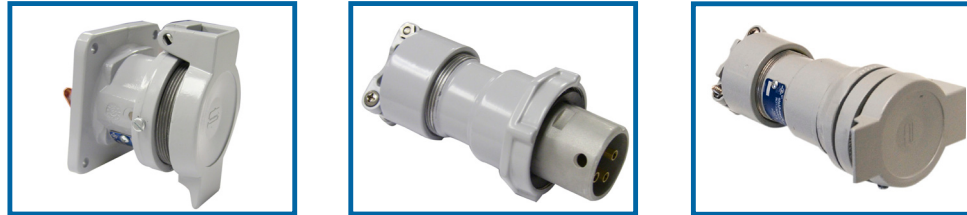


Receptacles, Plugs and Connectors

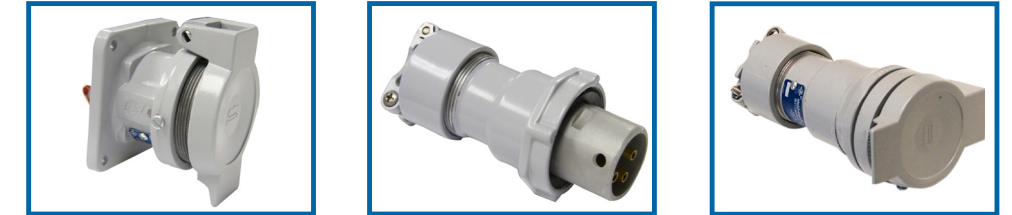
NEMA 4X Watertight  
600 VAC / 250 VDC  
50 - 400 Hz



DESCRIPTION AND CONFIGURATION:	RECEPTACLE	PLUG		CORD CONNECTOR	
		CABLE RANGE	CAT. NO.	CABLE RANGE	CAT. NO.
2 Wire 2 Pole Style 1		CDR3022	.390-1.375" : CCP3022BC	.390-1.375" : CRC3022BC	
2 Wire 3 Pole Style 2		CDR3023	.390-1.375" : CCP3023BC	.390-1.375" : CRC3023BC	
3 Wire 3 Pole Style 1		CDR3033	.390-1.375" : CCP3033BC	.390-1.375" : CRC3033BC	
3 Wire 4 Pole Style 2		CDR3034	.390-1.375" : CCP3034BC	.390-1.375" : CRC3034BC	
4 Wire 4 Pole Style 1		CDR3044	.390-1.375" : CCP3044BC	.390-1.375" : CRC3044BC	

Receptacles, Plugs and Connectors

NEMA 4X Watertight  
600 VAC / 250 VDC  
50 - 400 Hz



DESCRIPTION AND CONFIGURATION:	RECEPTACLE	PLUG		CORD CONNECTOR	
		CABLE RANGE	CAT. NO.	CABLE RANGE	CAT. NO.
2 Wire 2 Pole Style 1		CDR6022	.440-1.375" : CCP6022BC	0.440-1.375" : CRC6022BC	
2 Wire 3 Pole Style 2		CDR6023	.440-1.375" : CCP6023BC	0.440-1.375" : CRC6023BC	
3 Wire 3 Pole Style 1		CDR6033	.440-1.375" : CCP6033BC	0.440-1.375" : CRC6033BC	
3 Wire 4 Pole Style 2		CDR6034	.440-1.375" : CCP6034BC	0.440-1.375" : CRC6034BC	
4 Wire 4 Pole Style 1		CDR6044	.440-1.375" : CCP6044BC	0.440-1.375" : CRC6044BC	

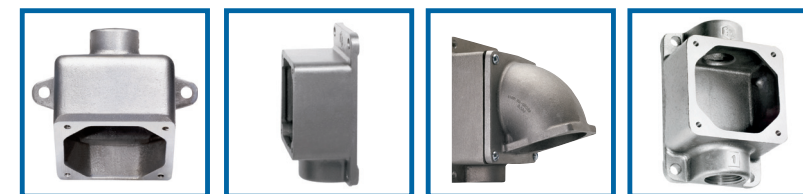
Back Boxes (for Receptacles)



