BHR Dead Front Interlocked Receptacles and Switches; BHP Plugs

IF119

Installation and Maintenance Information

APPLICATION

BHR Series interlocked receptacles and switches with BHP Series plugs are designed to provide connection and distribution of secondary electrical power (480 volts or less) between a power source and portable or stationary electrical equipment. BHR Series receptacles and BHP plugs are supplied in 2-wire, 3-pole; 3-wire, 4-pole; and 4-wire, 5-pole arrangements at 30, 60 and 100 ampere ratings.

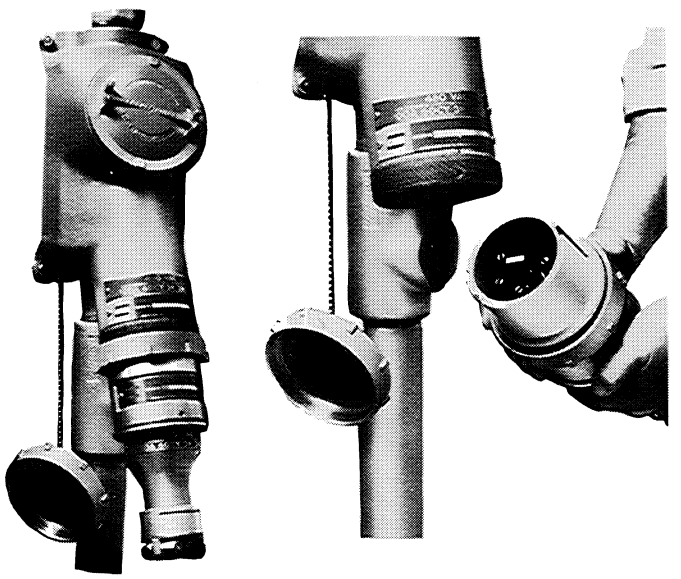
BHR receptacle and BHP plug combinations are designed to provide for making or breaking of the circuit at full rated load through a built-in rotary switch that is operated automatically when the plug is inserted or withdrawn. The switch is operated by a helical blade in the center of the plug. The plug and receptacle contacts do not make or break under load. When the plug is inserted, the plug and receptacle contacts engage before the switch closes. When the plug is withdrawn, the switch opens before the plug and receptacle contacts disengage.

BHR Series interlocked receptacles and switches and BHP plugs are suitable for use in Class I, Groups B, C, D; Class II, Groups F, G; and Class III hazardous (classified) areas as defined by the National Electrical Code® and in damp, wet, or corrosive locations; indoors or outdoors.

CAUTION

To reduce the risk of ignition of hazardous atmospheres, do not use in Class II, Group F locations that contain electrically conductive dusts.

BHR receptacles and BHP plugs must be installed, inspected, maintained and operated by qualified and competent personnel.



RECEPTACLE INSTALLATION

WARNING

Electrical power must be turned **off** before and during installation and maintenance.

1. Select a mounting location that will provide suitable strength and rigidity for supporting the receptacle and attached plug.
2. Securely attach BHR receptacle to the mounting surface with four bolts or screws in the four mounting holes located at each corner of the receptacle. See Figure 1. Secure end of dust cover bead chain under one of bottom screws or bolts.

CAUTION

Mount BHR receptacle in vertical position with receptacle contacts pointing downward **only**.

