IVT Lightens up Costs and Improves Precision on CNC Routers

Rockford, IL – February 12, 2009

Typical gantry routers can be used to accomplish a wide variety of specialized tasks. From woodworking to foam cutting, CNC routers are a commonplace system found in many different areas on the manufacturing floor. These routers rely on precise linear motion in order to accurately complete objectives. Traditionally, this would entail several mounting components and a painstaking alignment process that drives up production costs and time. However, with the recent introduction of PBC Linear’s patented Integral V™ linear guiding system, this alignment process is a thing of the past!

Routers typically have large work envelopes and rely on the gantry’s structure to support the router head. The router process relies on high speed spindles that run in excess of 20,000 RPM and require the tool to quickly and accurately machine through the material with a series of high speed cuts. Due to the machining process, the machine base does not have to be as robust as a metal cutting machine and their structural members are manufactured typically out of structural aluminum framing. However before the process can run, the linear guide must be precision aligned in a process that could take hours with the old process, or minutes with IVT.

Integral V Technology (IVT) works to reduce installation time and drive down costs by eliminating mounting components while still maintaining a highly accurate linear motion system. Many hours can be
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consumed by the machine builder to properly align their cutting machine with the linear guide. Conventional linear
guide systems rely on mounting components to maintain precision alignment and accurate travel. These
mounting components are installed and arduously aligned to ensure precision in a process that can take hours.
With IVT, the durable aluminum extrusion maintains its tight tolerances throughout the extent of the extrusion!
This is accomplished by IVT’s innovative design and PBC Linear’s newly developed SIMO (Simultaneous Integral
Milling Operation) process.

The SIMO process provides precision machined aluminum extrusions and extremely tight tolerances by using
synchronized tooling to maintain alignment along the rail. In a straight line production process,
SIMO can machine an extrusion concurrently and consistently on all four sides with one pass. This creates a
solution to a common problem in several industries: cost efficient precision machined extrusions. SIMO reduces
the meticulous alignment phase from hours to minutes. From simple linear guides to customized extrusions for
routers, the SIMO can quickly machine out an accurate extrusion at no added cost.

Recently, IVT has been implemented in
several different routers spanning a wide
variety of industries. Using custom-built
extrusions, IVT has drastically reduced the
router’s mounting components, installation
time, and production cost; yielding a
simplified, highly accurate linear motion
guide. With IVT’s custom integrated frame
design, the lightweight aluminum structure
can hold up against immense weight and
provide highly accurate, long-lasting travel for
the router. From installation to the end result,
IVT creates a simplified and economical
solution to linear motion in routing systems.

For more information on Integral V™ Technology (IVT) or the SIMO process, please call 1.800.729.9085, email to
marketing@pbclinear.com or visit us at ivt.pbclinear.com.