HUB SIZE	CEE	CERH	CERC
1/2"	CEE13	CERH13	CERC13
3/4"	CEE23	CERH23	CERC23
1"	CEE33	CERH33	CERC33

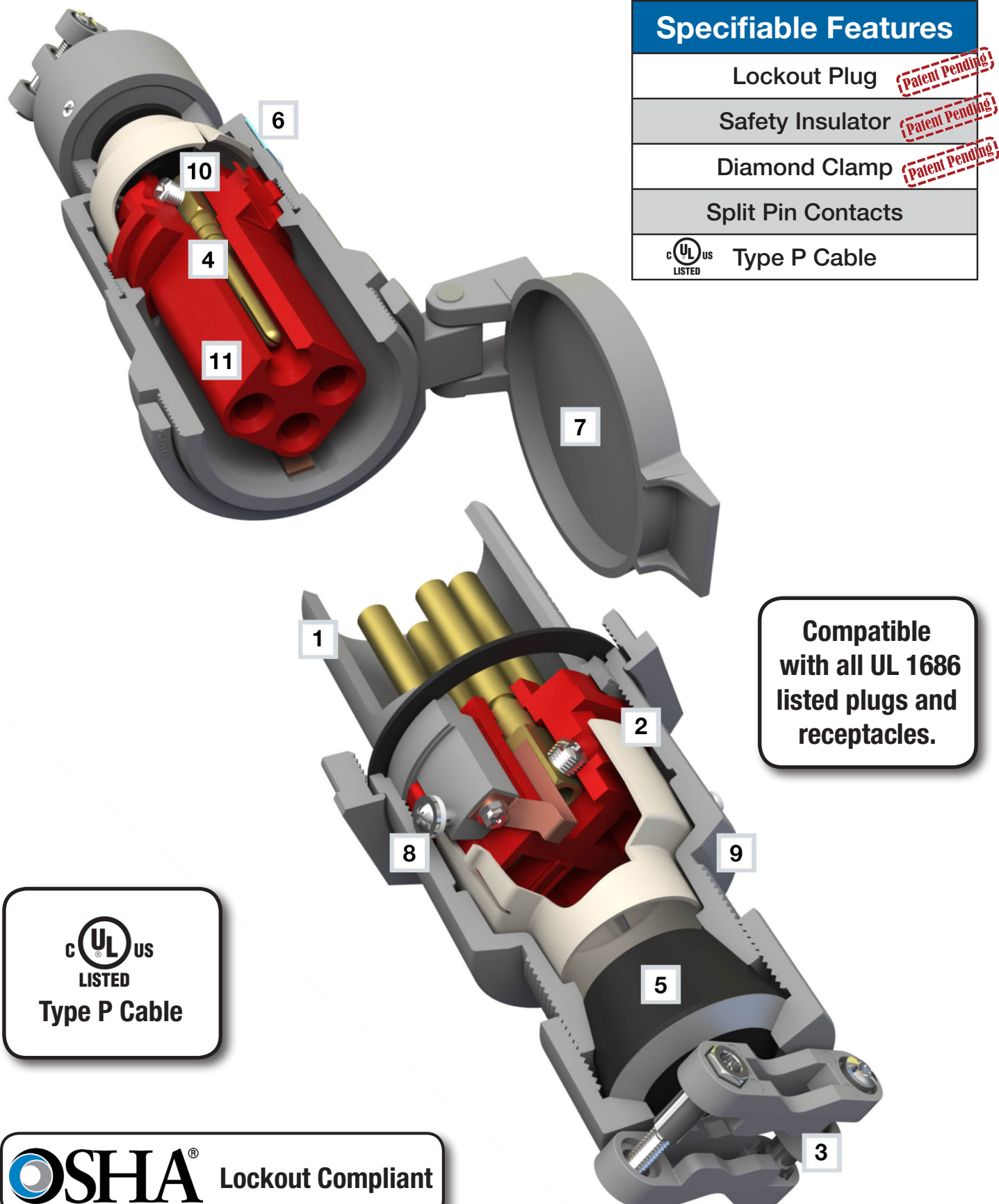
- The back boxes at left are standard with Corro-Free™ epoxy powder coat finish for increased corrosion resistance.
- For optional reversed interior, use suffix **-RS** (see page 3).
- For optional rotated interior, use suffix **-P4** (see page 3).
- For dimensions, see page 11.
- Maximum conductor size (wire well) 0.281" (see page 12).


Back Boxes (for Receptacles)



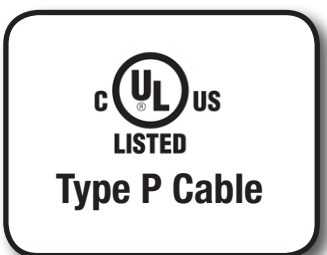
HUB SIZE	CEE	CERH	CJA	CERC
1/2"	CEE36	CERH36	CJA310	CERC36
1-1/4"	CEE46	CERH46	CJA410	CERC46
1-1/2"	CEE56	CERH56	CJA510	CERC56
2"	----	----	CJA610	----




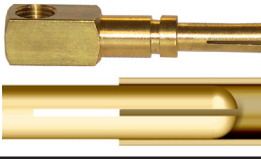



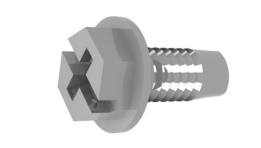


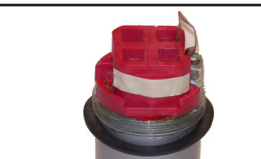
- The back boxes at left are standard with Corro-Free™ epoxy powder coat finish for increased corrosion resistance.
- For optional reversed interior, use suffix **-RS** (see page 3).
- For optional rotated interior, use suffix **-P4** (see page 3).
- For dimensions, see page 11.
- Maximum conductor size (wire well) 0.312" (see page 12).