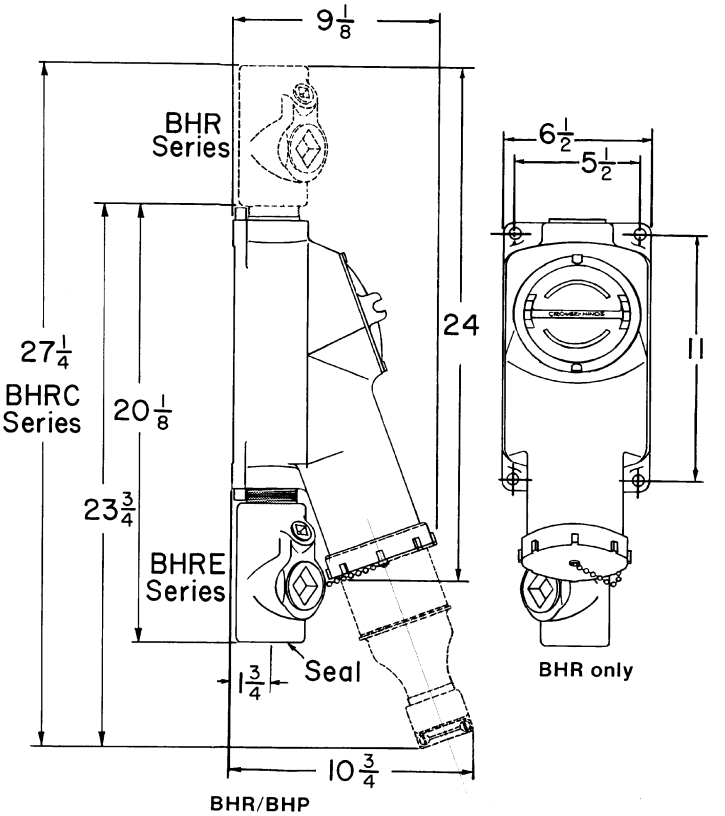


Figure 1.
Mounting Dimensions (inches)

Note:
The recommended mounting height from ground or floor level to the bottom mounting holes is 42 to 52 inches.

* National Electrical Code is a Registered Trademark of the National Fire Protection Association.

3. Thread conduit into the sealing fitting(s) welded to the BHR receptacle housing.

   NOTE: If BHR is mounted in a vertical position with conduit run into the top, install a sealing fitting, close-nippled to the enclosure, appropriate for the hazardous area classification. A drain seal is strongly recommended for areas subject to condensation.

4. Remove threaded cover from the receptacle and pull all wires through conduit into receptacle.

5. Make the electrical connections to the flexible leads in the receptacle following methods that comply with the *National Electrical Code* and all local codes.

WARNING

A wiring pattern must be established for your system. Locations having different voltages, frequencies or types of curent (AC or DC) **must not** have interchangeable attachment plugs per Section 210-7 of the *National Electrical Code.* For each system the same colored wire must be connected to the same numbered contact on all plugs and receptacles in that system. This will assure correct system polarity and eliminate the possibility of equipment damage and/or personal injury due to misphasing or shorts. **Always test before energizing.**

Markings on the receptacle leads are the same as the markings on the front face of the receptacle insulator.

Grounding: BHR receptacles and BHP plugs are provided with an extra grounding pole. In addition, direct connection is provided between the plug and receptacle housings and the grounding pole. The BHR receptacle is then grounded through the conduit system. In the BHP plugs, the equipment grounding wire is attached to the grounding pole.

6. After making electrical connections, place wires into the housing and replace the threaded cover and tighten it securely.

7. Test wiring for correctness with continuity checks and for unwanted grounds with insulation resistance tester.

8. Pour CHICO®sealing compound into sealing fittings in accordance with the instruction supplied on the sealing compound package label and with the CHICO X fiber.

