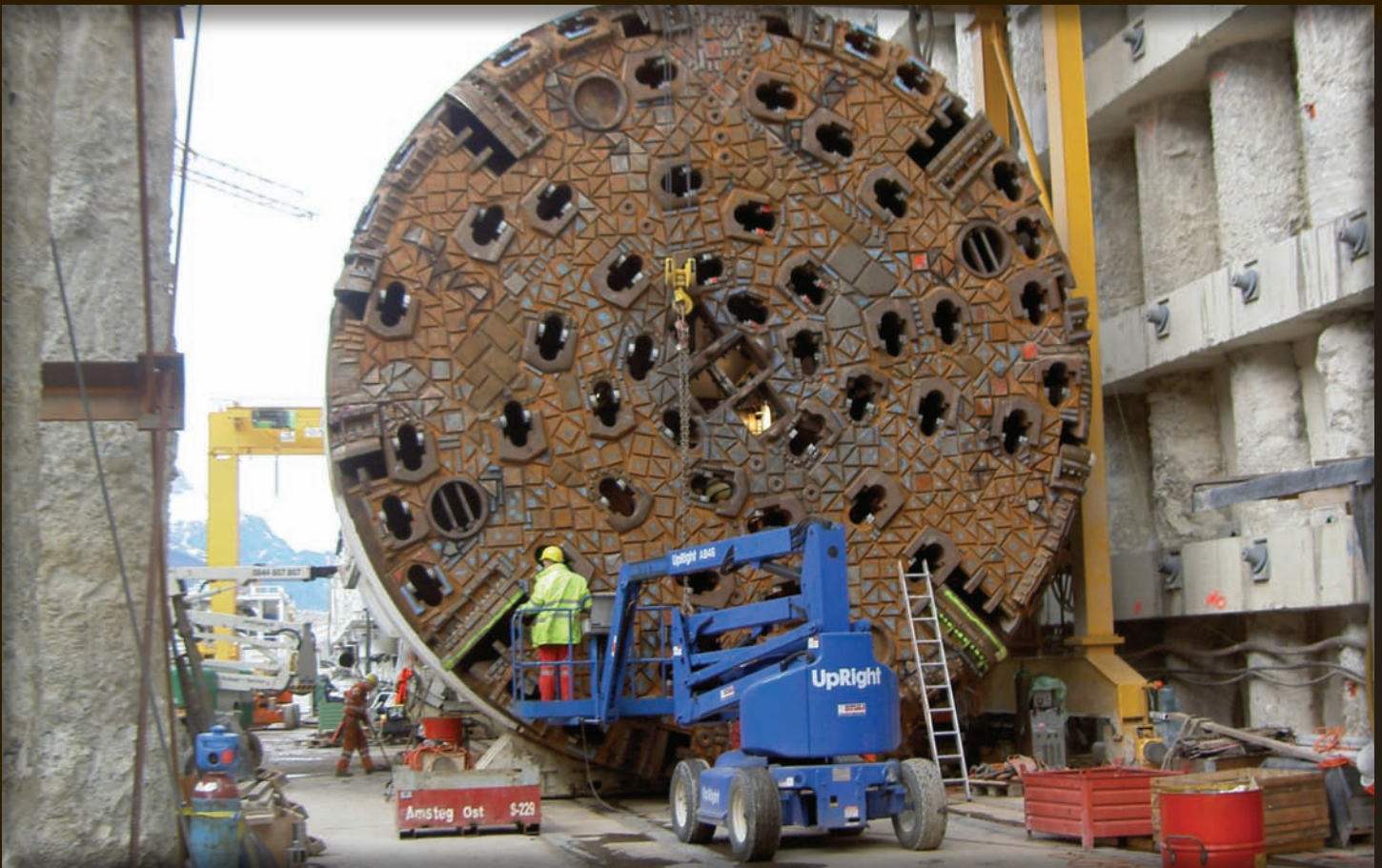




PATTON & COOKE CO.