Specifiable Features	
Lockout Plug	<i>Patent Pending!</i>
Safety Insulator	<i>Patent Pending!</i>
Diamond Clamp	<i>Patent Pending!</i>
Split Pin Contacts	
 Type P Cable	

Compatible with all UL 1686 listed plugs and receptacles.

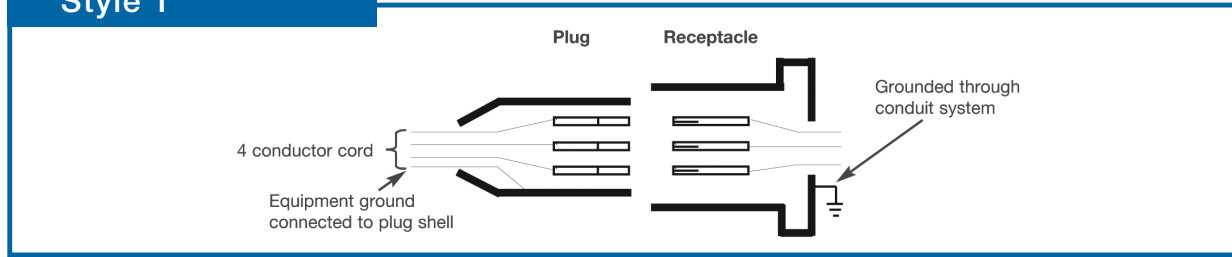


1	<b>Lockout Plug (Patent Pending)</b> <ul style="list-style-type: none"> <li>Guarantees isolated power supply with OSHA compliant lockout/tagout.</li> <li>Ensures plug cannot be inserted into receptacle when maintenance is being performed downstream of power supply.</li> </ul>	
2	<b>Fixed Safety Insulator (Patent Pending)</b> <ul style="list-style-type: none"> <li>Prevents electrical shock and shorts with plastic barrier between insulator body and metal housing.</li> <li>Fixed-in-place design ensures insulator will not be lost or discarded during cable termination process.</li> </ul>	
3	<b>8-Point Diamond Cable Clamps (Patent Pending)</b> <ul style="list-style-type: none"> <li>8 points of contact around diameter of cable for increased grip and even distribution of pressure.</li> <li>Cable jacket does not get pinched, eliminating potential for damage to internal conductors.</li> </ul>	
4	<b>Split Pin Contact Design</b> <ul style="list-style-type: none"> <li>Provides nearly 360° of contact at every insertion, ensuring protection against heat rise and eliminating arcing on critical surfaces.</li> <li>Self-wiping at every insertion to remove foreign particles that create electrical resistance and product failure.</li> </ul>	
5	<b>Extended Cable Range</b> <ul style="list-style-type: none"> <li>Industry's largest cable diameter range.</li> <li>Specifically designed, third party tested and certified for use with Type P cable.</li> <li>Sealing system utilizes industry standard bushings.</li> </ul>	
6	<b>Enhanced Nomenclature and Nameplate</b> <ul style="list-style-type: none"> <li>Easily understandable nomenclature increases ease of part configuration identification.</li> <li>Mechanically attached nameplate ensures that critical information is permanently fixed to product.</li> </ul>	
7	<b>Spring and Threaded Cover</b> <ul style="list-style-type: none"> <li>Each receptacle comes with both spring cap and threaded cap to provide a variety of cover options.</li> </ul>	
8	<b>Combination Drive Stainless Steel Hardware</b> <ul style="list-style-type: none"> <li>Increases ease of installation by allowing for more than one option for installation tools.</li> <li>Stainless steel external hardware eliminates corrosion on critical components and extends product life.</li> </ul>	
9	<b>Handle Body</b> <ul style="list-style-type: none"> <li>Thick epoxy powder coating is standard finish on PowerMate products.</li> <li>Coating reduces corrosion and increases life of product.</li> <li>Industry standard profile increases ease of plugging and unplugging.</li> </ul>	
10	<b>Combination Slot and Hex Mechanical Lugs*</b> <ul style="list-style-type: none"> <li>Increases ease of installation by allowing for more than one option for installation tools.</li> <li>Hex head allows for easy achievement of specified torque value.</li> </ul>	
11	<b>Insulator Assemblies</b> <ul style="list-style-type: none"> <li>Unimpeded, easy-access phase and ground terminals make wire termination quick and easy.</li> <li>Molded-in-place markings for phase/ground and conductor strip lengths reduce installation errors.*</li> </ul>	

\*60, 100, and 150A offering.

