection and distribution of secondary electrical power (480 volts AC or less) between a power source and portable electrically operated equipment such as motor-generator sets, compressors, conveyors, portable tools, lighting systems and similar equipment.

DR Series receptacles are supplied in 30 and 60 ampere ratings in both 2-wire, 3-pole and 4-wire, 4-pole designs with Style 2 grounding or 3-wire, 3-pole and 4-wire, 4-pole designs with Style 1 grounding.

DR Series receptacles are dead front where plug and receptacle contacts cannot be made or broken under load. The plug must be fully inserted in the receptacle, rotated clockwise and then moved to engage the rear contact assembly, closing the circuit from the receptacle to the plug.

DR Series receptacles are suitable for use in Class II, Groups F, G hazardous (classified) locations as defined by the National Electrical Code®. The 60 ampere, Style 2 DR receptacle is also suitable for use in Class I, Groups C, D hazardous (classified) locations.

The combinations of DR receptacles, back boxes and plugs for 30 ampere, Style 1 and Style 2 grounded units that comply with Class II, Groups F, G of the National Electrical Code are listed in Table 1.

<table>
<thead>
<tr>
<th>Receptacle</th>
<th>Plug</th>
<th>Back Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 amp, Style 1</td>
<td>480 VAC</td>
<td>3-wire, 3-pole</td>
</tr>
<tr>
<td>30 amp, Style 1</td>
<td>480 VAC</td>
<td>4-wire, 4-pole</td>
</tr>
<tr>
<td>30 amp, Style 2</td>
<td>480 VAC</td>
<td>2-wire, 3-pole</td>
</tr>
<tr>
<td>30 amp, Style 2</td>
<td>480 VAC</td>
<td>3-wire, 3-pole</td>
</tr>
<tr>
<td>30 amp, Style 2</td>
<td>480 VAC</td>
<td>4-wire, 4-pole</td>
</tr>
</tbody>
</table>

The combinations of DR receptacles, back boxes and plugs for 60 ampere, Style 1 grounded units that comply with Class II, Groups F, G of the National Electrical Code and 60 ampere, Style 2 grounded units that comply with Class I, Groups C, D and Class II, Groups F, G of the National Electrical Code are listed in Table 2.

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For each system the same colored wire must be attached to the same numbered contact on all plugs and receptacles in that system. This will assure correct system polarity and reduce the possibility of equipment damage and/or personal injury due to misphasing or electrical shorts.

If all the conductors are alike except one, that one may be assumed to be white and all the others will probably be in the same relative location from the white wire at the other end of the same cable. However, lacking positive color identification of each conductor, always test them out electrically.

Assuming conductor color identification as described earlier, connect conductors identified by color in the proper column in Table 5 through corresponding contacts in the plug and receptacle identified by number listed. The white wire should always be connected through the #2 contact.

### Table 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DR631</td>
<td>60 amp.</td>
<td>3-wire, 3-pole</td>
<td>APJ6375</td>
<td>0.75 - 1.45</td>
<td>CES42</td>
<td>1-1/4</td>
</tr>
<tr>
<td>DR641</td>
<td>60 amp., Style 1</td>
<td>4-wire, 4-pole</td>
<td>APJ6475</td>
<td>0.75 - 1.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR632</td>
<td>60 amp., Style 1</td>
<td>2-wire, 3-pole</td>
<td>APJ6385</td>
<td>0.75 - 1.45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR642</td>
<td>60 amp., Style 2</td>
<td>3-wire, 4-pole</td>
<td>APJ6485</td>
<td>0.75 - 1.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Installation

**Warnings**

1. Electrical power supply must be OFF before and during installation and maintenance. Installation and maintenance procedures must be performed by a trained and competent electrician.

2. Receptacles connected to circuits having different voltages, frequencies, or types of current (AC or DC) on the same premises shall be of such design that the attachment plugs used on these circuits are not interchangeable.

- Install back box on conduit and securely fasten in desired position, using lag bolts or machine screws.
- Refer to Table 3 for proper wire sizes.
- Refer to Pressure Terminals Section for proper termination of wire.
- Fasten receptacle to back box with four (4) screws provided.

### Table 3

<table>
<thead>
<tr>
<th>Assembly Amperage</th>
<th>Wire Size (AWG)</th>
<th>Wire Strip Length (ft.)</th>
<th>Minimum Required Contact Screw Torque (ft.-lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>#18</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>60</td>
<td>#14</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

- Securely fasten wires in proper contact. Refer to Table 4 for recommended torque values.
- Style 2 units have an extra (grounding) contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle detent spring.
- For Style 2 units, be sure the grounding contact strap is securely fastened to the housing.

### Table 4

<table>
<thead>
<tr>
<th>Assembly Amperage</th>
<th>Minimum Required Contact Screw Torque (ft.-lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

**Note:**

- Strips each individual wire to the proper dimensions in Table 3 to expose the conductors.

**CAUTION**

1. Install back box on conduit and securely fasten in desired position, using lag bolts or machine screws.
2. Refer to Table 3 for proper wire sizes.
3. Refer to Pressure Terminals Section for proper termination of wire.
4. Fasten receptacle to back box with four (4) screws provided.