Tunneling & Shaft Sinking Catalogue



www.pattonandcooke.com



OUR BEGINNING

Patton & Cooke was established in 1961 in Vancouver, BC Canada by an electrical engineer and an electrical designer with over 40 years combined experience in the design and manufacture of products for the electric utility industry. Patton & Cooke's focus has remained the same throughout the growth of the company - to develop and manufacture high voltage equipment with a commitment to quality products at competitive prices.

OUR PLANT

Patton & Cooke has a modern 30,000 sq/ft plant in Surrey, a rapidly growing suburb of Vancouver, BC. Our location is ideal - we're situated in the heart of Canada's gateway to the Pacific Rim, and only minutes from the United States border.

Our plant has complete Computer Aided Design (CAD/Solidworks), product testing, fabricating and assembly facilities. Quality assurance is paramount and our plant meets the highest applicable industry standards.

OUR SUPPORT

Patton & Cooke's team of field technicians is continually working with customers to co-develop, customize and improve products. This has resulted in many design improvements and innovations.

We also help our customers install, operate and maintain our products and provide valuable in-field training. Such support is an important part of the world-wide reputation we enjoy for rugged and dependable products, backed by skilled and responsive in-field service.

OUR PROMISE

Patton & Cooke designs and manufactures medium voltage electrical equipment with a commitment to delivering quality products at competitive prices.

We will measure our success by:

- Delivering manufactured products that will meet or exceed the standard of quality expected by our customers.
- Working closely with industry partners to develop new, innovative medium voltage products that address the needs of the industries we serve.
- Seeking and promoting strategic industry alliances to ensure the availability of Patton & Cooke products globally, while maintaining the highest levels of customer service.
- Continuing to set the standard for the timely delivery of medium voltage electrical equipment.

As we look to the future, we envision many new and different products, each designed and manufactured to our customers exacting standards, and all sharing in the Patton & Cooke principle: listen to the customer and provide them with quality products that address their needs.

So, if you have a challenge, an obstacle, or an issue making an electrical connection, let us put our knowledge to work for you.





WE MAKE THE CONNECTION

TOTAL COST OF OWNERSHIP

When making a major purchase, conventional wisdom suggests looking not simply at the purchase price of an item, but all the costs associated with ownership of the item throughout its useful life cycle (TCO).

DIRECT COSTS

- Maintenance Costs
 - * Time
 - * Replacement Parts
 - Costs
 - Availability
- Disposal Costs
 - * Salvage Value

SECONDARY COSTS

- Machine Downtime
- System Reliability
- Personnel Time

SPECIFYING PATTON & COOKE COUPLERS

For most large projects, the choice of equipment will be a significant risk factor and source of cost overruns. In a tunneling project, a failure in the electrical system will bring men and machines to a sudden halt as the unscheduled maintenance process eats at the project's time line.

Choosing the right equipment for a tunneling project means reducing the risks of unscheduled stoppage and shortening the downtime in the event of system failures.

PRODUCT FEATURES

Patton & Cooke couplers incorporate a variety of exclusive features, such as front end replaceable parts, that both enhance their performance and help ensure that any downtime in the electrical system will be minimized.

SERVICE & SUPPORT

We can arrange for your cable to arrive at your job site according to your scheduled requirement. Cable is cut to the required length, reeled and supplied with electrical connectors. Patton & Cooke also provides you with spare parts to get your system operating quickly in the event of cable or coupler damage. We can even refurbish your couplers at the end of the project so you will be ready for the next one.



TRAILING CABLE COUPLERS

Trailing cable couplers are our most sought after product. Our trailing cable couplers distribute electrical power of 600 Volts up to 25 kV and 700 Amps. Safety, ease of operation, and low maintenance are the driving forces behind Patton & Cooke couplers.

Proven performers in the harshest environments, Patton & Cooke couplers are also versatile; accommodating a wide variety of cable types including embedded fiber optics.

Patton & Cooke's global network of partners and service providers are also available to offer installation and on-site technical support.