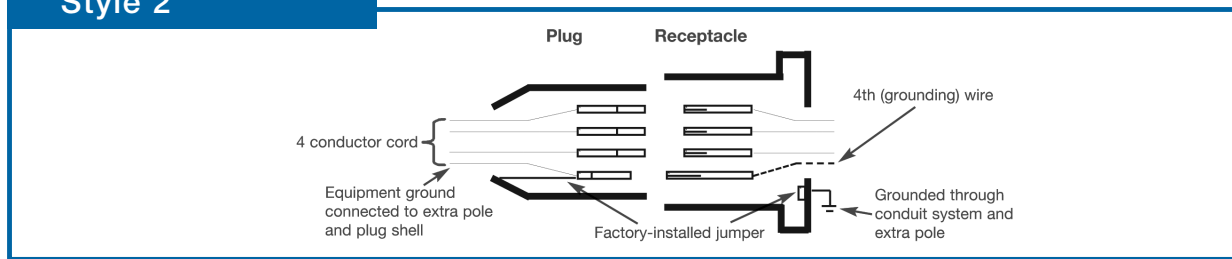
## Grounding

### Style 1



Style 1 units complete the grounding circuit through the metallic plug shell, receptacle housing, or connector shell.

### Style 2



Style 2 metallic units with metal housing have a separate designated ground contact that is bonded to the metallic housing. The metallic housing of the plug, receptacle, or connector forms a parallel ground circuit through the receptacle or connector detent spring.

## Electrical Rating Ranges

- **Voltage** - 600 VAC, 50 to 400 Hz; 250 VDC\*
- **Amperes** - 30, 60, 100, 150

### Maximum Horsepower for Plug and Receptacle Combinations by Input Voltage\*\*

The following values are typical horsepower ratings based on NEC Article 430 tables. HP Ratings are based on the largest conductor size for each plug and receptacle combination per the Wire Size table below.

Ampere Rating Plug and Receptacle	Motor Horsepower **		
	240 Volts	480 Volts	600 Volts
30	15	30	40
60	20	40	50
100	30	60	75
150	40	75	100
200	60	125	150

\* This guide is for reference only. Consult your local electrical codes before installation.

\*\* Cooper Crouse-Hinds recommends circuit breaking use be limited to emergency conditions only and that a horsepower rated switch or Cooper Crouse-Hinds Interlocked Receptacle be used for making and breaking under load.

## Product Dimensions

### Receptacle, Plug, Cord Connector

	CDR Receptacle			CCP Plug†			CRC Cord Connector†		
	a	b		a	b		a	b	
30A	2-7/8"	3-3/8"		6-1/2"	2-5/16"		6-3/8"	2-9/16"	
60A 3p	4-1/4"	4-1/2"		8-1/8"	3-5/8"		8-3/10"	2-5/16"	
60A 4p	4-1/4"	4-1/2"		8-1/8"	3-3/4"		8-3/10"	2-5/16"	
100A 3p	5-1/4"	4-1/4"		10-4/5"	3-3/4"		11-1/2"	3-3/16"	
100A 4p	5-1/4"	4-1/4"		10-4/5"	4-1/8"		11-1/2"	3-7/16"	
150A (CD)	5-1/4"	4-1/4"		10-4/5"	4-1/8"		11-1/2"	3-7/16"	
150A (DE)	5-1/4"	4-1/4"		10-4/5"	4-1/8"		11-1/2"	3-7/16"	

†Dimensions are approximate and vary with cable size.

### CEE Back Boxes

Cat. No.	Rating	Size	a	b	30A	60A
CEE13	30A	1/2"	1-27/32"	11/16"		
CEE23	30A	3/4"	1-27/32"	13/16"		
CEE33	30A	1"	1-31/32"	15/16"		
CEE36	60A	1"	2-9/16"	15/16"		
CEE46	60A	1-1/4"	2-5/8"	1-3/16"		
CEE56	60A	1-1/2"	2-11/16"	1-5/16"		

### CJA

#### With 60, 100 and 150A Angle Adapters

Cat. No.	Hub Size	a	b	c	d	e	f
CJA310	1"	5-7/8"	8"	7-7/16"	4-7/8"	7"	15°
CJA410	1-1/4"	5-7/8"	8"	7-7/16"	4-7/8"	7"	15°
CJA510	1-1/2"	5-7/8"	8"	7-7/16"	4-7/8"	7"	15°
CJA610	2"	5-7/8"	8"	8"	4-7/8"	7"	15°

- Back boxes are standard with Corro-Free™ epoxy powder coat finish for increased corrosion resistance.
- Thru-feed back boxes are furnished with one close-up plug in bottom recessed hub.
- CJA back boxes are recommended when additional wiring space is required.
- The angle adapter on CJA back boxes can be installed at 90° rotations, making it possible to enter hub from several directions.

