

5/8 kV

# **CABLE COUPLERS**

250 Amp 3 Power + 1 Ground + 1 Pilot 400 Amp 3 Power + 2 Ground + 1 Pilot 500 Amp 3 Power + 1 Ground + 1 Pilot

As mining equipment has increased in size, so too has their demand for power. To meet these increasing power requirements, Patton & Cooke introduced the C80 Series 250, 400, and 500 Amp couplers. The C80 series incorporates all of our standard features, but with added design features to give reliable and lasting performance at higher current levels.

## **APPLICATIONS:**

- Mining (Shovels, Drills, Continuous Miners, Conveyors)
- Shore to Ship
- Tunneling
- · Portable Power Generation
- Dewatering

## **DESIGN:**

**Body:** Aluminum

Insulator Characteristics: Individual Tube

Voltage: 5/8 kV

**Current Rating:** 250, 400, & 500 Amp **Cable Range:** 0.82"-3.54" (21 mm - 89 mm)

IP Rating: 67

## **OPTIONS:**

- Powder Coating
  - Light Rings
- Closing Tool
- Live End Covers
- Junction Box
- Shorting Caps
- Fiber Optics

## **APPLICABLE TEST STANDARD:**

- M421
- IEEE 48





phone: 604.591.5374

email: info@pattonandcooke.com

# 250 & 400 AMP PRODUCT FEATURES:



- Fully shielded phase conductors
- Individually replaceable phase tubes
- Standard solderless stems
- Quick flip front body
- 1 or 2 piece design

# 250 & 400 AMP COUPLER & JUNCTION BOX

	Coupler Catalogue		Dimensions				
Illustration (not to scale)	Rating (A)	Number	Α	В	С	D	Weight
CABLE MOUNT MALE	250	C80C1003 C80C1004 C80C1005 C80C1006	17" 432 mm	9 ½" 241 mm	21" 533 mm		31.0 lb 14.0 kg
A C	400	C80D1013 C80D1014 C80D1015 C80D1016	17" 432 mm	9 ½" 241 mm	21" 533 mm		32.0 lb 14.5 kg
EQUIPMENT MOUNT MALE	250	C80C1007	7 ½" 191 mm	10 ½" 267 mm	12" 305 mm	9 ¼" 235 mm	24.0 lb 11.0 kg
B A C	400	C80D1017	7 ½" 191 mm	10 ½" 267 mm	21" 533 mm	9 ¼" 235 mm	25.0 lb 11.5 kg
CABLE MOUNT FEMALE	250	C80C2004 C80C2005 C80D2006 C80D2007	20" 508 mm	9 ½" 241 mm	23" 584 mm		33.0 lb 15.0 kg
AC	400	C80D2014 C80D2015 C80D2016 C80D2017	20" 508 mm	9 ½" 241 mm	23" 584 mm		34.0 lb 15.3 kg
EQUIPMENT MOUNT FEMALE	250	C80C2003	10 %" 272 mm	10 ½" 267 mm	13 1/2" 343 mm	9 ¼" 235 mm	26.0 lb 12.0 kg
B A C	400	C80D2018	10 %" 272 mm	10 ½" 267 mm	13 1/2" 343 mm	9 ¼" 235 mm	27.0 lb 12.3 kg
JUNCTION BOX  B  D  D	250	C80C3004	34 ½" 876 mm	10 ½" 267 mm	8" 203 mm	5 ¼" 133 mm	90.0 lb 41.0 kg
C	400	C80D3007	34 ½" 876 mm	10 ½" 267 mm	8" 203 mm	5 ¼" 133 mm	92.0 lb 42.0 kg



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# **500 AMP PRODUCT FEATURES:**



- Easy maintenance with front end removable contacts
- Fire retardant insulators
- Corrosion-resistant, cast aluminum or epoxy powder coated bodies
- Secure three bolt, quick flip connection
- Medially-located grounded surface running through mounting plate
- Accepts conductors to 500 MCM (250 mm²) and diameters up to 3.5" (90 mm)
- Silver-plated male and female phase contacts
- Weatherproof covers

# 500 AMP COUPLER & JUNCTION BOX

	Coupler	Catalogue		P	imension	S		
Illustration (not to scale)	Rating (A)	Number	Α	В	С	D	E	Weight
CABLE MOUNT MALE  A  C	500	C80F1030 C80F1031 C80F1032 C80F1033	20 ¼" 514 mm	24 ½" 267 mm	24 ½" 622 mm			38.0 lb 17.0 kg
EQUIPMENT MOUNT MALE  A C	500	C80F1004	4 ¾" 121 mm	12 ¼" 311 mm	9" 229 mm	11" 279 mm	1 1/2" 38 mm	32.0 lb 14.5 kg
CABLE MOUNT FEMALE  B  C	500	C80F2030 C80F2031 C80F2032 C80F2033	24" 610 mm	11 ½" 292 mm	27" 686 mm			38.0 lb 17.0 kg
EQUIPMENT MOUNT FEMALE	500	C80F2004	5 ¼" 133 mm	12 ¼" 311 mm	8 ¼" 210 mm	11" 279 mm	4" 102 mm	27.0 lb 12.3 kg
JUNCTION BOX  A  C	500	C80F3xxx	16 ¼" 413 mm	14 ¼" 362 mm	32" 813 mm			100.0 lb 45.0 kg