PLUG INSTALLATION

1. Disassemble BHP plug after loosening the set screw located at the middle of the plug assembly. See Figure 2.

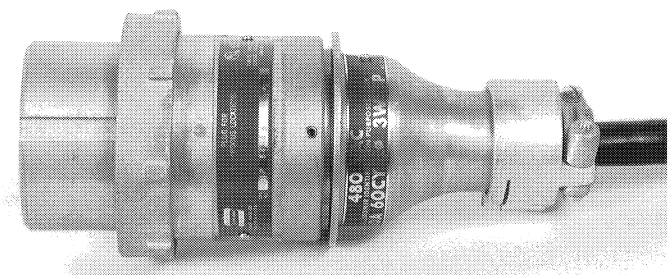


Figure 2.
BHP Plug

2. Unscrew handle assembly, then remove rear insulator, helical blade o-ring gasket and plug contacts.

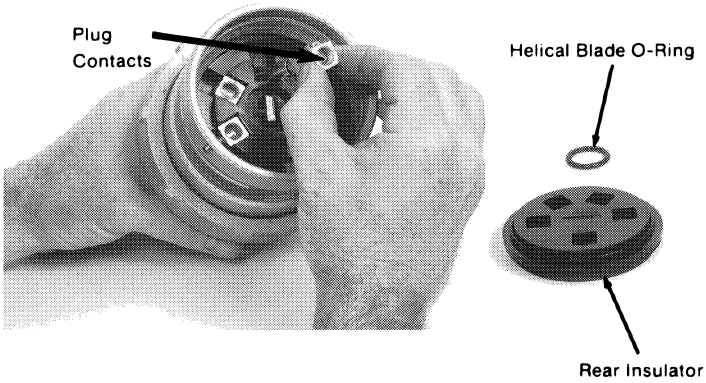


Figure 3.
Plug Disassembly — 3-Wire, 4-Pole Plug Shown

Note: The front insulator is **not** removable. It is permanently polarized at the factory to conform with the values indicated on the electrical data nameplate.

3. Reassemble by sliding clamping nut and slip washer over cord, then the appropriate cord bushing that fits snuggly over cord jacket (from selection supplied with plug) and then the handle body.

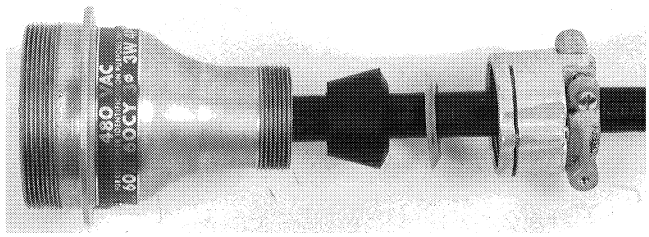


Figure 4.
Handle Assembly

4. Strip outer cord jacket back 5 inches and each individual conductors' insulation back one inch.

CAUTION

Do not cut into the individual conductor insulation when removing the outer cord jacket. Do not damage the conductor when removing its insulation.

5. Insert each conductor through the rear insulator, making certain that they follow the polarity pattern established for your system.

6. Loosen the pressure connector screws in the contacts and insert each conductor into the contact recesses until conductor bottoms in recess. Tighten the screws securely to 30 in. lbs. torque captivating each conductor and the rear insulator.

7. Insert the contacts back into the proper cavities of the front insulator making certain that the screw lugs face outward radially and are seated firmly into the front insulator.

8. Replace helical blade o-ring gasket then push down rear insulator over contacts.

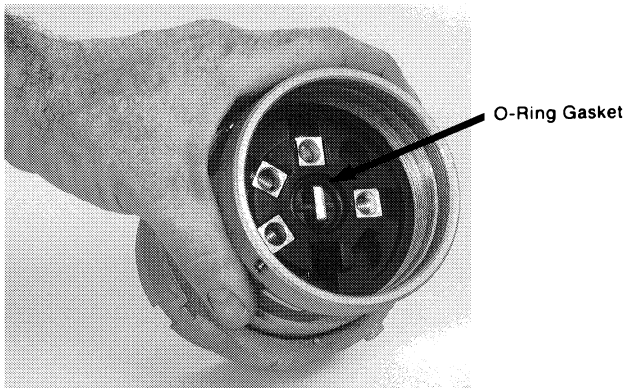


Figure 5.
Helical Blade O-Ring Gasket
(Shown without conductors.)

9. Rethread handle body onto front contact assembly and secure with set screw.

10. Slide the cord bushing into the handle body recess and then tighten the cord clamping nut securely, tightening all set screws in the clamp assembly to 30 in. lbs. torque.