## Replacement Parts

### Standard Replacement Parts

Replacement Interiors 30, 60, 100, 150A					
Complete insulator and contact assembly	30A	60A	100A	150A	
2W2P	CDR-CRC	CRI-3022	CRI-6022	CRI-1022	---
	CCP	CPI-3022	CPI-6022	CPI-1022	---
2W3P	CDR-CRC	CRI-3023	CRI-6023	CRI-1023	---
	CCP	CPI-3023	CPI-6023	CPI-1023	---
3W3P	CDR-CRC	CRI-3033	CRI-6033	CRI-1033	---
	CCP	CPI-3033	CPI-6033	CPI-1033	---
3W4P	CDR-CRC	CRI-3034	CRI-6034	CRI-1034	CRI-15034
	CCP	CPI-3034	CPI-6034	CPI-1034	CPI-10534
4W4P	CDR-CRC	CRI-3044	CRI-6044	CRI-1044	CRI-15044
	CCP	CPI-3044	CPI-6044	CPI-1044	CPI-15044

### Miscellaneous Replacement Parts

Amperage Center	Configuration Center	CDR Spring Cover	CDR Threaded Cover	CCP Fastening Ring	Bushings Kits Center
30A	2-pole, 3-pole 4-pole	PTSC30	PTTC30	CLMPR30	PTGB30
60A	2-pole, 3-pole 4-pole	PTSC60A PTSC60B	PTTC60A PTTC60B	CLMPR23P60 CLMPR4P60	PTGB60
100A	2-pole, 3-pole 4-pole	PTSC100A PTSC100B	PTTC100A PTTC100B	CLMPR23P100 CLMPR4P100	PTGBCD
150A	4-pole	PTSC150B	PTTC150B	CLMPR4P150	PTGBCD (CD Size) PTGBCD (DE Size)

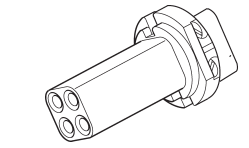
## Wire Sizes

The table below lists the diameter of the wire recess in PowerMate plug and receptacle contacts so that maximum size of bare conductor can be determined. Range of wire sizes shown in table are intended only as a guide. Depending on type of wire used (building wire, flexible or extra flexible cable) and its construction (number and size of strands), bare copper diameters vary widely.

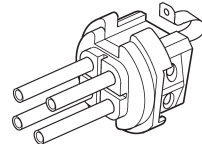
### Diameter of Wire Recess in Plug & Receptacle Contacts

Amperage Rating	Contact Type	Diameter of Recess	Wire Size †† Extra Flex
30 (2, 3, & 4-pole)	Pressure	.281"	#10-#8
60 (2, 3, 4-pole)	Pressure	.312"	#8-#4
100 (2, 3, & 4-pole)	Pressure	.390"	#4-#2
150 (4-pole)	Pressure	.390"	#2-1/0

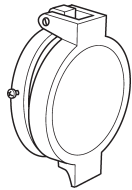
††Do not use wire size smaller than minimum size recommended.



