

## **FOR IMMEDIATE RELEASE**

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### **New Motor-Spindle Safety System Provides Enhanced Collision Protection**

Mount Prospect, IL, USA, 13 July 2012 – Operating conditions in high-speed milling create a number of factors that can lead to collisions in the machining area during the production process. In machine tool crashes, tool collisions with high feed rates cause high impact peak force values on motor spindles. As a result, spindle damage is common and the cost to repair or replace a spindle as well as lost productivity and downtime can run into the tens of thousands of dollars. In addition, these collisions often cause damage to the cutting tool and machine axes.

The patented collision protection system introduced by Jakob Antriebstechnik (Kleinwallstadt, Germany) at IMTS 2012 and marketed in North America by GAM Enterprises (Mt. Prospect, IL) is based on a double-flange design. In the event of a collision, the system allows a mechanical decoupling of the motor spindle from the feed axis, thus enabling a controlled deceleration of the feed axis before an overload occurs. The motor spindle is screwed to the inner ring of the prevention system at the spindle's flange. The inner ring is in turn located within the outer ring which is screwed to the head stock of the machine tool. The positioning of the inner ring to the outer ring and thus the location of the motor spindle is ensured by a precisely manufactured geometry. The required mounting forces are generated by using permanent magnets and preloaded springs. Depending on the spring pre-load, mounting forces up to 18 kN in axial direction and tilting moments up to 2,300 Nm (in case of a radial load) can be reached. The integrated damping elements absorb the surplus collision energy. The relative movement between the inner and outer ring is recorded at three points on the circumference in the axial direction using displacement sensors integrated in the system.

The system is available for all motor spindle designs and dimensions, is maintenance free, requires no external power source and includes an integrated sensor for highly accurate position control. For a 3D video demonstration of the motor-spindle safety system, go to <http://www.gamweb.com/spindle-safety-system-main.html>