ELECTRICAL TESTING

CAUTION

Do not connect to 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.

PLUG and RECEPTACLE OPERATION

1. Insert plug into receptacle with a single inward thrust.
2. Tighten plug clamping ring nut onto receptacle to assure a raintight connection.
3. Remove plug by loosening clamping ring nut, then disconnecting plug from receptacle with a single downward pull.

BHR RECEPTACLE INSERT ASSEMBLY REPLACEMENT

CAUTION

The receptacle insert assembly is polarized for specific voltage and current values shown on the electrical data nameplate. Replace assembly with a new assembly rated at the same specific voltage and current only.

1. Turn off all electrical power to receptacle, then remove threaded cover and disconnect flexible leads from receptacle insert assembly to supply wire. Disconnect grounding strap from receptacle housing.

2. Remove the electrical data nameplate (red, yellow, or blue) to uncover the insert assembly polarizing set screw.

3. Remove the set screw.

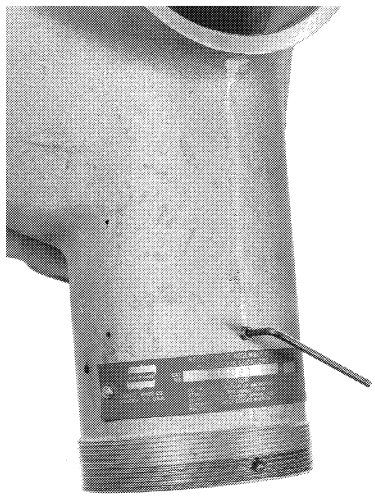


Figure 6.
BHR Receptacle Insert Assembly Set Screw

4. Rotate the insert assembly counterclockwise to remove.

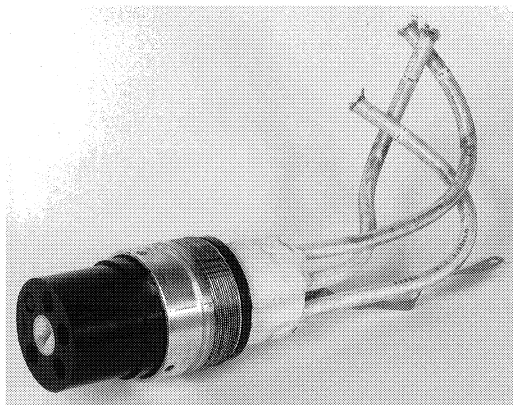


Figure 7.
BHR Insert Assembly
(3-Wire, 4-Pole Shown)

5. Install replacement assembly, tightening it by turning clockwise. Stop when the face of the assembly is approximately even with the outside face of the housing.

6. Align the set screw hole in the insert assembly with the hole in the housing then replace and securely tighten set screw.

7. Replace electrical data nameplate and secure with two screws removed previously.

8. Reconnect the flexible leads to the supply wires following the wire pattern established for your system in compliance with the *National Electrical Code* and all local codes. Reconnect grounding strap to receptacle housing.

CAUTION

Do not connect the 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.

9. Replace and securely tighten screw cover.

MAINTENANCE

Electrical and mechanical inspection 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.

WARNING

If any parts of the plug or receptacle appear to be missing, broken, or shows signs of damage,
DISCONTINUE USE IMMEDIATELY.
Replace with the proper replacement part(s) before continuing service.

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. Check gaskets for deterioration and replace if necessary.
4. Clean exterior surfaces making sure nameplates remain legible.
5. Inspect cord clamping nut tightness to ensure proper cord gripping.
6. Check tightness of all screws before using.
7. Inspect housings and replace those which are broken.
8. 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.*

ELECTRICAL RATING

Maximum Voltage: 480VAC @ 50-400 Hz.
Maximum Continuous Current: 30, 60, or 100 Amperes.

CROUSE-HINDS ECM

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