DEVICE OFF GROUND/CABLE BOSS

The Device Off Ground and Cable Boss were designed to protect and prolong the life of all your electrical cables around a mine site. They can also be used to identify road boundaries, closures, and many other applications. The Device Off Ground also has the added benefit of supporting junction boxes and mated couplers.

DEVICE OFF GROUND FEATURES:

- Highly visible orange
- Stackable for easy shipping and storage
- Highly visible reflectors for added night time visibility
- Hand grips on each side for easier handling
- Supports cables, hose, pipe, junction boxes, and mated couplers
- Dimensions: Base width 30" (76.2 cm) x Height 25" (63.5 cm)
- Weight: 32 lbs (14.5 kg)

CABLE BOSS FEATURES:

- Optional solar or battery powered locating lights provides additional night time visibility.
- Octagonal wide base for greater stability.
- Hand grips on each side for easier handling.
- Accommodates 4.25" diameter cables.
- Light, yet durable.
- Meets CSA M421*
- Dimensions: Base Width 25" (63.5 cm) x Height 33" (83.8 cm)
- Weight: 12.5 lbs (5.7 kg)

*Cables shall be routed to avoid damage and be maintained visible by being mounted on suitable markers at regular intervals throughout the cable route. Cable couplers shall be suitably supported off the ground.



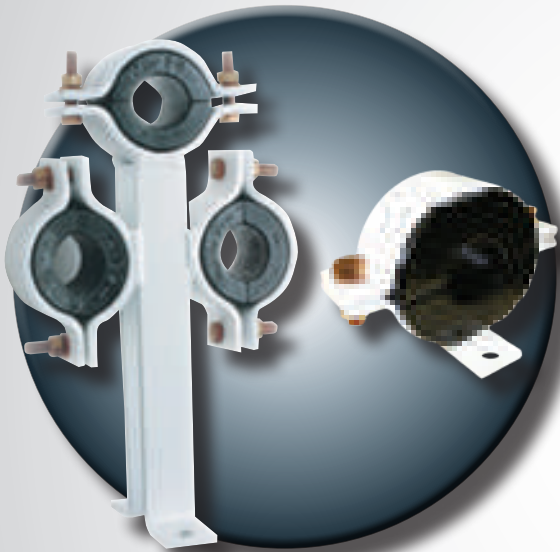
WE MAKE THE CONNECTION

TERMINATION KITS

Patton & Cooke offers a full line of heat shrink termination kits for use in cable couplers, as well as for indoor and outdoor power distribution applications.

Copper and aluminum terminal connectors and butt splices are also available.

Cold shrink terminations are available upon request.



CABLE RISER BRACKETS

Patton & Cooke cable riser brackets attach insulated cable, conduit or piping to walls, roofs and poles. The brackets keep the cable rigidly held in place.

Available in a variety of combinations and sizes; low and high profile mounting brackets for one or three cables.

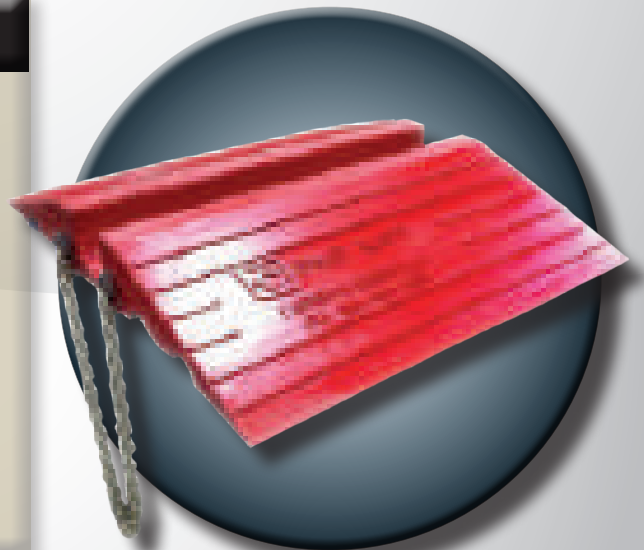
Cable riser brackets are intended for cable support, but have been load tested to 400 lbs.

