Fixturing

Master WorkHolding, Inc.

Advanced Workholding Solutions

For Advanced Manufacturing
A zero-turn forklift wheel is held (OP-10 fixture shown) for machining. Seven similar nests were built to locate, clamp, and support the center hub and seven ears. The majority of the hydraulic lines were drilled and manifolded through the fixture components to eliminate external plumbing.

This fixture holds a family of pump bodies. The first operation (OP-10) locates and hydraulically clamps on the casting perimeter. In the second operation (OP-20), precision hydraulic collets locate and clamp on machined bores from OP-10. The part is also clamped similarly to OP-10 on the perimeter. Some parts require a third operation (OP-30) for work done around the perimeter. Solid locators are used, and a hydraulic swing clamp with a custom non-marring clamp pad holds the part on the previously machined surfaces. Each station requires some change-out components to allow this fixture to run over 100 different castings. One machining cycle will produce four finished parts.

Master WorkHolding, Inc. designs, builds, and implements custom workholding solutions for the precision machining industries. Here are just a few of the solutions we have provided for our customers:
This fixture holds water line pipe for machining operations. Hydraulic clamps were used in a special sub-assembly, creating pivot clamps that retract to allow for part loading. Precision linear slides lock into position as the operator sets up the fixture for different sizes of piping.

A V8 engine block is held for cubing operations. Part-retention details keep the casting loaded against the datums while the operator actuates the clamps. Hydraulic clamps were used in a special sub-assembly, creating pivot clamps that retract to allow for part loading. All clamping is underneath the casting, allowing for minimum tool lengths and maximum cutter clearance. A combination of internal and external plumbing was used to reduce chip traps.

Machining of this gear box required a fixture that would locate on cast surfaces inside the casting. Rough locators help the operator align the casting while loading; then the upper mandrel is pulled down into a locked position. Special clamp fingers were designed to hold the part on points inside the casting, on both the lower round flange and upper rectangular flange.
Why Do Business with Us?

_We specialize in custom workholding solutions_

Master WorkHolding, Inc. was founded in 1988 with a commitment to providing custom fixtures solutions for the production machining industry. Our on-site process evaluation, applications engineering, and after-sales service and support will help you survive and succeed in today’s global market.

_Workholding is our business...our only business!

From our proven capability with prismatic and rotational fixtures, to our new and revolutionary Light Activated Adhesive Gripping™ (LAAG™), we can provide the right workholding solution to meet your needs.

_On-time delivery, “works-first-time-out-of-the-box”_

We offer a well-defined internal process for quoting, designing, building, and implementing cost-effective and high-performance solutions ... an uncompromising commitment to on-time delivery ... and a quality reputation second to none.

_Continuous improvement, research, and development_

Our ongoing, companywide emphasis on internal improvement and the development of better workholding and machining processes will assist you in your drive toward manufacturing excellence.

_Master WorkHolding... “Advanced Workholding Solutions”_