

Inspection Fixture for Measuring Highly Detailed Parts

Application Note

Mycrona, a manufacturer of advanced 3D multisensor coordinate measuring equipment, needed a way to hold some highly precise parts for inspection for one of their customers. They came to Advanced Machine & Engineering Co. for help.

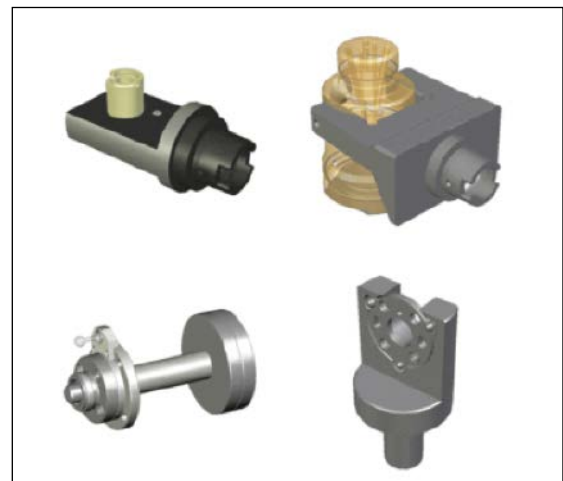
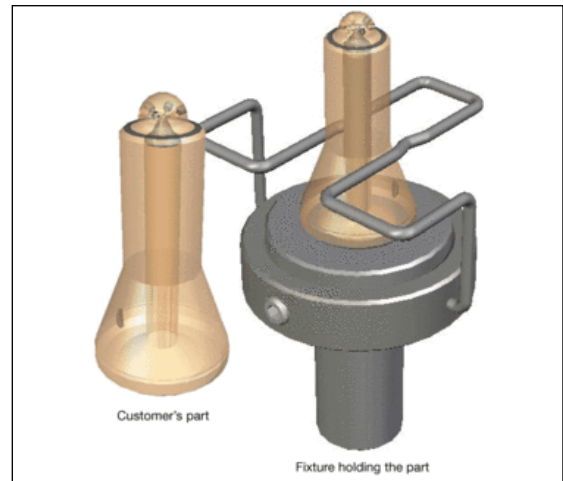
Problem

Mycrona was applying their new optical measuring technique which uses sensitive and fragile glass probes to check the machining accuracy of the parts. They needed fixtures that provided accurate locating, secure holding, with high repeatability, to ensure the most accurate measurement results while preventing damage to the measuring probe. Repeatability between multiple fixtures used on the same measuring machine is important to eliminate the need to probe each fixture for position, prior to using it. This is critical because the measuring equipment is used to probe and measure holes as small as .022", and up to a few inches in depth.

Solution

The customer that was buying the measurement machine had originally specified using bolt-on chucking components to locate and secure the fixtures to the measuring machine indexer. This would introduce positioning errors, provide less secure holding and reduce control of the repeatability of the fixtures' position. AME offered more precise solution resulting in a nearly-one-piece fixture by integrating the high precision HSK toolholding parts into the design for securing the fixture to the measuring machine. Combined with AME's precision machining capability, this technique allowed AME's fixtures to maintain location while holding repeatability to within 0.0002" TIR (total indicator reading).

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More examples of the fixtures designed by AME for Mycrona's customer's measurement application.



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