

**beyond the mold**

Achieve design freedom through manufacturing excellence.



Other manufacturers have told you it can't be done. Maybe they've pressured you to compromise your design. Forced your ideas to conform to their limited capabilities. Stalled the advances you're trying to make. And now you're ready for a new experience. You're ready for...

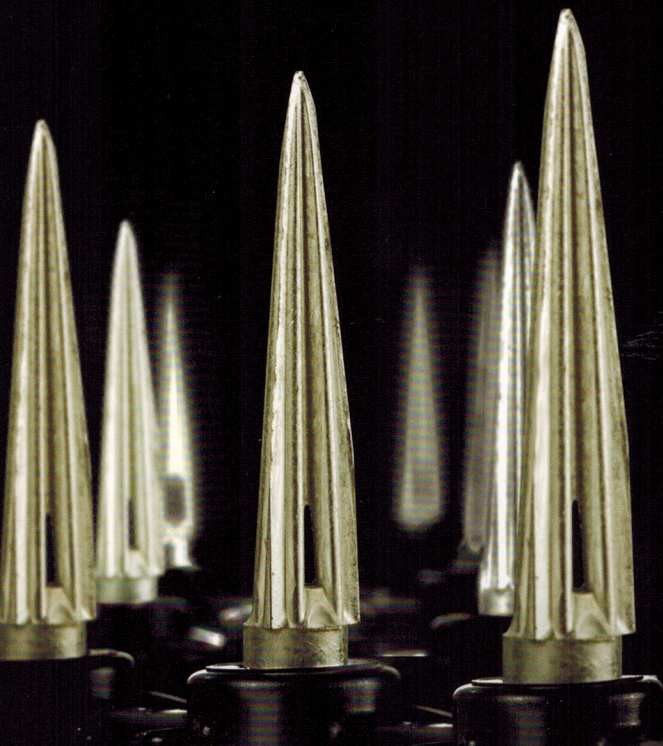
# design free

Bring your project to life as you intended. You set the parameters, and Inventix Manufacturing fulfills them. Inventix delivers high-precision tooling and die cast components that meet your specifications, no matter how complex. No compromises.

Go to Inventix for its expert knowledge and proven reputation for excellence. For its dedication to problem solving, precision and optimal productivity. Collaborate with in-house engineers and specialists using state-of-the-art technologies to achieve quality that exceeds industry standards.

Then watch your investment take shape. Maximize your ROI through cost-efficient processes and superior process controls. Profit from hands-on project management from a single-source provider. And raise your final products to new levels of competitiveness.

**Go beyond the mold** with Inventix Manufacturing and experience design freedom for your next project.



Inventix designed multiple dies, including a family mold, for this plastic medical device housing (*upper left*) containing seven interlocking components.

To cost-efficiently produce the road spike (*lower left*), Inventix developed a two-cavity Techmire mold with three-piece, vented pie sections to achieve sharp edges that would release air pressure in a controlled, short time frame. Previous die casters could not meet these design requirements.

To produce a totally flash-free, highly intricate key cylinder (*below*), Inventix added a 5th and 6th slide position to a 22NT Techmire tool with extremely tight-tolerance blade design and in-die degating. Not only were secondary operations eliminated, but the tool was designed with two cavities to achieve the customer's target piece-price.

dom



## < industries served >

Inventix creates solutions for an unlimited range of applications – from flawless chrome components for top-of-the-line motorcycles to complex, interlocking parts for sophisticated locking mechanisms – serving all major industries:

AUTOMOTIVE & RV

ELECTRICAL

ELECTRONICS

HOME & OFFICE FURNITURE

HOME HARDWARE

MEDICAL

MILITARY / DEFENSE /  
LAW ENFORCEMENT

PACKAGING & RETAIL DISPLAYS

TELECOMMUNICATIONS

AND MORE

ISO 9001:2000 certified facility  
Founded in 1988

# Push the limits of precision tooling



With a short lead time, Inventix developed a complex tool for this Class A Automotive plastic part (*above*). The tool incorporated lifters and a hot sprue and was ready for full production the first time out of the box.

For this highly complex steering column housing (*lower right*) with multiple features and stand-offs, Inventix created a two-cavity die (*lower left*) that featured complicated shut-offs, effective placement of gates and vents to maneuver around multiple slides, precise slide timing and sequencing, as well as clean ejection of the part to eliminate sticking and bending.

