



PATTON & COOKE

Capnut Terminations (Potheads)



Patton & Cooke offers Capnut Terminations for single and three conductor underground cable systems through to 35 kV.

Capnut terminations are designed for use where insulated cables are connected to generators, switchgear, transformers, overhead lines or sectionalizing equipment. These terminations are suitable for any construction extruded dielectric, paper insulated, armored or teck cable.

Single conductor and three conductor units are available in voltage ratings of 5, 8.7, 15, 25 and 35 kV and accept #4 to 2000 MCM conductor sizes. A diverse selection of aerial lugs and entrance fittings allow easy installation of completed units.

To compliment our Capnut Termination product line, Patton & Cooke has designed product alternatives that eliminate the use of porcelain. The Rotary Arm Oil Switchgear Repair Bushings are vacuum cast from silica based thermal setting resin and replace original porcelain bushings. Patton & Cooke also offers Single Phase Apparatus Bushings.

All Patton & Cooke products are supported by excellent customer service. A complete spare parts inventory is maintained to ensure prompt delivery of assembled units. Patton & Cooke customers also enjoy the product and application solutions provided by our engineering services.



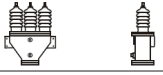

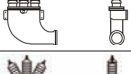


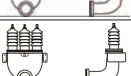





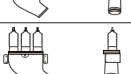
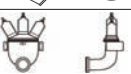


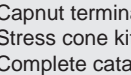
UNIQUE FEATURES	BENEFITS
Indoor bushings are vacuum cast from silica based thermal setting resin	<ul style="list-style-type: none">• Possesses high dielectric (600V/mil)• Resistant to all acids, alkalis and solvents• Superior resistance to mechanical stress fracturing
Outdoor bushings are manufactured from high grade, wet process porcelain	<ul style="list-style-type: none">• Provides maximum insulation and superior electrical properties• Offers excellent mechanical stress characteristics
Complete line of aerial lugs and entrance fittings available	<ul style="list-style-type: none">• Accommodates all installation requirements
Connectors are sized for customers' specific conductors	<ul style="list-style-type: none">• Easier installation
Bodies are cast of the highest grade aluminum and heat treated	<ul style="list-style-type: none">• Produces a lightweight unit• Heat treated bodies provide increased strength
Three conductor capnut terminations are available in four different body styles	<ul style="list-style-type: none">• Allows installation where space is limited
Connectors are made of copper alloy	<ul style="list-style-type: none">• Ensures excellent conductivity
Compatible with other manufacturers	<ul style="list-style-type: none">• Allows direct product replacement• Saves time and money
Completed units are pressure tested	<ul style="list-style-type: none">• Guarantees integral construction
Available with standard copper solder connectors or optional compression connectors	<ul style="list-style-type: none">• Flexibility of design suits all preferences
Vertical style mounting brackets are cast in design for termination body	<ul style="list-style-type: none">• Reduces installation time
Assortment of entrance fittings available for all types of cable and conduit	<ul style="list-style-type: none">• Adapts to all installation requirements



High Voltage Equipment Solutions. Design and Manufacturing.

We make the connection.

CAPNUT TERMINATIONS CATALOGUE NUMBERS

Illustration (not to scale)	Description	Catalogue Number			
		5 kV	8.7 kV	15 kV	25 kV
	Single Conductor Round Shape (Outdoor)	TR-31x	TR-41x	TR-51x	TR-61x
	Three Conductor Flat Shape Divergent (Outdoor)	TF-33x	TF-43x	TF-53x	TF-63x
	Three Conductor Flat Shape Parallel (Outdoor)	TLF-33x	TLF-43x	TLF-53x	TLF-63x
	Three Conductor Side Shape Parallel (Outdoor)	TS-33x	TS-43x	TS-53x	TS-63x
	Three Conductor Side Shape Parallel (Outdoor)	TLS-33x	TLS-43x	TLS-53x	TLS-63x
	Three Conductor 45 Degree Shape Divergent (Outdoor)	TD-33x	TD-43x	TD-53x	TD-63x
	Three Conductor 45 Degree Shape Parallel (Outdoor)	TLD-33x	TLD-43x	TLD-53x	TLD-63x
	Three Conductor Back Shape Divergent (Outdoor)	TB-33x	TB-43x	TB-53x	TB-63x
	Three Conductor Back Shape Parallel (Outdoor)	TLB-33x	TLB-43x	TLB-53x	TLB-63x
	Single Conductor Round Shape (Indoor)	NR-31x	NR-41x	NR-51x	NR-61x
	Three Conductor Flat Shape Divergent (Indoor)	NF-33x	NF-43x	NF-53x	NF-63x
	Three Conductor Flat Shape Divergent (Indoor)	NLF-33x	NLF-43x	NLF-53x	NLF-63x
	Three Conductor Side Shape Divergent (Indoor)	NS-33x	NS-43x	NS-53x	NS-63x
	Three Conductor Side Shape Parallel (Indoor)	NLS-33x	NLS-43x	NLS-53x	NLS-63x
	Three Conductor 45 Degree Shape Divergent (Indoor)	ND-33x	ND-43x	ND-53x	ND-63x
	Three Conductor 45 Degree Shape Parallel (Indoor)	NLD-33x	NLD-43x	NLD-53x	NLD-63x
	Three Conductor Back Shape Divergent (Indoor)	NB-33x	NB-43x	NB-53x	NB-63x
	Three Conductor Back Shape Parallel (Indoor)	NLB-33x	NLB-43x	NLB-53x	NLB-63x

