PrintForm Releases New E-Book: Choosing the Right Manufacturing Process

A data-driven comparison of eight manufacturing processes using a single benchmark part

ATLANTA, GA, UNITED STATES, May 19, 2026 /EINPresswire.com/ -- PrintForm, a cloud manufacturing partner supporting custom plastic and metal part production, today announced the release of a new e-book, "Choosing the Right Manufacturing Process: One Benchmark Part. Eight Processes. Real Tradeoffs." The publication provides engineers and product development teams with an evidence-based framework for evaluating how different manufacturing processes perform against the same design, using a direct comparison across eight methods applied to a single part.

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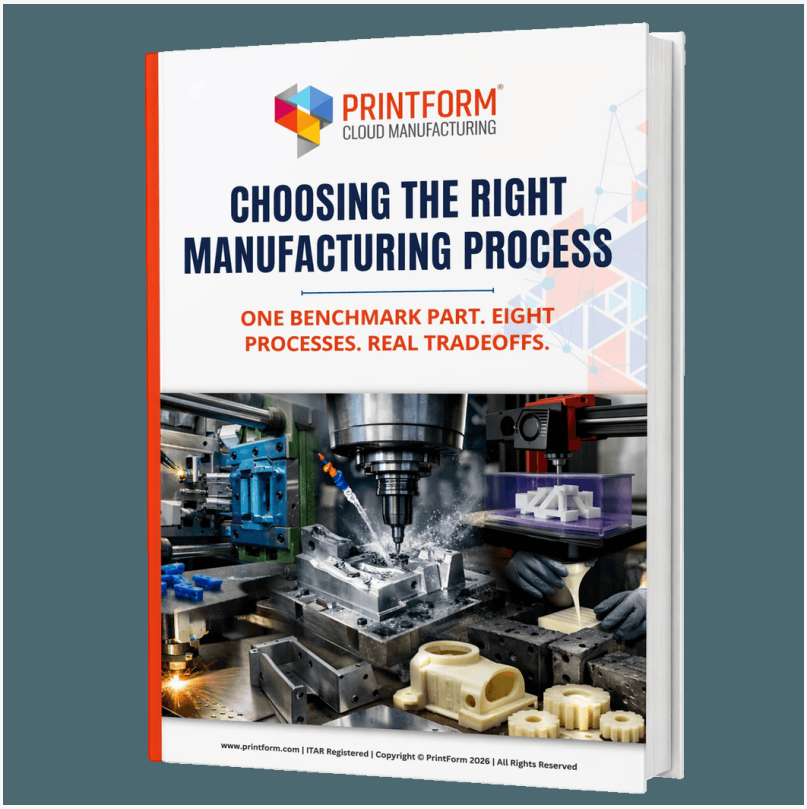
>
> *Ron Hollis, Chief Mentor at PrintForm*

In product development, manufacturing process selection is often treated as an afterthought, made after design is locked. The results are well documented: avoidable rework, tooling changes, schedule delays and cost overruns. PrintForm's new e-book addresses this directly by taking an experimental approach. One benchmark part, designed to stress-test key features, is evaluated across eight processes, with geometry held constant to compare differences in accuracy, surface quality, cost, lead time and tradeoffs.

"Engineers are often making process decisions based on familiarity rather than fit," said Ron Hollis, Chief Mentor at PrintForm. "This e-book is designed to change that by showing, with real data, what actually happens to the same part when you change only the process. The differences are significant, and understanding them before a design is finalized is the difference between a smooth program and an expensive recovery."

The e-book is organized into ten chapters, moving from foundational concepts to a practical decision framework. Early sections outline the role of process physics in product development and explain the benchmark methodology. Later chapters provide a detailed, process-by-process analysis, including tolerance capability, surface finish, cost structure, lead time and a feature-

level view of what each process can achieve, where redesign may be required and where secondary operations come into play.



A dedicated comparison chapter brings the results together side by side, examining dimensional accuracy across all eight processes, surface finish and cosmetic capability, cost-versus-volume curves from prototype quantities through higher-volume production, and lead time tradeoffs from first article to production runs. The e-book closes with a structured five-step framework designed to help teams identify the right process before quoting begins.

Among the key findings, no single process is cost-competitive across all volume ranges. Additive manufacturing and CNC machining remain the most accessible at very low volumes due to minimal tooling requirements. The benchmark part's tight tolerance bore, threaded interface and cosmetic surface also required secondary operations in most processes, with direct implications for how programs are scoped and quoted.

The e-book also explores the role of manufacturing partners in process selection, emphasizing the value of cross-process visibility, early design engagement and clear identification of constraints. It is intended for engineers, product managers, operations leaders and procurement professionals across industries including medical devices, aerospace, robotics, automotive, consumer products and industrial equipment.

The full e-book can be accessed here.

About PrintForm

PrintForm provides on-demand custom manufacturing for plastic and metal parts, combining CNC machining, injection molding, sheet metal and industrial 3D printing to support rapid prototyping through low- and high-volume production. As a single-source partner, PrintForm works with engineers, designers and procurement teams across industries including aerospace and defense, automotive, consumer products, energy, medical and oil and gas. The company delivers expert support from concept modeling to end-use parts, helping teams make informed decisions on speed, cost and performance. www.printform.com

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