



**JOY MINING MACHINERY**  
A Joy Global Inc. Company

## NEWS RELEASE

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### **Joy Mining Machinery Ships 300<sup>th</sup> AC VFD Shuttle Car**

WARRENDALE, PENNSYLVANIA – June 2007 - Joy Mining Machinery, the inventor of the shuttle car, marks yet another milestone in underground mine haulage with the shipment this month of the 300<sup>th</sup> shuttle car equipped with the company's trademarked OPTIDRIVE AC variable frequency drive (VFD).

Coincidentally, the 300<sup>th</sup> AC VFD shuttle car—a 10SC32BC model—is being shipped to Jim Walter Resources' underground coal mine in Brookwood, Alabama, not far from where the very first JOY OPTIDRIVE AC-VFD shuttle car went into operation just four years ago at Drummond Coal Co.'s Shoal Creek Mine in Adger, Alabama.

During those four years, Joy Mining Machinery has shipped OPTIDRIVE AC-VFD shuttle cars to ten countries: Australia, China, India, Italy, Mexico, Norway, Russia, South Africa, the United Kingdom and the United States. According to Joy, these machines have been operating in some of the toughest, most rugged mining conditions in the world, successfully contending with significant amounts of rock and other seam-intrusive materials, tram-challenging slopes and muddy roadways and low seams that provided minimal operating heights.

Since the introduction of its OPTIDRIVE AC variable frequency drive in the spring of 2003, Joy reports that shuttle car sales increased steadily, while the percentage of units sold with OPTIDRIVE skyrocketed in just the second year.

In 2003, during which OPTIDRIVE was available for just more than half the year, 10% of the JOY shuttle cars sold had OPTIDRIVE AC-VFD. In 2004, that soared to 87% of the units sold and, last year, increased further to 91% of sold units.

JOY shuttle cars are available in eight models of six increasing capacities designed to accommodate virtually any underground wheeled-haulage requirement. Smallest of the machines, the 21SC04 can haul 9 tons (8 tonnes) of material, while the largest of the models, the 10SC32D, is rated at 33 tons (30 tonnes). Falling between the two extremes are the 10SC32AA and 10SC32A, both capable of hauling 12 tons (11 tonnes) of mined material; the 10SC32AB and 10SC32B, rated at 15 tons (14 tonnes) each; the 10SC32BC, with a capacity of 18 tons (16 tonnes), and the 10SC32C, capable of hauling 22 tons (20 tonnes).

More than 90% of the 2700 shuttle cars operating today worldwide are employed in underground coal mines, according to Joy, which affirms that shuttle cars remain the lowest cost-per-ton haulage method available today.

According to the company, OPTIDRIVE was a major breakthrough in applying AC variable frequency drive to shuttle cars and has resulted in significant increases in power, speed and productivity. Prior to OPTIDRIVE, Joy says the mine operator had to choose one of three drives: AC drive if the mine had steep gradients or either AC/DC or DC drive if the mine was fairly level. OPTIDRIVE, Joy says, was designed to work well in all conditions, providing the needed power of the AC drive and the smooth acceleration of an AC/DC or DC drive.

With OPTIDRIVE, the shuttle car's top speed of about 4 mph (6 kph) was increased to 6 mph (9 kph), the international standard allowable top speed, Joy says, adding that this 50% increase in the maximum speed has the potential to increase mine production by 10% which, in a typical situation, amounts to a difference of five additional loads per shuttle car, per shift.

Additionally, Joy says mine performance studies have shown JOY shuttle cars with OPTIDRIVE AC VFD have less motor maintenance when compared to haulage vehicles having AC/DC drives or DC drives, primarily because DC traction motors have brushes that must be replaced about every six months. Shuttle cars also have lower maintenance costs than AC drives with soft start and, the company adds, they consistently outperform and have lower maintenance costs than battery and diesel powered haulers, as well as cascading chain haulage systems.

Joy also notes that, with the interchangeability of OPTIDRIVE—a single, AC variable frequency for all JOY mining equipment—allows the mine operator to minimize his inventory while simplifying and maximizing the efficient of equipment maintenance and repair. OPTIDRIVE was introduced on longwall shearers in 1998, continuous miners in 2001, Flexible Conveyor Trains in 2002 and, in 2003, shuttle cars.

With the vast majority of new shuttle cars, as well as some rebuilds, now having OPTIDRIVE AC VFD, Joy says the combination of more tons per shift, reduced maintenance costs, and minimal downtime means moving more material at less cost-per-ton and a positive impact on the bottom line for the mine operator.

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*Joy Mining Machinery, a subsidiary of Joy Global Inc., is a global leader in the development, manufacture, distribution and service of underground mining equipment for the extraction of coal and other bedded materials. For more information on Joy Mining Machinery visit [www.joy.com](http://www.joy.com)*