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# 5/8 kV TERMINATION KITS:

Patton & Cooke Catalogue Number	Approximate Conductor Range for 5/8kV SHD-GC Cable	Insulation O.D.
11Y08/15-A	#2-250 MCM	15-25 mm
#2-250 MCM	#2-250 IVICIVI	0.591-0.984"
11Y08/15-B	3/0-500 MCM	20-32 mm
11100/15-6	3/0-500 MCM	0.787-1.259"
11Y08/15-C	500 MCM	27-42 mm
11100/15-C	500 MCM	1.063-1.654"



# 5/8 kV POTTING COMPOUND:



## **GUROFLEX POTTING COMPOUND KITS**

**OS-J990-MV5** = 304 Sq. Inch Volume

## COMPOUND REQUIRED FOR COUPLERS

**C80C Series** = 330 Sq. Inch = 1 **OS-J990-MV5** 

C80D Series = 330 Sq. Inch = 1 OS-J990-MV5

C80F Series = 417 Sq. Inch = 1 OS-J990-MV5

# 5/8 kV ENTRANCE FITTING GASKET KITS:

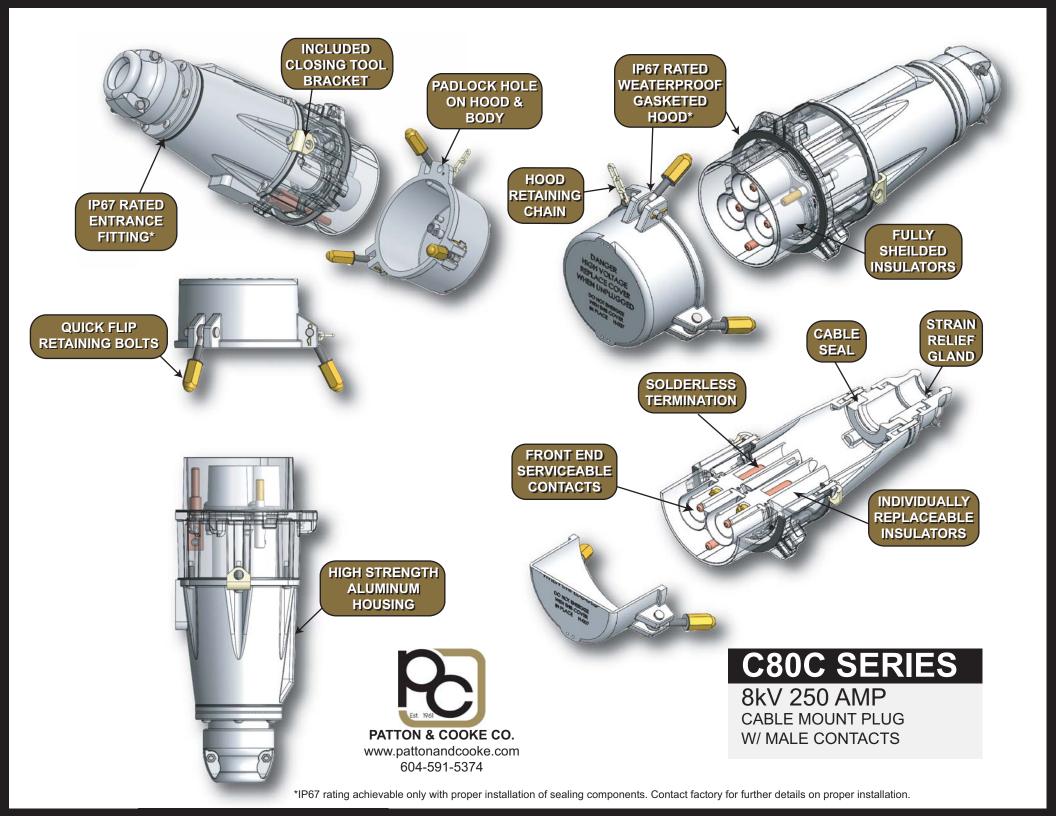
Outside Cal	ole Diameter	Catalagua Numbar	Outside Cak	ole Diameter	Catalagua Numbar
(mm)	(in)	Catalogue Number	(mm)	(in)	Catalogue Number
20.8-22.1	0.82-0.87	C150F3004	51.1-53.8	2.01-2.12	C150F3016
22.4-23.9	0.88-0.94	C150F3005	54.1-57.2	2.13-2.25	C150F3017
24.1-25.7	0.95-1.01	C150F3006	57.4-60.2	2.26-2.37	C150F3018
25.9-26.9	1.02-1.06	C150F3007	60.5-63.5	2.38-2.50	C150F3019
27.2-28.4	1.07-1.12	C150F3008	63.8-66.5	2.51-2.62	C150F3020
28.7-31.8	1.13-1.25	C150F3009	66.8-69.9	2.63-2.75	C150F3021
32.0-34.8	1.26-1.37	C150F3010	70.1-72.9	2.76-2.87	C150F3022
35.0-38.1	1.38-1.50	C150F3011	73.2-76.2	2.88-3.00	C150F3023
38.4-41.1	1.51-1.62	C150F3012	76.5-79.2	3.01-3.12	C150F3024
41.4-44.5	1.63-1.75	C150F3013	79.5-82.6	3.13-3.25	C150F3025
44.7-47.5	1.76-1.87	C150F3014	82.8-85.6	3.26-3.37	C150F3026
47.8-50.8	1.88-2.00	C150F3015	85.9-88.9	3.38-3.50	C150F3027