CABLE CROSSOVER

Designed to protect your cables from service vehicles and prolong the life of your cables. Ideal for use in temporary locations or where cables are moved frequently.

FEATURES:

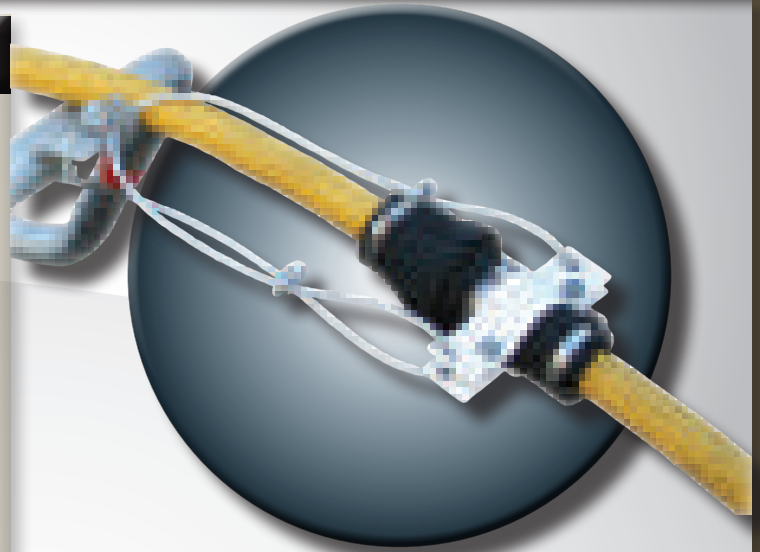
- 1/2" steel chain handles molded into full length of mat for ease of handling
- Manufactured with your choice of hard (90 Duro) or soft (73 Duro) polyurethane rubber
- Customized to any length you require
- Accommodates 3.5" and 4.5" cables
- Supplied with or without a protective rubber cap
- Safety orange for better visibility



STRAIN RELIEF CLAMP SYSTEM

The strain relief clamp is designed to prevent cable jacket damage and to withstand the tough use typical in mining, tunneling, and construction applications.

- Eliminates strain on the cable connections at the coupler/enclosure and mobile equipment interface
- Supports a cable in vertical shaft and pole suspension applications.
- Corrosion resistant with galvanized hardware and wire rope.
- The strain relief clamp covers a cable diameter range of 0.625"-3.625" (16-92 mm). Larger sizes are available on request.



V-CLAMP

Used in shaft sinking or other vertical cable suspension applications, the V-Clamp will secure the cable to the shaft wall. As more weight is added, clamping force and compression is applied on the cable jacket.

FEATURES:

- Urethane clamp blocks - with flame retardant additive.
- Urethane clamps won't damage cable cores or jacket.
- Keyhole mounting eases installation.
- Latch aids in cable installation while maintaining frame integrity.
- Urethane blocks available in 1/4" increments to ensure a correct fit to your cable.
- Stainless steel frame.
- Available in sizes to accommodate 2 1/4" through 3 1/2" O.D. cables
- Standard proof loading to 800 lbs, test performed using SHD-GC cable with CPE jacket material.