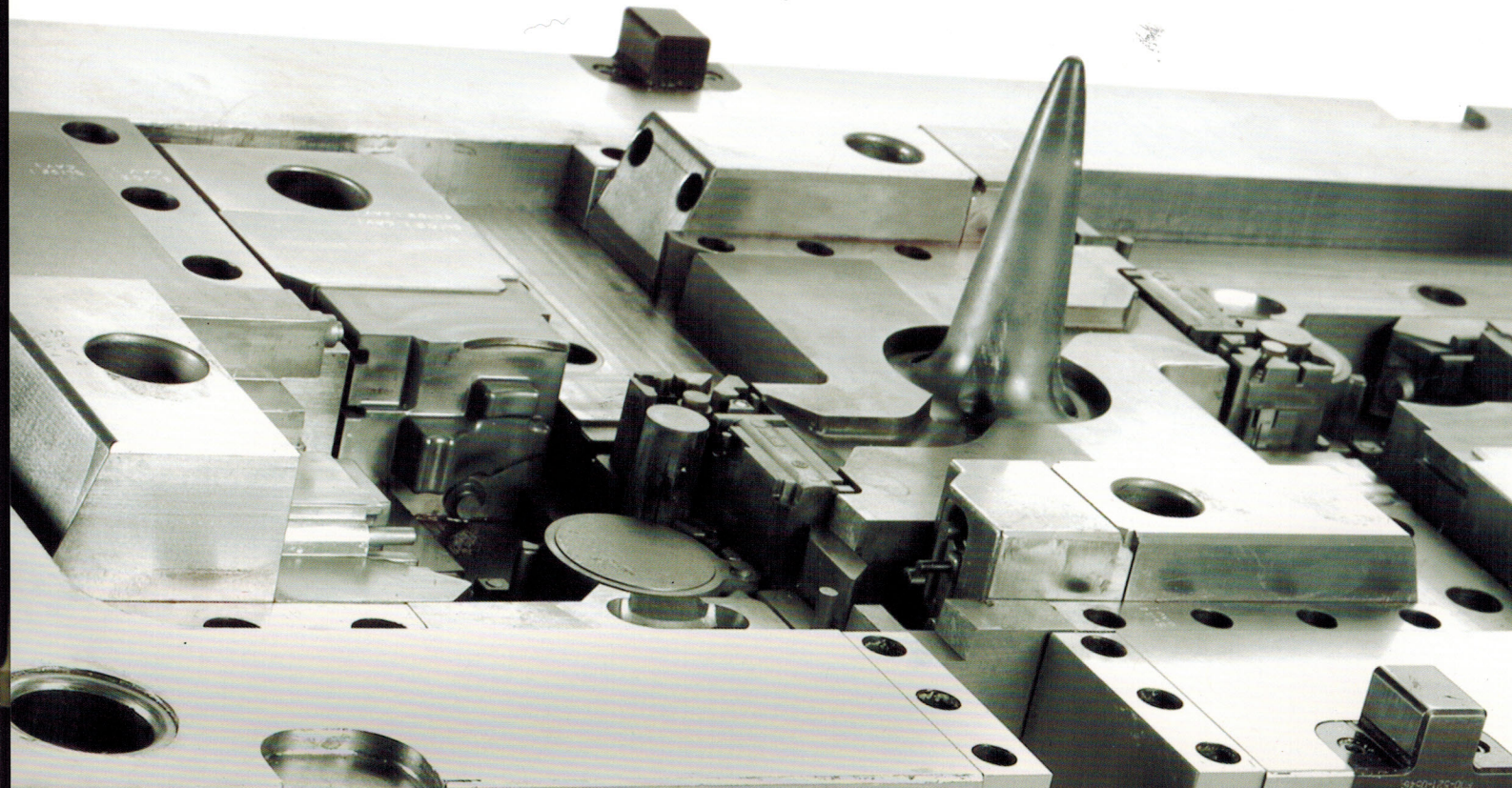
A manufactured component is only as good as its die. You have to start with exceptional tooling to produce extraordinary castings. Start with the design expertise of experienced engineers and tool makers at Inventix. Work with our tooling specialists to ensure the accuracy of your most complex products, including:

- plastic components
- zinc die castings
- aluminum die castings
- magnesium die castings

We push the industry limits, providing flash-free tooling with unprecedented precision. Offering the flexibility of single- and multi-cavity dies. And complete interchangeability of cavities for standardization and repeatability.

