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HOW NEW VISTA THREAD-VERIFICATION UNITS WORK

New Vista is today the world's largest manufacturer of thread-verification products for production applications. New Vista Thread-Verification Units (TVUs) are extensively employed in automotive parts plants, at production facilities for aircraft componentry and for industrial and construction equipment, and for constituent parts of medical devices. New Vista's thread-verification products (and compliance devices) are used world-wide and they are covered by a number of patents.

The New Vista system is a "contact" system, meaning that an actual Thread Gage Member (TGM) is screwed into (or onto), and then back out of, the thread being verified. The system works equally well with internal or external threads. Prior to 2006, it was widely regarded that such a system would not be sufficiently fast nor sufficiently reliable for use in a production environment. At that time, noncontact systems were the preferred technology, in spite of the fact that those systems could not provide a positive verification. The introduction of New Vista's ultra-reliable high-speed torque-responsive devices changed peoples' perceptions, to the extent that today a large percentage of New Vista's orders are to replace the older noncontact installations.

There are now more than 35 different models of New Vista Thread-Verification Units available. Having evolved from the original patent, they work basically like this: each features a motorized power unit that, through a low-inertia torque-limiting mechanism, runs a TGM into, through, or onto a threaded feature; and then reverses back out, thus providing 100% assurance that the thread is correct. New Vista TVUs will work with both internal and external threaded features. With the proper TVU, "GO", "NO GO", Combination, and Pipe Thread Gaging are all attainable.

A quick-response motor provides the power. Electric and air powered versions are both available. The low-inertia torque limiter permits the TGM to stall harmlessly when encountering wrong-size, wrong-pitch, short, incomplete, or damaged threads. Also in the drive is a compression-compensating mechanism, which allows the spindle to stop advancing in case the thread is missing, or if a threaded hole has a broken tap in it. If there is no thread present at all, the TGM simply spins ineffectually at the mouth of the hole. These features prevent damage to the TVU, the TGM and the piece part. Any of these events will cause built-in sensors to signal a reject.

To back the TGM out of the hole (or off an external thread), the TVU's drive, when reversed, bypasses the torque control device and reverses out at full motor torque. This feature ensures that the TGM will always exit the part, even if it has just jammed in a tapered, short or damaged thread.

A standard New Vista TVU will permit a moderate amount of compliance for out-of-position or angularly-mislocated threads. For applications where a large amount of positional error must be accommodated (such as welded nuts on car frames), New Vista supplies a variety of Compliant Toolholders that allow the TGM to freely enter threads even though they are significantly mis-positioned.

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