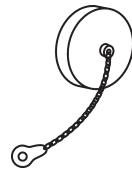
CRI Receptacle & Connector Interior



CPI Plug Interior



Spring Cover

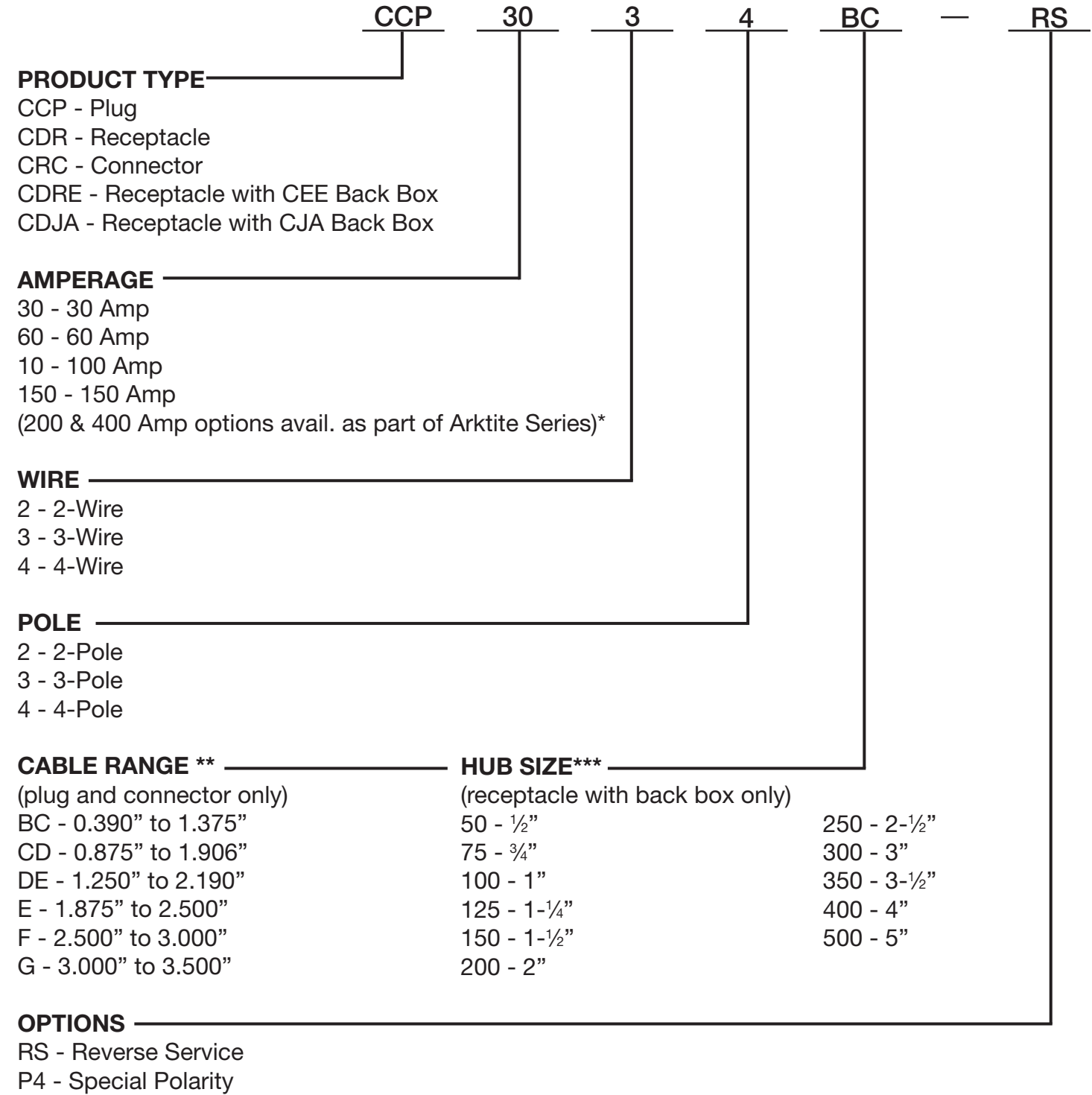


Threaded Cover



Bushing Kit

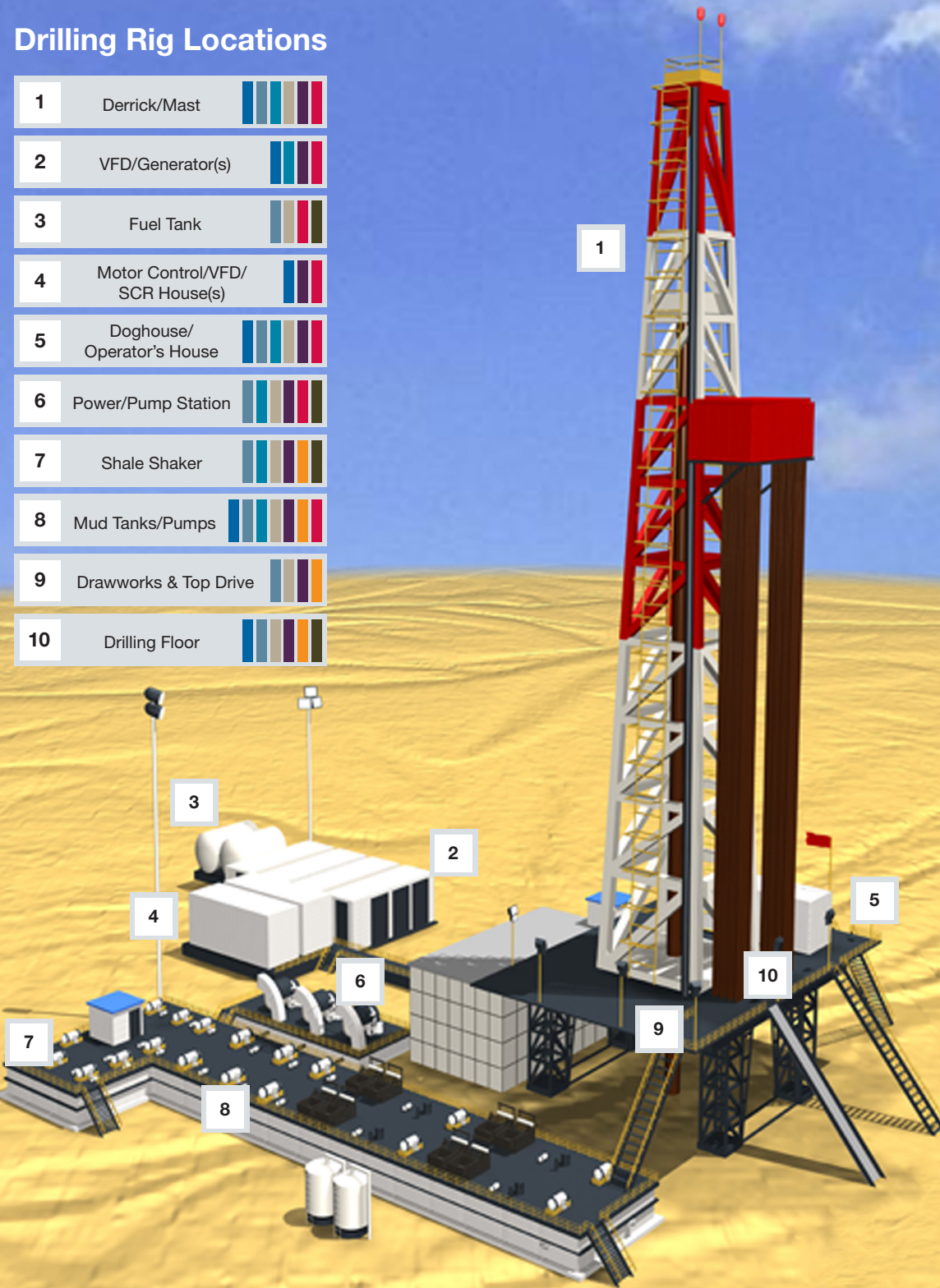
## PowerMate™ Part Numbers



\* Refer to section 1P of the Cooper Crouse-Hinds catalog.  
 \*\* Cable Range only applies to specific plug part numbers.  
 \*\*\* Hub size only applies to specific receptacle part numbers.

Drilling Rig Locations

- 1 Derrick/Mast
- 2 VFD/Generator(s)
- 3 Fuel Tank
- 4 Motor Control/VFD/SCR House(s)
- 5 Doghouse/Operator's House
- 6 Power/Pump Station
- 7 Shale Shaker
- 8 Mud Tanks/Pumps
- 9 Drawworks & Top Drive
- 10 Drilling Floor



Environmental Conditions

- Industrial**  
Areas prone to dust, dirt, grime, vibration, hard use and abuse.
- Wet Locations**  
Protection from wind-blown dust and rain, splashing and hose-directed water and external formation of ice.
- Vibration**  
Locations that need products designed to withstand continuous movement and may require maintenance and repair.
- Corrosive Areas**  
Protection for areas with corrosive chemicals, atmospheres and water.
- Space Constraints**  
Areas with low ceilings, tight spaces and limited footprint potential.
- Class I, Div 1/Zone 1**  
Explosion protection for areas with flammable gases or vapors normally in the atmosphere.
- Class I, Div 2/Zone 2**  
Explosion protection for areas where flammable gases or vapors are not normally present.
- Class II, Zone 21 & 22**  
Protection for areas where ignitable dusts may be present.

Please refer to your own company documentation for exact specifications and environmental conditions.