SELECTION REMINDERS:

1. Capnut terminations with 35 kV voltage ratings are also available. Contact factory for details.
2. Stress cone kits and potting compound are sold separately.
3. Complete catalogue number listings are available for all capnut terminations shown above. Contact factory to receive separate listings.

ORDERING PROCEDURE:

1. Determine the following: a) Single or three conductor b) Outdoor or indoor use c) Maximum voltage, kV d) Parallel or divergent bushings and body style for three conductor.
2. Provide the maximum cable size, from #4 to 2000 MCM, from Table A below and substitute appropriate code for x in catalogue number.
3. Specify a) the type of entrance fitting and b) the type of aerial lugs required for overhead conductor(s), from Tables B and C below.

Example: Three conductor, outdoor, 15 kV, 500 MCM max. cable, divergent bushings, flat body shape, wiping sleeve equipped for cable entry and universal clamp type aerial lugs.
 Capnut Termination Catalogue Number **TF-354-WS-1**

TABLE A: Cable Sizes

Description		Catalogue Number Suffix-x
21	#4	1
54	1/0	2
127	250 MCM	3
178	350 MCM	3.5
254	500 MCM	4
380	750 MCM	5
507	1000 MCM	6
633	1250 MCM	7
760	1500 MCM	8
1013	2000 MCM	9

TABLE B: Entrance Fittings

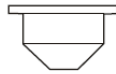

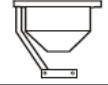

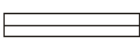










Illustration (not to scale)	Description	Catalogue Number Suffix
	Wiping Sleeve	WS
	Inverted Wiping Sleeve	WSV
	Wiping Sleeve & Armour Clamp	WSAC
	Stuffing Box	SB
	Double Plate Stuffing Box	DPL

TABLE C: Aerial Lugs

Illustration (not to scale)	Description	Catalogue Number Suffix
	Stuffing Box & Armour Clamp	SBAC
	Steel Wire Armour Clamp	SWAC
	Conduit Coupling	CC
	Stuffing Box & Conduit Coupling	SBCC
	Teck Fitting	SBT
	Universal Clamp Type	1
	Bus Type for Vertical Surface (NEMA standard)	2N
		2ND
		4N
	Bus Type for Horizontal Surface	5