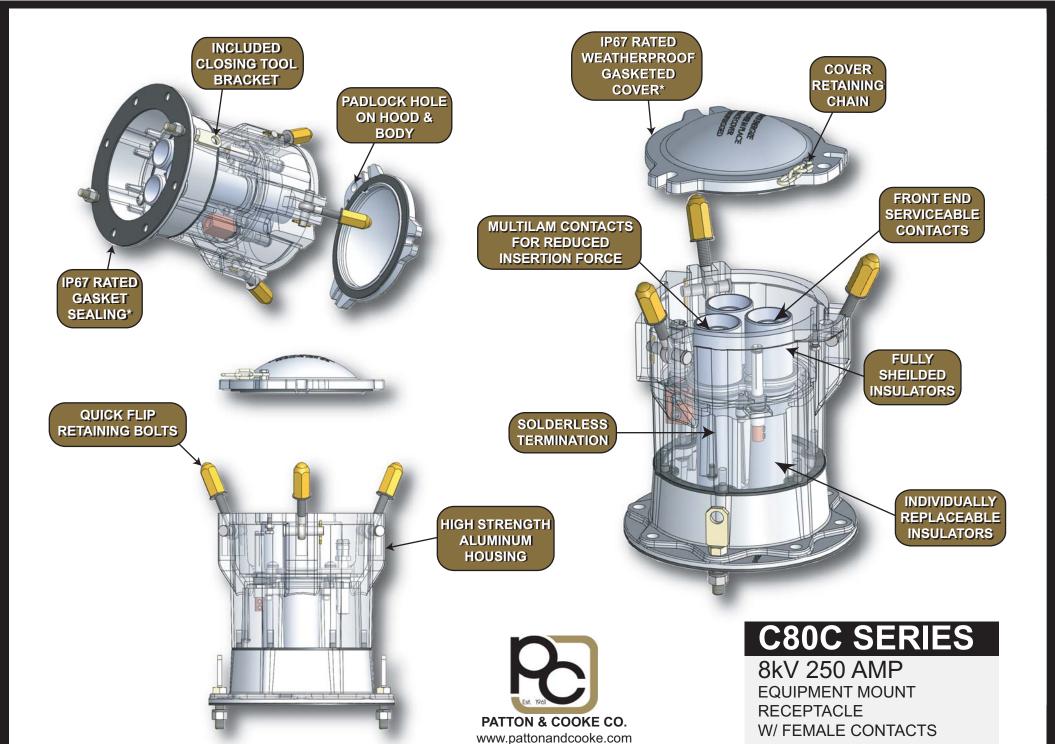
## **SELECTION REMINDERS:**

- 1. Each kit consists of 2 clamp inserts and 1 cable gasket.
- 2. Choose the kit to fit the outside diameter of the cable.
- **3.** Make sure that the O/D of the kit chosen falls within the outside cable diameter range of the selected cable mounted coupler.