Our team respects your time constraints. Rapid production rates and "lights out" (24-hour) operation keep your project moving forward. So your tooling is always complete when you need it—even for short lead times.

**Go beyond the mold** and achieve the highest-quality tooling possible.



## < tooling solutions >

Inventix design engineers transcend standard tooling limitations to provide the impossible. Our comprehensive tooling solutions achieve:

**UNSURPASSED EFFICIENCY.** Maximize the number of units produced per shot with innovative, multi-cavity dies and minimize downtime with low-maintenance tooling.

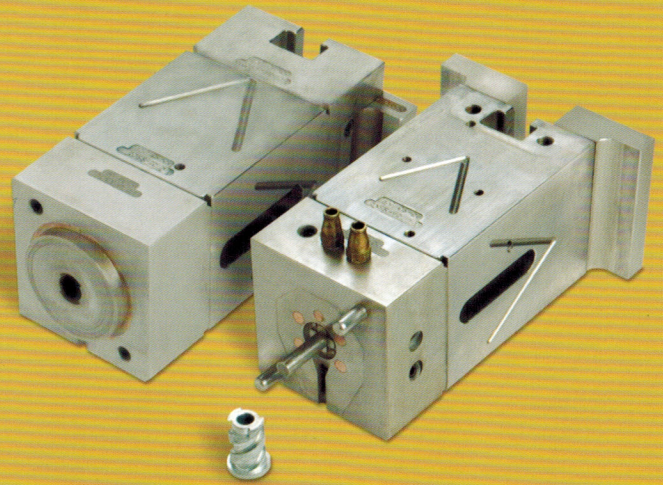
**EXCEPTIONAL ROI.** Eliminate costly secondary operations, such as trimming, drilling and machining, with flash-free tooling that's right the first time out of the box.

**UNRIVALLED TIME-TO-MARKET.** Reduce lead times for fast delivery.

**UNPARALLELED LONGEVITY.** Reduce re-tooling frequency with tools built from only the best certified tool steel grades.

**SUPERIOR COMPONENT INTEGRITY.** Ensure a balanced fill and optimal part density with sophisticated mold flow analysis software and techniques that determine the best gating, venting and overflow design and location.

high profiles



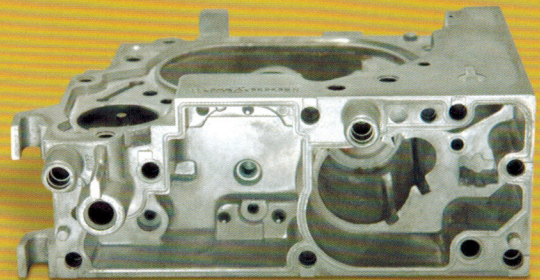
### STARTER ROPE RECOIL HELIX

Case Study: An engine and outboard motor manufacturer

*Meeting engineering requirements and tight budgets with zinc.*

**CHALLENGE:** The customer tried to use plastic for a complex helix design of a starter rope recoil component for one of their small engines, but could not get the part to pass quality control tests.

**SOLUTION:** The Inventix team of design engineers was able to develop a zinc die cast solution that would easily meet the design requirements as well as achieve a comparable piece-price. The 44NT Techmire tool featured precise internal movement and a unique unscrewing functionality to produce a net shape component.