**Cable Preparation**

**CAUTION**

- Unscrew contact set screws on insulator enough to permit insertion of conductors into contacts.
- Contacts are designated by a corresponding number on the backside of the insulator.
- Insert stripped wire ends into contact termination well. The properly numbered ground contacts are not numbered on the assembly. (Style 2 assemblies have ground contacts with strips.)

**Pressure Terminals**

- Unscrew contact set screws on insulator enough to permit insertion of conductors into contacts.
- Contacts are designated by a corresponding number on the backside of the insulator.
- Insert stripped wire ends into contact termination well. The properly numbered ground contacts are not numbered on the assembly. (Style 2 assemblies have ground contacts with strips.)

**Ground Styles**

- **Style 1:**
  - 4 Pole
  - Portable Cable
  - 4 Cond.
  - Grounded Receptacle
  - Grounded Thru Conduit System
  - Style 1 units ground the portable device and the plug via the grounding conductor and the plug shell to the receptacle housing. The receptacle is grounded by virtue of its being an integral part of the conduit system.

- **Style 2:**
  - 4 Pole
  - Portable Cable
  - 4 Cond.
  - Grounded Receptacle
  - 4th (Grounding) Wire - If Desired
  - Factory Installed Grounding Strap
  - Grounded Thru Conduit System and Extra Pole
  - Style 2 units have an extra grounding contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle detent spring.

**POLARITY AND PHASE ROTATION**

The DR Series ARKITITE receptacle will mate only with Crouse-Hinds APJ or NPJ Series ARKITITE plugs of the same style, model, and rating. Always compare catalog number of plug and receptacle if in doubt.

The DR Series receptacles are polarized so that the plug can enter the receptacle only one way. Also, the mating contacts in the plug and receptacle are identified by numbers on the insulating nipples. Contact members in a plug always mate with those in a receptacle identified by the same number. This assures proper polarity or phase rotation of conductors through the plug and receptacle.

**Table 5**

<table>
<thead>
<tr>
<th>Style</th>
<th>Color of Conductors</th>
<th>Receptacle and Plug Contact Identification By Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-wire</td>
<td>White*</td>
<td>#2</td>
</tr>
<tr>
<td>4-pole</td>
<td>White*</td>
<td>#2</td>
</tr>
<tr>
<td>Style 1</td>
<td>Red</td>
<td>#1</td>
</tr>
<tr>
<td>Style 2</td>
<td>Green**</td>
<td>#3</td>
</tr>
</tbody>
</table>

---

* White wire or terminal must not be used for grounding. If one conductor is uninsulated, or identified green, this wire is for grounding the portable device. If no green or bare wire is available, another wire may be connected through plug and receptacle connections to conduit or some other non-current-carrying conductor permanently grounded in accordance with Article 700 of the National Electrical Code. Use type AWG.

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**Electrical Testing**

Do not connect power until the following electrical tests have been performed:

- Make continuity check of wiring to verify correct phasing and grounding connections.
- Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.

**Warning**

Before energizing this system, verify polarity correctness with a continuity check. Correct polarity MUST be ascertained before using the equipment. Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.
Table 2

<table>
<thead>
<tr>
<th>Receptacle</th>
<th>Plug</th>
<th>Back Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catalog No.</td>
<td>Rating</td>
<td>Poles</td>
</tr>
<tr>
<td>DR631</td>
<td>60 amp, Style 1 480 VAC</td>
<td>3-wire, 3-pole</td>
</tr>
<tr>
<td>DR641</td>
<td>60 amp, Style 2 480 VAC</td>
<td>4-wire, 4-pole</td>
</tr>
<tr>
<td>DR632</td>
<td>60 amp, Style 2 480 VAC</td>
<td>2-wire, 3-pole</td>
</tr>
<tr>
<td>DR642</td>
<td>60 amp, Style 2 480 VAC</td>
<td>3-wire, 3-pole</td>
</tr>
</tbody>
</table>

INSTALLATION

DR Series receptacles should be installed, inspected, operated and maintained by qualified and competent personnel.

**WARNING**

1. Electrical power supply must be OFF before and during installation and maintenance. Installation and maintenance procedures must be performed by a trained and competent electrician. After the installation and maintenance, the unit should be isolated and de-energized.

2. Receptacles connected to circuits having different voltages, frequencies or types of current (AC or DC) on the same premises shall be of such design that the attachment plugs used on these circuits are not interchangeable.

- Install back box on conduit and secure it with conduit straps. Do not use wire ties.
- Refer to Table 3 for proper wire sizes.
- Refer to Pressure Terminals Section for proper termination of wire.
- Fasten receptacle to back box with four (4) screws provided.

CABLE PREPARATION

Table 4

<table>
<thead>
<tr>
<th>Assembly</th>
<th>Wire Size (AWG)</th>
<th>Wire Strip Length (in.)</th>
<th>Minimum Required Contact Screw Torque (ft.-lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12, 10, 8, 6</td>
<td>1/2</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>6, 4</td>
<td>Strip gate on insulator</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

- Securely fasten wires in proper contacts. Refer to Table 4 for recommended torque values.
- Style 2 units have an extra (grounding) contact which forms a parallel circuit with the circuit formed by the plug sleeve and receptacle decept spring.
- For Style 2 units, be sure the grounding contact is securely fastened to the housing.