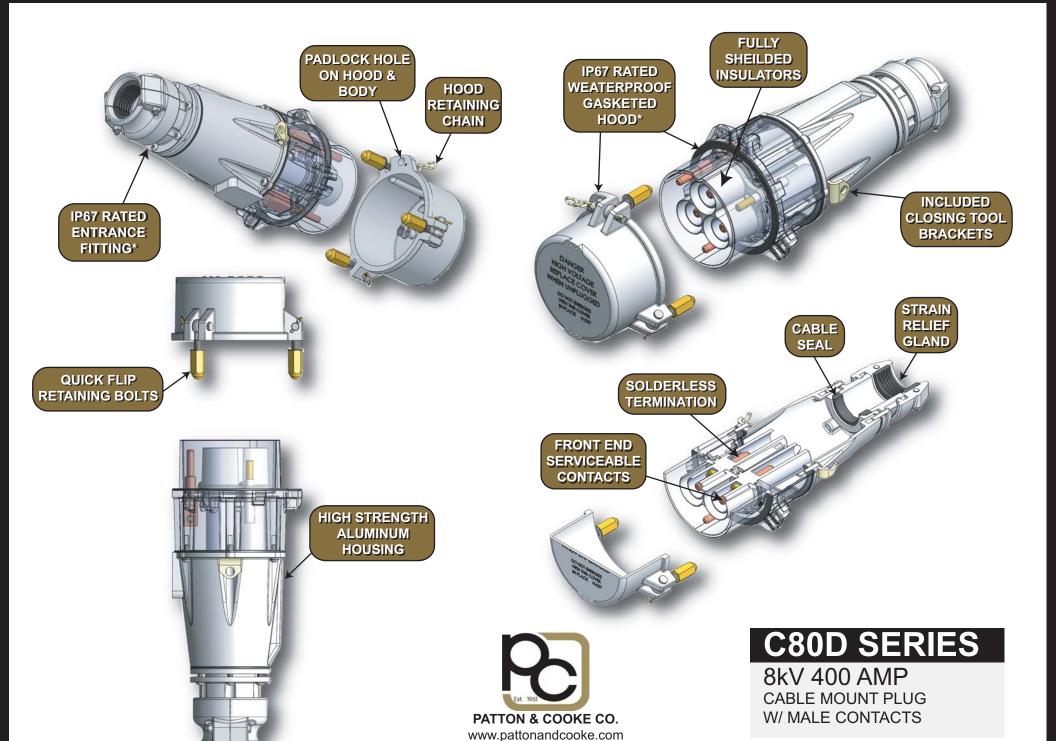


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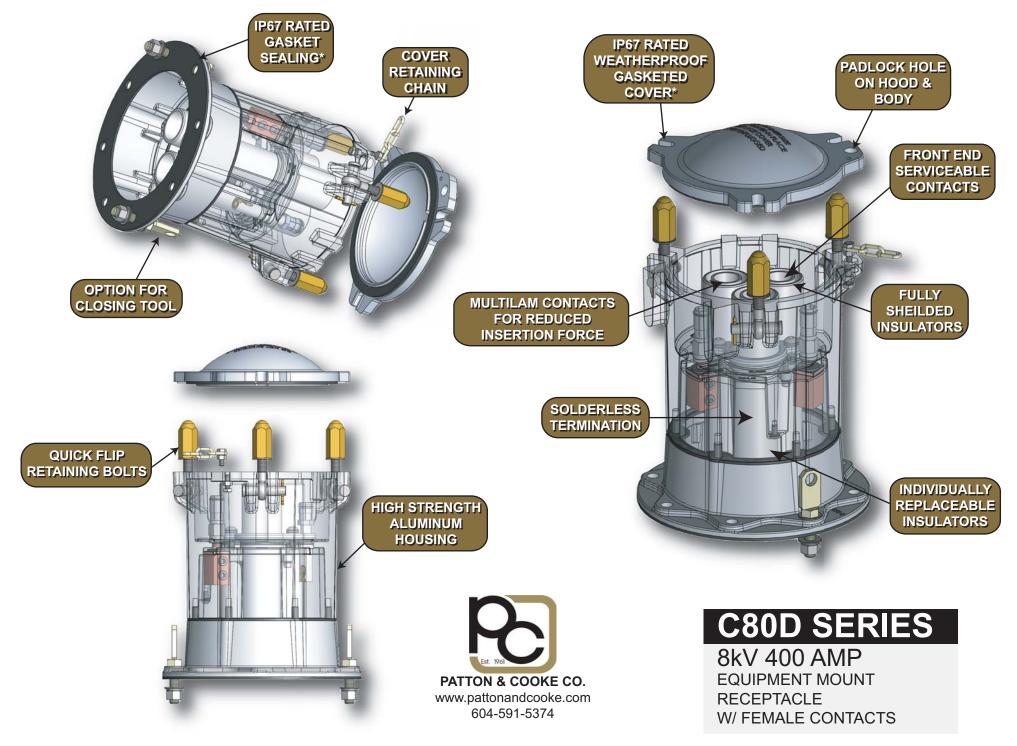


