Motorized Reels for In-Pit Crushing and Conveying Systems
In-pit Crushing and Conveying (IPCC) systems have been around for over 50 years. But due to recent economic circumstances, mining companies have become increasingly interested in the technology. IPCC systems are a viable alternative to traditional truck and shovel mining due to their sustainable operation and potentially lower operating costs. However, one type of IPCC system does not suit all operations. The areas to be mined, the compatibility with other elements of the system, and the ease of machine relocation all come into play.

An IPCC system demands more electrical power at the mining face than an equivalent truck and shovel operation. Cables must be managed to power a combination of machines. Conveyor drives, mobile equipment, and ancillary equipment such as hopper cars, all require reliable and flexible power sources that can move with the system.

Managing the trailing cable for a single moving machine, such as a shovel, dragline, or drill, requires careful planning in and of itself. Adding other machines that move relative to one another on a regular basis complicates the operation of the system.

Ideally, electrical equipment should be mounted on the moving machines. But with most mobile equipment, on-board space is limited. The size and weight of some equipment might force it to be moved off the machine and onto skid-mounted (or “sled”) units. The cable reel system is often a good candidate for off-machine operation.

Conductix-Wampfler Motorized Cable Reels are ideal for managing power cables as the equipment moves along the bench. We design and manufacture reels that mount on mobile machines or on skids as shown at the right. Either way, we have the solution for In-pit Crushing and Conveying systems!
The “Single Motorized Reel Unit” is a skid-mounted reeling machine featuring a single level-wind spool and cable guide system.

The standard configuration includes:

• Double-wrap spool supplied with or without cable. Cable specifications to be determined.
• 30 meters (100 ft) of feeder cable to connect the reel to the power source.
• 305 meters (1000 ft) of spooled cable to power the mobile machines (one reel unit required for each machine).
• Free-wheel action to let the reel pay out cable as the machine moves forward.
• Junction box mounted switch to engage the cable rewind mechanism.
• Lifting hooks and/or mounting skids to reposition the unit.

The “Dual Motorized Reel Unit” is a skid-mounted reeling machine that includes a level-wind reel for incoming power and an “umbilical cable” monospiral reel for the mobile machine. The magnetic coupler mechanism on the monospiral reel allows it to automatically pay out or take up cable as the machine moves. This creates a safer condition for the machine operator and protects the cable.

The standard configuration includes:

• 305 meters (1000 ft) of spooled cable on the level wind reel to go from the power source to the reel location. The free-wheel allows the cable to pay out as the reel is moved. The Junction box switch initiates cable rewind when payout is at maximum.
• A monospiral umbilical reel that can pay out up to 48 meters (157 ft) of cable before the unit needs to be moved. Cable is under tension and will pay out and retrieve automatically.
• Lifting hooks and/or skids to reposition the unit.