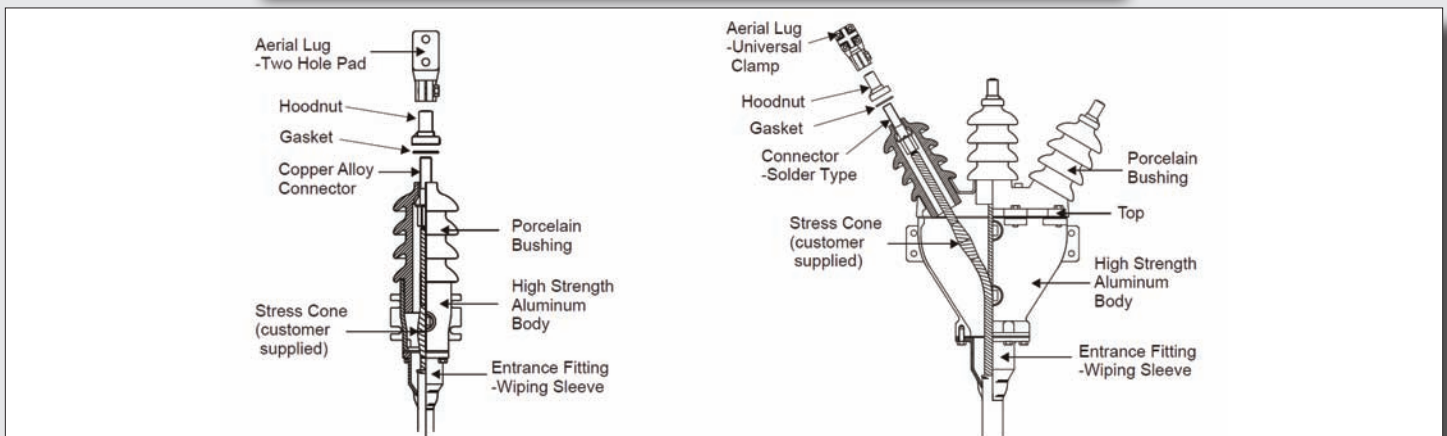


FIGURE 1: Cut-away view of a single conductor capnut termination, TR-51x-WS-2N

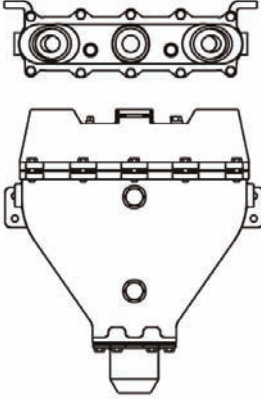
FIGURE 2: Cut-away view of a three conductor capnut termination, TF-53x-WS-1

ELECTRICAL RATINGS FOR CAPNUT TERMINATIONS

Description	5 kV Class Ratings	15 kV Class Ratings	25 kV Class Ratings
BIL	75 kV	110 kV	150 kV
CURRENT RATING (Amp)	Same as Cable		
WITHSTAND VOLTAGE			
AC (1 minute, dry)	25 kV	50 kV	65 kV
AC (6 hours, dry)	15 kV	35 kV	55 kV
AC (10 seconds, wet)	25 kV	45 kV	60 kV
DC (15 minutes, dry)	50 kV	75 kV	105 kV

SPREADER HEADS

Spreader heads are used with single phase capnut terminations for installations where greater pole top aerial spacing is required.

Illustration (not to scale)	Description	Catalogue Number
	Three Phase 25 kV	TSF-634-WS

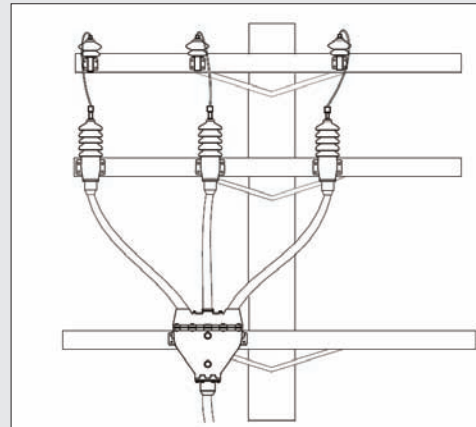
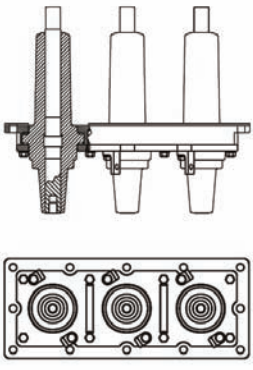


FIGURE 3: Installation using a spreader head and three single conductor capnut terminations.

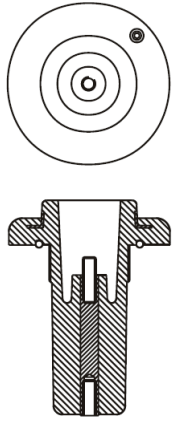
Rotary Arm Oil Switchgear Repair Bushings

Replaces original porcelain bushings

Illustration (not to scale)	Description	Catalogue Number
	Three Phase 25 kV, 600 Amp, Oil-to-Air Splice Joint Suitable for Enclosed Environments. Separable Interface Manufactured to ANSI/IEEE Standard 386	BU-003

Single Phase Apparatus Bushings

For use on apparatus

Illustration (not to scale)	Description	Catalogue Number
	Single Phase 2 1/2 to 35 kV up to 2000 Amp Suitable for Enclosed Environments. Separable Interface Manufactured to ANSI/IEEE Standard 386	Contact Factory