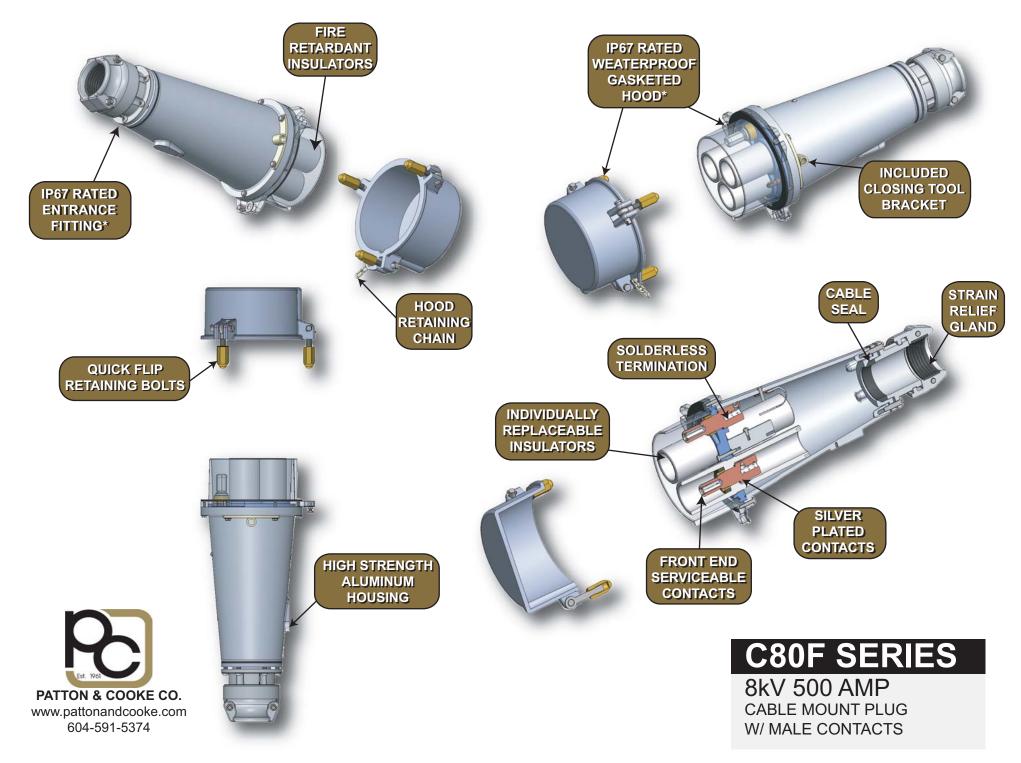


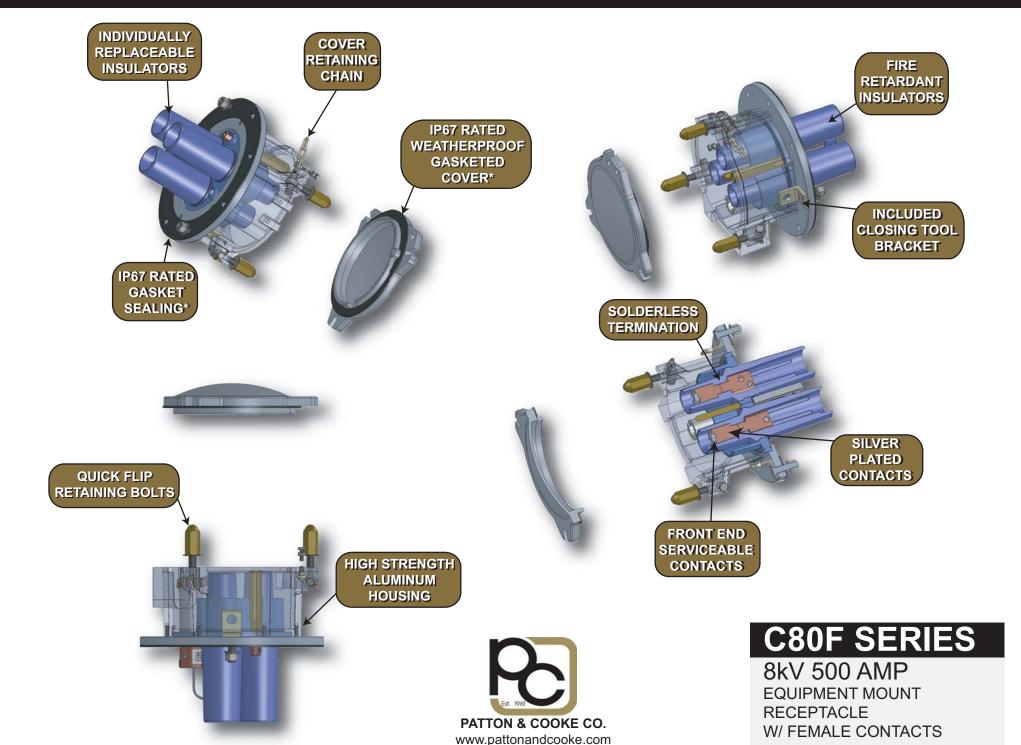
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C80C-5/8 kV 250 AMP MALE & FEMALE COUPLERS & JUNCTION BOXES C80D-5/8 kV 400 AMP MALE & FEMALE COUPLERS & JUNCTION BOXES C80F-5/8 kV 500 AMP MALE & FEMALE COUPLERS & JUNCTION BOXES

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C80-4	CATALOGUE NUMBER COMBINATION GUIDE
C80-5	ACCESSORIES
C80-7	COUPLER GASKET KITS

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## 250, 400 & 500 AMP COUPLER CATALOGUE NUMBERS

250 Amp Contact Structure: 3 Power + 1 Ground + 1 Pilot 400 Amp Contact Structure: 3 Power + 2 Ground + 1 Pilot 500 Amp Contact Structure: 3 Power + 1 Ground + 1 Pilot

