

**SAMINCO A750
POSITIVE TRACTION DIFFERENTIAL ACTION**

Shuttle Cars and Coal Haulers must turn corners during the mining cycle. During cornering the wheels on the inside of the turn travel less distance than the wheels on the outside of the turn. This means that the outside wheels must turn faster in order to keep up with the wheels on the inside of the turn. This condition is called torque steering. Torque steering causes the vehicle to have a larger turning radius and to damage the ground under the wheels as the car skids to the outside of the turn.

Automobiles address this same issue through the use of a differential mounted in the axle assembly. This differential allows the wheels to provide equal amounts of torque but travel at different speeds.

SAMINCO has developed a proprietary circuit to electronically provide automotive type differential action in all of their electronic traction control products, with one important difference: the Saminco System prevents "torque starvation" if one wheel spins out. If one wheel on an automobile spins out, for example on an icy surface, the other wheel is starved of torque and the automobile is stuck. With the Saminco System, the non-spinning wheel retains full torque to help the car through bad bottom conditions.

The A750 monitors each traction circuit independently. During cornering, the monitoring devices constantly send a feedback signal to the logic in the A750. This feedback signal is used to provide the motors with the proper amounts of current (which creates torque) and allows the controller to deliver the correct voltage (which creates speed) to allow the wheels on each side of the vehicle to track properly around the corner.

This good differential action allows the MACHINE to turn a tighter turning radius under full power. The MACHINE wheels track around the turn rolling under positive, controlled power and do not skid.

In bad ground conditions, this differential action combined with infinitely variable speed control allows the operator to safely travel faster and do less damage to the ground.

Another added bonus to the good differential action is less wear on tires. Because the tires are always rolling and not skidding, the tire tread is not subjected to scuffing and the sidewalls are not preloaded.