

Bingham Canyon Mine electric shovel fact sheet

August 2013

Electric shovel

- The Bingham Canyon Mine has 12 shovels (10 electric, two hydraulic) that fill an average of 2,100 haul truck loads each day.
- The 4100XPC giant electric shovel pieces arrived on 60 semi-trucks and 10 rail cars, and were assembled on site.
 - Approximately seven truck loads carried metal barrels full of small steel beads, which are used as counterbalances to offset the weight of the 160,000-lb. shovel dipper.
 - It takes a crew specializing in heavy equipment 50 to 55 days working six days per week, 10 hours per day to build a new electric shovel.
- The shovel cab is approximately 40 feet tall, and the top of the boom is nearly 70 feet tall.
- The haul truck operator sits at a height of more than 30 feet.
- Each shovel weighs approximately 3.4 million pounds.
- The dipper of the new electric shovel model is about 30 percent larger than previous models to improve loading efficiency. It is outfitted with a 74-yard dipper, which scoops 120 tons per scoop, or the equivalent of 60 automobiles.
- Electric shovels are larger and have a higher production rate than hydraulic shovels, but more time and effort are required to mobilize them to new dig sites within the mine.
- About eight shovels are moved more than a mile to new dig sites each month.
 - Moving a shovel can take up to two days and may include lifting power lines for safety.
 - The move fills the entire haul road and requires a rubber-tire dozer, which pulls the shovel's power supply. The dozer coordinates with the shovel operator to move the machinery in sync to a new location where a power station is set up.
- Electric shovels can last up to 20 years.
- New shovels run on electricity instead of gas or diesel, reducing emissions by 50 percent. A large extension cord attached to the shovel plugs into Kennecott's power system.