Coupler	Male/Female	Mounting	Outside Ca	ble Diameter	Cotalogue Number
Rating (A)	waie/remaie	Options	(mm)	(in)	Catalogue Number
	М	Cable	20.8-47.5 47.8-60.2 60.5-69.9 70.1-88.9	0.82-1.87 1.88-2.37 2.38-2.75 2.76-3.50	C80C1003 <u>x</u> C80C1004 <u>x</u> C80C1005 <u>x</u> C80C1006 <u>x</u>
250	F	Mount	20.8-47.5 47.8-60.2 60.5-69.9 70.1-88.9	0.82-1.87 1.88-2.37 2.38-2.75 2.76-3.50	C80C2004 <u>x</u> C80C2005 <u>x</u> C80C2006 <u>x</u> C80C2007 <u>x</u>
	M F	Equipment Mount		I/A I/A	C80C1007 <u>x</u> C80C2003 <u>x</u>
	М	Cable Mount	20.8-47.5 47.8-60.2 60.5-69.9 70.1-88.9	0.82-1.87 1.88-2.37 2.38-2.75 2.76-3.50	C80D1013 <u>x</u> C80D1014 <u>x</u> C80D1015 <u>x</u> C80D1016 <u>x</u>
400	F		20.8-47.5 47.8-60.2 60.5-69.9 70.1-88.9	0.82-1.87 1.88-2.37 2.38-2.75 2.76-3.50	C80D2014 <u>x</u> C80D2015 <u>x</u> C80D2016 <u>x</u> C80D2017 <u>x</u>
	M F	Equipment Mount	N/A N/A		C80D1017 <u>x</u> C80D2018 <u>x</u>
	М	Cable	20.8-47.5 47.8-60.2 60.5-69.9 70.1-88.9	0.82-1.87 1.88-2.37 2.38-2.75 2.76-3.50	C80F1030 <u>x</u> C80F1031 <u>x</u> C80F1032 <u>x</u> C80F1033 <u>x</u>
500	F	Mount F	20.8-47.5 47.8-60.2 60.5-69.9 70.1-88.9	0.82-1.87 1.88-2.37 2.38-2.75 2.76-3.50	C80F2030 <u>x</u> C80F2031 <u>x</u> C80F2032 <u>x</u> C80F2033 <u>x</u>
	M F	Equipment Mount		I/A I/A	C80F1004 <u>x</u> C80F2004 <u>x</u>

Example: male plug, 250 Amp, cable mount, #2 cable, outside cable diameter 2.125"

Catalogue Number: C80C1004F

Entrance Fitting Gasket Kit: C150F3017

Available options and accessories refer to pages 9 and 11.

All couplers and junction boxes are supplied with cover, attachment chain and provision for padlocking two mated couplers and/or covers. Termination kits and potting compound can be purchased separately, refer to page 11. Potting compound is also available as an option. Refer to table C on page 9.

Standard terminations for phase, pilot and ground conductors are mechanical by means of allen head screw.

Potting compound is recommended for 5 and 8 kV couplers and junction boxes exposed to extreme changes in temperature and humidity. Potting compound can be purchased separately, refer to page 11.

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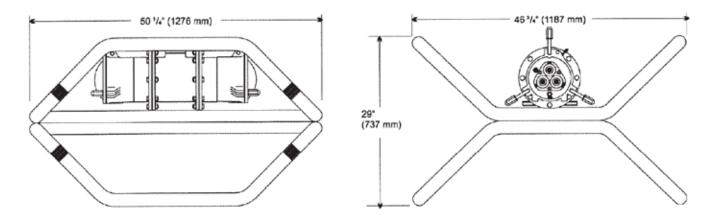
# 5/8 kV COUPLERS C80 SERIES

## 250, 400 & 500 AMP COUPLER CATALOGUE SUFFIXES - x

Max. Cable Size	SHD-GC 5 or 8 kV	x - Cat. No. Suffix	Max. Cable Size	SHD-GC 5 or 8 kV	x - Cat. No. Suffix
(mm²)	(AWG)	x - Cat. No. Suilix	(mm²)	(AWG)	x - Cat. No. Sumx
21	#4	D	85	3/0	K
27	#3	E	107	4/0	L
34	#2	F	127	250 MCM	М
42	#1	G	152	300 MCM	N
54	1/0	Н	178	350 MCM	0
67	2/0	J	203	400 MCM	Р

## 250, 400 & 500 AMP JUNCTION BOX CATALOGUE NUMBERS

Coupler Rating (A)	Description	<b>Mounting Options</b>	Catalogue Number
250	Two female receptacles with	Less Skid Skid Mount	C80C3004 C80C3003
400	phase transposing compartment. To join cables equipped with	Less Skid Skid Mount	C80D3007 C80D3006
500	male plugs on both ends	Less Skid Skid Mount	C80F3005 C80F3004



## 250 & 400 AMP JUNCTION BOX CATALOGUE NUMBERS

Available options refer to Table C page 9.

Available accessories refer to page 11.

All couplers and junction boxes are supplied with cover, attachment chain and provision for padlocking two mated couplers and/or covers. Termination kits and potting compound can be purchased separately, refer to page 11. Potting compound is also available as an option. Refer to table C on page 9.