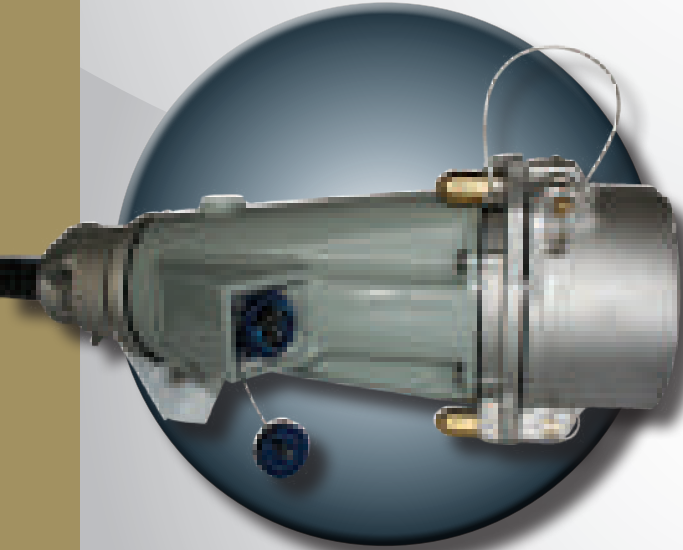


FIBER OPTIC SUPPORT

Patton & Cooke has integrated fiber optic capabilities into our rugged and dependable mining cable couplers. Integrating fiber optic cable into mining cable provides suitable protection for the fiber elements, and Patton & Cooke's multichannel fiber connectors make connection and disconnection of the fiber quick and easy.

FEATURES:

- Single mode or multi mode
- Up to 18 channels
- IP 68 protection
- Low insertion loss
- 2.5 mm termini
- Customizable to meet your specification





WE MAKE THE CONNECTION

FEATURE PROJECTS SUPPLIED

Project:	Frankfurt Airport Tunnel Link
Customer:	Streif Baulegistik
Equipment:	Herrenknecht TBM
Products:	C160 Series 16 kV /500 Amp Coupler
Project:	Gotthard Tunnel, Switzerland
Customer:	Streif Baulegistik
Equipment:	Herrenknecht
Products:	C250 Series 25 kV/400 Amp Couplers C160 Series 16 kV/500 Amp Couplers
Project:	Stillwater East Boulder Platinum - Billings, MT
Customer:	Stillwater Platinum
Equipment:	Lovat TBM
Products:	C150 Series 15 kV/500 Amp Couplers
Project:	RAV Line Tunnel - Vancouver, BC
Customer:	SNC Lavalin/SELI Joint Venture
Equipment:	Lovat
Products:	CT150 - 15 kV/500 Amp Tunneling Series Couplers C80 Series 8 kV/400 Amp Couplers
Project:	San Vicente Pipeline - San Diego, CA
Customer:	Traylor/Shea
Equipment:	Robbins/Mitsubishi
Products:	CT150 - 15 kV/500 Amp Tunneling Series Couplers C10 Series 1100V/145 Amp Couplers
Project:	York Municipal Sewer Upgrade, Toronto, ON
Customer:	McNalley Construction
Equipment:	Lovat
Products:	CT150 - 15 kV /500 Amp Tunneling Series Couplers
Project:	Port of Miami Tunnel - Miami, FL
Customer:	Bouygues Civil Works Florida (BCWF)
Equipment:	Herrenknecht TBM
Products:	CT150 - 15 kV/500 Amp Tunneling Series Couplers
Project:	Olmos Tunneling Project - Lambayeque, Peru
Customer:	Odebrecht Peru Ingenieria y Construction, S.A.C.
Equipment:	Robbins TBM
Products:	C150 Series 15 kV/500 Amp Couplers



Patton & Cooke has been a pioneer in the design and manufacture of high voltage cable couplers for 50+ years. For this reason, Patton & Cooke has become a trusted partner for many of the world's largest mining companies.

In keeping with the ever growing size of Tunnel Boring Machines (TBMs) is the increasing demand for power. Fortunately, reliable power delivery has been Patton & Cooke's business since 1961.

Patton & Cooke's reputation was built on delivering reliable connections in some of the most inhospitable environments in the world: from the high altitudes on the Andean Mountains, to the frozen expanse of Canada's Northwest Territories, to the dry desert plains of Australia - Patton & Cooke couplers are proven performers in harsh conditions.

PATTON & COOKE CO.

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WORLDWIDE SALES OFFICES

Patton & Cooke Co. cooperates with a growing number of highly qualified sales partners around the world who will help you find the solution just right for you.

At www.pattonandcooke.com, you can easily find an authorized Patton & Cooke agent in your area.