**WARNING**

Before installing a DR Series receptacle, a wiring pattern must be established for your system. Locations having different voltages, frequencies or types of current (AC or DC) must have interchangeable attachment plugs as stated in paragraph 210-7F of the National Electrical Code.

Usually the conductors in a cable or conduit system are identified by the color of the insulation covering each individual conductor. We assume that these colors agree with those given in Section 210-5 of the National Electrical Code for multi-wire branch circuits; also, that there is an additional wire in the cable or conduit system that is uninsulated or identified green that is for grounding and complies with Section 250-42 and 250-45 of the National Electrical Code. If the conductors are not identified with exactly these colors, these colors may be assumed when making proper connections.

For each system the same colored wire must be attached to the same numbered contact on all plugs and receptacles in that system. This will assure correct system polarity and reduce the possibility of equipment damage and/or personal injury due to misphasing or electrical shocks.

If all the conductors are alike except that, one may be assumed to be white and all the others will probably be in the same relative location from the white wire at the other end of the same cable. However, lacking positive color identification of each conductor, always test them out electrically.

Assuming conductor color identification as described earlier, connect conductors identified by color in the proper columns in Table 5 through corresponding contacts in the plug and receptacle identified by number listed. The white wire should always be connected through the #2 contact.

**POLARITY AND PHASE ROTATION**

The DR Series ARKITE receptacle will mate only with Crouse-Hinds APJ or NJP Series ARKITE plugs of the same style, model and rating. Always compare catalog number of plug and receptacle if in doubt.

**WARNING**

Before energizing this system, verify polarity correctness with a continuity check. Correct polarity MUST be ascertained before using the equipment. Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.

**ELECTRICAL TESTING**

Do not connect power until the following electrical tests have been performed:

- Make continuity check of wiring to verify correct phasing and grounding connections.
- Check insulation resistance to be sure system does not have any short circuits or unwanted grounds.
1. Inspect all contact wire terminals for tightness. Discoloration due to excessive heat is an indicator of a possible problem and should be thoroughly investigated and repaired as necessary.
2. Check grounding and bonding for correct installation and secure connection.
3. Clean exterior surfaces making sure nameplates remain legible.
4. Check tightness of all screws before using.
5. Inspect housings and replace those which are broken.
6. Check contacts for signs of excessive arcing or burning and replace if necessary.

In addition to these required maintenance procedures, we recommend an Electrical Preventive Maintenance Program as described in the National Fire Protection Association Bulletin NFPA No. 70B.

**APPLICATION**

DR Series dead front ARKTITE® circuit breaking receptacles are designed to provide connection and distribution of secondary electrical power (480 volts AC or less) between a power source and portable electrically operated equipment such as motor-generator sets, compressors, conveyors, portable tools, lighting systems and similar equipment.

DR Series receptacles are supplied in 30 and 60 ampere ratings in both 2-wire, 3-pole and 4-wire, 4-pole designs with Style 2 grounding or 3-wire, 3-pole and 4-wire, 4-pole designs with Style 1 grounding.

DR Series receptacles are dead front where plug and receptacle contacts cannot be made or broken under load. The plug must be fully inserted in the receptacle, rotated clockwise and then moved to engage the rear contact assembly, closing the circuit from the receptacle to the plug.

DR Series receptacles are suitable for use in Class II, Groups F, G hazardous (classified) locations as defined by the National Electrical Code®. The 60 ampere, Style 2 DR receptacle is also suitable for use in Class I, Groups C, D hazardous (classified) locations.

The combinations of DR receptacles, back boxes and plugs for 30 ampere, Style 1 and Style 2 grounded units that comply with Class II, Groups F, G of the National Electrical Code are listed in Table 1.

### Table 1

<table>
<thead>
<tr>
<th>Receptacle</th>
<th>Plug</th>
<th>Back Box</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Catalog No.</strong></td>
<td><strong>Rating</strong></td>
<td><strong>Poles</strong></td>
</tr>
<tr>
<td>DR331 30 amp, Style 1 480 VAC</td>
<td>3-wire, 3-pole</td>
<td>APJ3375</td>
</tr>
<tr>
<td>DR341 30 amp, Style 1 480 VAC</td>
<td>4-wire, 4-pole</td>
<td>APJ3475</td>
</tr>
<tr>
<td>DR332 30 amp, Style 2 480 VAC</td>
<td>2-wire, 3-pole</td>
<td>APJ3365</td>
</tr>
<tr>
<td>DR342 30 amp, Style 2 480 VAC</td>
<td>3-wire, 3-pole</td>
<td>APJ3465</td>
</tr>
</tbody>
</table>

The combinations of DR receptacles, back boxes and plugs for 60 ampere, Style 1 grounded units that comply with Class II, Groups F, G of the National Electrical Code and 60 ampere, Style 2 grounded units that comply with Class I, Groups C, D and Class II, Groups F, G of the National Electrical Code are listed in Table 2.

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