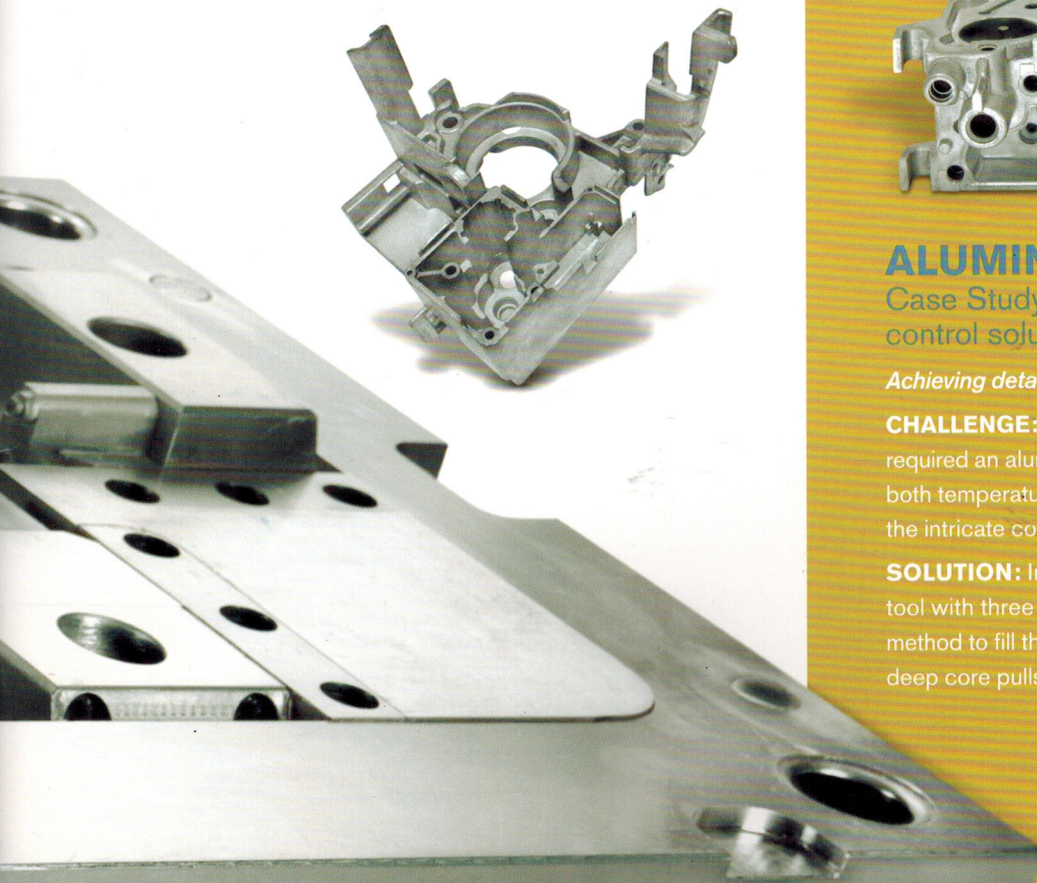
### ALUMINUM GAS VALVE

Case Study: A global automation and control solutions manufacturer

*Achieving detailed and deep features in an aluminum casting.*

**CHALLENGE:** The customer had a gas valve design that required an aluminum die cast tool with uncommon precision in both temperature control and material flow to accomplish all of the intricate cores and cavity detail.

**SOLUTION:** Inventix designed and developed a two-cavity tool with three slides per cavity using a vacuum-assisted method to fill the complex part. The tool successfully achieves deep core pulls with minimal draft.





# Achieve best-in-class manufacturing

« Hats off to the folks at Inventix!!  
Great job on a very difficult part.  
You have definitely separated  
yourself from the rest of the class  
as being a high-quality, precision  
die caster. Congratulations! »

*Dave Dziuda, Purchasing Manager  
Key Safety Systems, Inc.  
Shift Handle for Hummer H2 (below)*



You can't afford surprises during production. You need superior quality control. Consistency. On time and within budget.

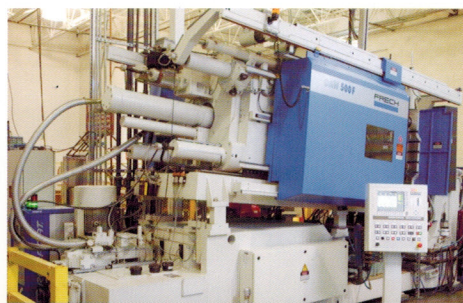
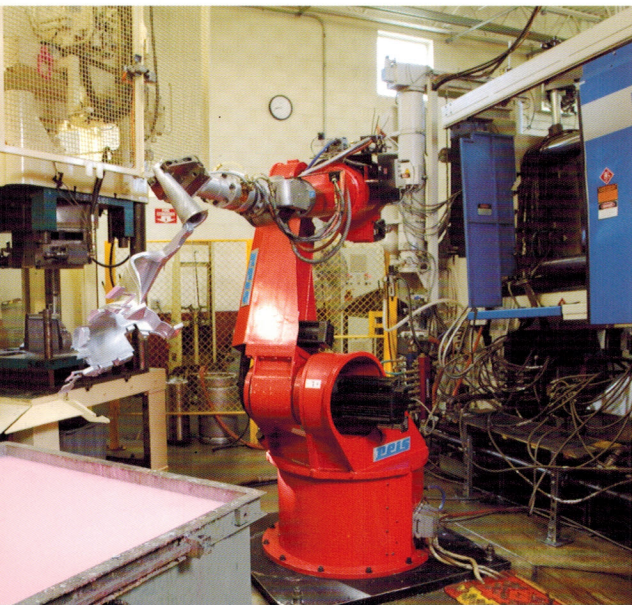
With Inventix, your final product meets the exact design specifications—no matter how demanding. High-pressure requirements or porosity-free parts. Achieve robust strength, rigidity, superior bearing properties and dimensional tolerances with unprecedented accuracy. We specialize in highly cosmetic castings and complex, difficult-to-fill components.