Plug and Receptacle Solutions for Land-Based Drilling

Product Photo	Product Solutions	Env. Conditions	Rig Location
	<b>PowerMate Series</b> <ul style="list-style-type: none"> <li>Supplies power to portable devices such as motor generator sets, compressors, heating/cooling, welders and lighting from 30 to 150A</li> <li>NEMA 4X copper-free aluminum construction with epoxy powder coat finish is ideal for harsh environments</li> <li>Arc-snuffing design enables large power loads to be disconnected under load without an arc flash (up to 100 amps)</li> <li>360° split pin contact reduces heat rise and eliminates arcing</li> <li>Lockout/tagout hole in plug to ensure it cannot be inserted into receptacle when maintenance is being performed downstream</li> </ul>	Industrial Wet Locations Vibration Corrosive Areas Space Constraints	2, 4, 5
	<b>ENR &amp; ENP Series</b> <ul style="list-style-type: none"> <li>Explosionproof outlet for convenience and lighting connections, 20A MAX</li> <li>Factory-sealed chamber encloses potential arcing components between two explosionproof threaded joints</li> <li>Frustration-free ENP with captive set screws assures ease of installation and reduces likelihood of losing critical components in the field</li> <li>ENRM4 Series with gasketed screw cap cover offers features that protect interior from harsh environments, provide time saving saddle clamp terminals, and improved safety with lockout/tagout hole</li> </ul>	Industrial Vibration Space Constraints Class I, Div 1/Zone 1 Class I, Div 2/Zone 2	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
	<b>FSQC &amp; EBBR Series</b> <ul style="list-style-type: none"> <li>Interlocked units with dead front receptacles ensure connection cannot be made or broken under load, increasing safety and protection</li> <li>PowerMate plugs can be used with both FSQC (30-60A) &amp; EBBR (30-100A) Series to provide ultimate flexibility of portable equipment used throughout the rig</li> <li>FSQC units are interlocked with switches and the EBBR Series is interlocked with circuit breakers for added protection</li> </ul>	Industrial Wet Locations Vibration Corrosive Areas Space Constraints Class I, Div 1/Zone 1 Class I, Div 2/Zone 2	4, 7, 8, 10
	<b>CES &amp; CPH Series</b> <ul style="list-style-type: none"> <li>Equipped with a delayed action rotating sleeve which prevents complete withdrawal of CPH plug in one continuous movement</li> <li>The delayed action feature permits the plug to be used as an emergency push-pull switch</li> <li>Receptacles are factory sealed to simplify installation and eliminate the need for external seals</li> <li>Available in 30 and 60A</li> <li>CPH also mates with FSQC, EPC, and EBBR receptacles of matching configuration</li> </ul>	Industrial Wet Locations Vibration Corrosive Areas Space Constraints Class I, Div 1/Zone 1 Class I, Div 2/Zone 2	7, 8
	<b>eXLink® Connectors</b> <ul style="list-style-type: none"> <li>Signal and power connections can be switched under load</li> <li>Reduces installation time, providing maintenance and labor savings</li> <li>Can be factory installed and pre-wired with Cooper Crouse-Hinds industry leading light fixtures</li> <li>Rated up to max. 16A and up to 400V</li> </ul>	Industrial Wet Locations Vibration Corrosive Areas Space Constraints	1, 10
	<b>IEC 309 GHG 51 Series</b> <ul style="list-style-type: none"> <li>Supplies power to portable devices with requirements of 16-125A</li> <li>Reinforced polyester construction offers reliability from -20° to +55°C</li> <li>Integrated AC3 rated disconnect switch</li> </ul>	Wet Locations Vibration Corrosive Areas Class I, Div 2/Zone 2	7, 8, 9
	<b>Roughneck™ Connectors</b> <ul style="list-style-type: none"> <li>For use with single conductor 313-777 MCM cable, 1000 volts AC/DC, rated up to 1135A</li> <li>Designed for heavy abuse - resistant to rain, mud and oil</li> <li>Quickly connects and disconnects without any tools</li> <li>Superior safety protection with totally shielded contacts</li> <li>Color-coded insulators for easy identification to prevent reverse phasing in AC and cross polarization in DC</li> <li>Mated assemblies are lockout/tagout compatible</li> </ul>	Industrial Wet Locations Vibration Corrosive Areas Space Constraints	2, 4, 5, 6, 9, 10
	<b>Pauluhn™ 80/86/96/wd (NRL) Connectors</b> <ul style="list-style-type: none"> <li>Watertight ANSI NEMA type receptacle</li> <li>Accepts standard ANSI NEMA type plugs</li> <li>Mating plugs with integral threaded ring maintain a watertight seal</li> <li>Available in seven different voltage configurations up to 20A</li> <li>Captive threaded receptacle cap</li> </ul>	Industrial Wet Locations Vibration Corrosive Areas Space Constraints	1, 2, 4, 5, 7*, 8
	<b>Pauluhn™ PPR Series Connectors</b> <ul style="list-style-type: none"> <li>Watertight non-metallic construction including water shedding receptacle design</li> <li>Corrosion and impact resistant closure</li> <li>Captive threaded receptacle cap</li> <li>2P3W and 3P4W available in single or double gang types and with an in-line connector set up to 20A</li> <li>Double gang receptacle provided with pre-stripped leads</li> <li>Inter-mateable with other brands</li> </ul>	Industrial Wet Locations Corrosive Areas	2, 4, 5

\* On enclosed rigs.