Standard terminations for phase, pilot and ground conductors are mechanical by means of allen head screws.

Potting compound is recommended for 5 and 8 kV couplers and junction boxes exposed to extreme changes in temperature and humidity. Potting compound can be purchased separately, refer to page 11.

# Est. 1961

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# 5/8 kV COUPLERS C80 SERIES

### TABLE C: 250 & 400 AMP COUPLER & JUNCTION BOX OPTIONS

This table lists options that may be requested with this product class.

Use of this table is not required for standard configurations.

Description					
1. Elbow Adaptor. Change right angle equipment to 45°					
2. Entrance Fitting, Conduit	Coupling. Specify size and type.				
3. Entrance Fitting, Teck	Cable. Specify size and type.				
	Color Code	;			
4. Electrostatic Application of Epoxy Powder Coating	Blue (EB)	Grey (EGR)			
	Orange (EO)	Brown (EBR)			
Available on: Cable Mount	White (EW)	Black (EBK)			
Equipment Mount Junction Boxes	Yellow (EY)	Violet (EV)			
	Green (EG)	Blue Grey (EBG)			
	Red (ER)				
5. Ground Contact, C	One Additional. See Note 1.				
6. Ground Contact, Two A	Additional, No Pilot. See Note 2				
7. Groun	d Lug, External				
8. Interlocks, Mechanical provision for (does not include interlocks, e.g. Kirk type) Male Female					
9. Leg Mounting	g, Three mounting feet				
10. Live End Cover, Eq	uipped with End-of-Line Diode				
11. Neutral Contact, One isol	11. Neutral Contact, One isolated. Max. one extra. See Note 3.				
12. Pilot	Contact, None.				
13. Pilot Contact, O	ne Additional. See Note 1.				
	ing Compound				
15. Integrated I	Fiber Optic Connector				

#### NOTES:

- 1. This option available on 250 Amp couplers only.
- 2. This option available on 250 Amp couplers only and pilot contact must be omitted.
- 3. This option available on 250 and 400 Amp couplers. Pilot contact must be omitted.

#### **SELECTION REMINDERS:**

- 1. Standard Contact Structure: 250 Amp 3 Power + 1 Ground +1 Pilot, 400 Amp 3 Power + 2 Ground +1 Pilot
- 2. Refer to Option Combination Matrix Table D on page 10 to determine which options can be combined.

#### **ORDERING PROCEDURE (WITH OPTIONS):**

Example: 8 kV, 250 Amp, female receptacle, cable mount, #2 cable, outside cable diameter 2.25", corrosion resistant, epoxy coated white

Basic Catalogue Number C80C2005F Gasket Kit Catalogue Number C150F3017

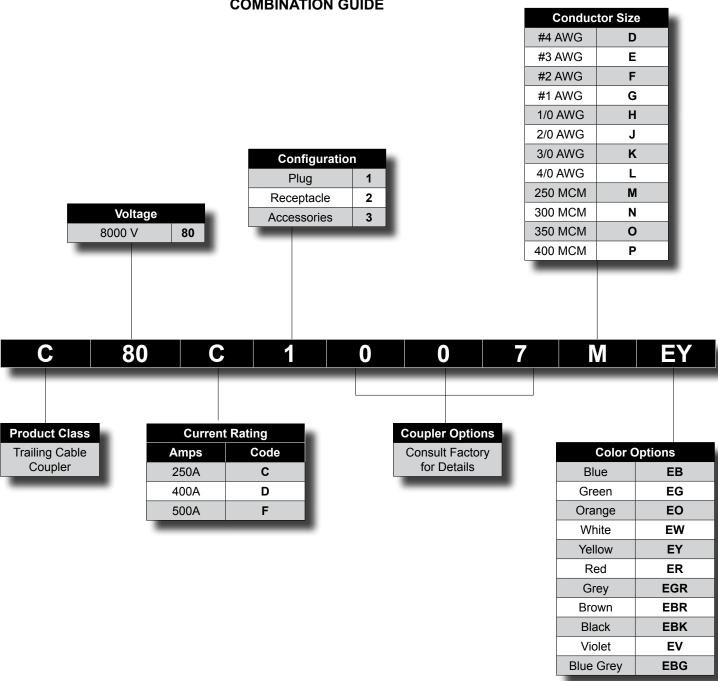
Corrosion Resistant Option Epoxy coating-cable mount

**Catalogue Number:** Will be assigned by Patton & Cooke at time of order entry. Contact factory if preassigned number is required. If other options are required which are not listed, contact Patton & Cooke.

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# COUPLER CATALOGUE NUMBER COMBINATION GUIDE



# 5/8 kV COUPLERS C80 SERIES

## 250 & 400 AMP COUPLER & JUNCTION BOX KITS & ACCESSORIES

## **COUPLER/JUNCTION BOX SKIDS**

Description	Catalogue Number
Tubular skid, with no rollover protection, orange	STA-026
Tubular skid, with rollover protection, orange	STA-021A
Coupler to skid mounting plate c/w hardware. See notes 1 and 2	C80C3006

### NOTES:

- 1. Add leg mount option to couplers for skid mounting.
- 2. One C80C3006 is required for coupler mounting on either STA-026 or STA-021A.

