

Mahr Federal's Digimar Height Gage

OUTPACES CMM AT GERHARDT GEAR

Gerhardt Gear, a manufacturer of specialty gears for aerospace and military applications in Burbank, CA, bought a Digimar CX1 height gage from Mahr Federal, expecting it to replace some of its height gages and handle the 500–1,000 piece production runs that previously required hand tools such as pin and height gages, calipers, etc.

Gerhardt Gear had three height gages prior to purchasing the CX1. The Mahr Federal gage had appeal because it could check linear dimensions as well as diameters in a single

machine. It also inspects length, and sometimes Gerhardt uses it to check and compare MOW (measurement over wire) in sector gears.

When the company ordered the CX1, it never intended for it to replace its larger CMMs. And, although the CMMs are still useful in the sense that they work accurately and independently, employees at Gerhardt Gear were surprised that the Digimar CX1 height gage was faster than anticipated. General manager John Kim cites one instance in which it took the CMM more than 20 minutes to check a part's tolerance to within 0.001" or less. The CX1 completed the same measurement in less than one minute.

"In reality, the checking itself doesn't take that long, but a CMM is much more complicated. A CMM is good for multiple dimensions at once, but a lot of times that isn't necessary, and you just need to check a couple of things. The CX1 is much more user-friendly for that. The way the CX1 program is designed, it makes it almost impossible to make a programming mistake," he says.

When a part requires inspection of inside or outside diameter, it usually takes a few seconds to check one piece and provide a reading, Kim says.

The Digimar CX1 is part of a family of motorized, programmable height measuring systems that's suitable for gage lab and production measurement use. Additional features include fully motorized measuring slides that minimize operator influence on part probing for greater measurement precision and repeatability. Key measurement functions are activated with the press of a button, and readily programmable measuring routines enable sample batches of mass-produced parts.

"CX1 helped us in a lot of different ways, but one thing that it really helped us [with] is checking distance between centers on two holes, especially when they are offset. It usually takes about five minutes per part using manual methods, but it only takes about 10 seconds using a CX1. Not to mention that it's very accurate," Kim says.



Gerhardt Gear says its CX1's accuracy is ± 0.0001 ". Specialties of the CX1 include the measuring of planes, grooves, bores and shafts as well as the calculations of distances and symmetries. Max.-min. measurements are supported, as are perpendicularity measurements in conjunction with a digital dial indicator. Canned routines for basic features and simplified teach-and-learn techniques make it easier to program for a variety of measurement tasks.

Rory Neill, product manager at Mahr Federal, says customer interest in the Digimar CX1 has been positive across the board. The CX1s have been popular with both automotive and gear companies.

"It's pretty simple," he says. "If you have a surface gage doing measurements, you should have a height gage right along with it. Otherwise, if you have one small CMM, the person has to wait for free time to put his part on the CMM."

Kim says that the company is seriously considering purchasing a second Digimar CX1 for use on the shop floor.

"Operators aren't as kind to equipment as the folks in the lab, but we think the Digimar is rugged enough and so easy to operate that it will do just fine. And because measurement is programmable, it should really help our in-process inspection," he says.

Kim elaborates on the Digimar CX1, "It's not cheap. But, in the long run, we've found it to be well worth it." ■

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