Get flash-free castings without the need for secondary machining, minimizing your per-piece costs. In any size from 0.002 ounces (1g) to 7 pounds (3.2 kg).

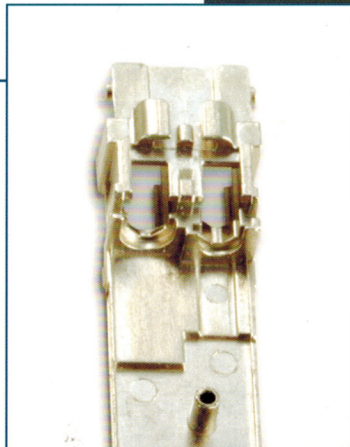
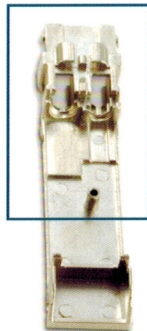
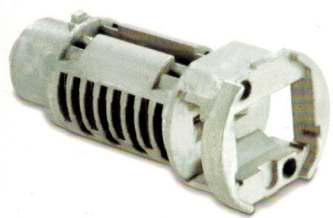
You set the scope of the project, and we'll make it happen. Short or long run. Low or high volume. Even short lead times. Inventix Manufacturing delivers with rapid production rates, thorough quality control processes and overall project management to ensure completion and accuracy.

**Go beyond the mold** and receive the best manufactured components possible.

Inventix offers state-of-the-art equipment with locking force up to 640 tons. We also have many types and sizes of modern Techmire machines (*left, above*) with fast injection speeds and cycle times to create intricate and detailed small components while keeping costs low. For larger castings, our conventional, real-time controlled Frech machines (*left, below*) each have full robotic cell technology (*far left*), including vision systems to monitor sequence operations.

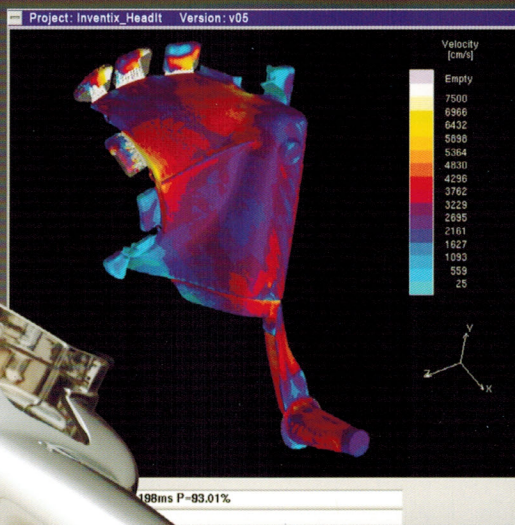


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Inventix manufactures tight-tolerance components from top-quality material grades of Zamak 3, Zamak 5 and ZA-8, serving a range of industries and applications (*from left to right*): Saddle Bag Latch and Directional Mount for Harley-Davidson, Automotive Door Lock/Latch Component, Small Engine Carburetor, Lock Cylinder and Fiber Optic Connector.

Inventix produced the nacelle headlight housing (*below*) for the Harley-Davidson Road King® with special attention to contoured shut-off, efficient gate design and excellent venting and overflow design. The new tooling, combined with up-front mold flow simulations (*insert, below*), eliminated piercing and drilling operations and significantly reduced the scrap rate compared to the prior supplier, giving the customer a far superior finished product.



**Contact Inventix Today.**

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**Precision Tooling & Die Casting**

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