## **LIVE END COVERS**

Current Rating (A)	Male/Female	For use with	Catalogue Number		
250	M	C80C1000x Series	11E-073*		
250	F	C80C2000x Series	11E-073A*		
400	М	C80D1000x Series	C80D3008*		
400	F	C80D2000x Series	C80D3009*		
500	М	C80F1000x Series	CONTACT FACTORY		
500	F	C80F2000x Series	CONTACT FACTORY		

<sup>\*</sup>NOTE: Basic units supplied with Patton & Cooke end of line device. Contact factory if using other manufacturer's products.

## **COUPLER TOOLS**

Description	Catalogue Number
Contact insertion tool	11D-070
Complete coupler assembly tool kit. Includes contact insertion tool, 7/16" combination wrench, 7/32" and 1/4" A/F hex screwdriver, 10" adjustable wrench, 8" slot screwdriver, 3/4" crowfoot wrench, 6"-3/8" drive extension and 3/8" drive ratchet assembled complete in tool box.	C80C3007

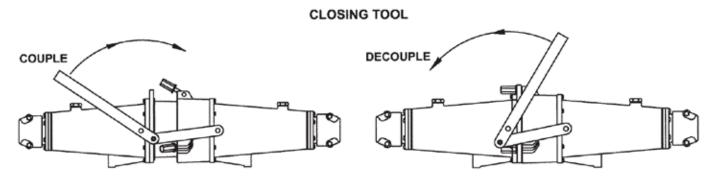
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# 5/8 kV COUPLERS C80 SERIES

## 250, 400, & 500 AMP COUPLER ACCESSORIES



## CLOSING TOOL AND HANDLE ASSEMBLY SHOWN IN USE ON 8 kV COUPLER

Assists in coupling and decoupling of 5 and 8 kV trailing cable couplers fitted with Patton & Cooke three bolt quick connection system.

By simply adding the bracket sets to cable mounted plugs and receptacles, coupling and decoupling now becomes a simple, one person operation. No threads, no collars, no hassles.

The closing tool has a positive locking pin and sleeve that can easily be unclipped for handle removal; freeing the handle for safe storage or for use on the rest of the power distribution system.

Manufactured from heavy duty steel with corrosion resistant hardware and pivot parts. Finished in durable, highly visible baked on epoxy powder coating.

Illustration (not to scale)	Description	For use with P&C Coupler
	Handle Assembly for use with bracket kit.	C80C Series C80D Series
	Bracket assembly consisting of two brackets and stainless steel mounting hardware for use on either cable mounted plug or receptacle. (Kit will adapt one cable end).	C80C Series C80D Series
	Bracket assembly consisting of two brackets and stainless steel mounting hardware for use on either equipment mounted plug or receptacle. (Kit will adapt one cable end).	C80C Series C80D Series
****	Handle assembly for use with bracket kit.	C80F Series
	Bracket assembly consisting of two brackets and stainless steel mounting hardware for use on either cable mounted plug or receptacle or equipment mounted plug. (Kit will adapt one cable end).	C80F Series
	Bracket assembly consisting of two brackets and stainless steel mounting hardware for use on either equipment mounted receptacle. (Kit will adapt one cable end).	C80F Series

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## **COUPLER GASKET KITS**

#### C80 - 500 Amp Series

Each Patton & Cooke GA-V195 Gasket Kit includes all the gaskets and seals required for any one C80F coupler series.

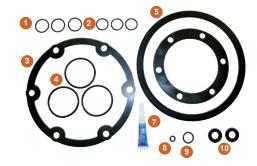
C80F - 500 Amp Series		
1. (1) Cover/Hood Gasket	5. (1) Pilot Stem Gasket (Large Style)	
2. (1) Entrance Fitting Gasket	6. (2) Body Ground & Pilot Stem (Small Style)	
3. (2) Phase Insulator Plate Gasket	7. (1) Adhesive	
4. (3) Insulator Tube Seals	8. (4) Phase & Ground Stem Gasket	
4. (0) Insulator Tabe Seals	o. (+) I hase a croana ctem casket	



## C80 - 250/400 Amp Series

Each Patton & Cooke GA-V194 Gasket Kit includes all the gaskets and seals required for any one C80 coupler series.

C80C - 250 Amp Series & C80D - 400 Amp Series		
1. (3) Phase Stem Gasket	6. (1) Entrance Fitting Gasket	
2. (3) Phase Stem Gasket	7. (1) Adhesive	
3. (1) Front to Rear Body Gasket	8. (1) Pilot Stem Gasket	
4. (3) Phase Insulator Gasket	9. (1) Pilot Insulator Gasket	
5. (1) Cover/Hood Gasket	10. (2) Ground Stem Gasket	



# **CUT-OUT DETAILS FOR EQUIPMENT MOUNT COUPLERS**

