

# RKS Guitars

Autodesk Manufacturing Solutions  
Customer Success Story

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*"We've been using Autodesk AliasStudio for over ten years. Without Autodesk, I don't know how we'd do it."*

Ravi Sawhney  
CEO and President  
RKS Guitars

## RKS Guitars Gives An Old Classic A New Twist

### RKS, Autodesk, and Rock 'n Roll

#### Project Summary

Revolutionizing a product that hasn't changed in over fifty years is a daunting, perhaps even next-to-impossible, challenge. But that's exactly what RKS Guitars LLC has done with the electric guitar. A five-year journey, taken by top designers using Autodesk® AliasStudio™ software, has culminated in an award-winning product line. These innovative, cutting-edge guitars and basses have everyone from product designers to musicians singing its praises.

Although new at the guitar making game, the RKS team were already successful veterans in the world of design. RKS Design, Sawhney's original company that spawned RKS Guitars, was established in 1980 and is an award-winning international design consultancy. As a result, they had the expertise and tools in place to venture confidently in this new direction.

#### A New Approach

*BusinessWeek* magazine featured a neon green RKS "Pop Series" guitar on the front cover of its July 2005 issue, in celebration of RKS Guitars' two Silver IDEA awards. "Electric guitars are continually redesigned and yet the form and

structure barely vary from guitars of the 1950s," reads the inside article. "RKS answered this dearth of design innovation by developing an open architecture design platform."

RKS Guitars utilize a "neck through body" construction, aluminum or wood ribs and moulded body shells. While there have been both hollow and solid body designs in the past, RKS models are the first-ever, open-ended hollow body electric guitars and basses. The open body structure allows body shells and ribs to be changed to suit anyone's preference for colour, materials, finish, shape, and even sound.

"It started as an in-house inspiration project about five years ago," says Ravi Sawhney, CEO and President of RKS Guitars. "We spent the first year in conceptualization and visualization and then another three in modeling, prototyping, testing, and refining." Autodesk AliasStudio played a major role in the development and refinement of the complex surfaces that give the guitars their cool new look. Sawhney admits there was a lot of discovery and learning along the way. "There is no design manual for making a guitar," he adds.



*“On a product like this, there are no flat surfaces. As a result, there are many design challenges and the advanced modeling capabilities of Autodesk AliasStudio play a major role in solving them.”*

Ravi Sawhney  
CEO and President  
RKS Guitars

Surface modeling is a key component of achieving the look, the feel, and the sound of an RKS guitar. As in automotive design, form and surface development rely on advanced visualization.

### **The Challenge** **Balancing Look, Ergonomics, and Tone**

When asked specifically about the design process and how the guitars evolve from initial sketches to finished products, Sawhney talks about three main design challenges.

“We not only wanted to create a breakthrough look, but we also had to focus on ergonomics and tone,” says Sawhney. “The tools we use are very important in ensuring these three areas are perfected and then ultimately transcended,” tools like Autodesk AliasStudio software.

### **The Solution** **An Integrated Design Process**

RKS Design and RKS Guitars utilize the software from sketch to surface model as well as for marketing materials. The original brochure was created using Autodesk AliasStudio renderings before it was possible to do product photography.

Just as seasoned musicians don't focus on each individual note they're playing, Sawhney and his designers often go about their work without attuning to the underlying processes, alternating between Autodesk AliasStudio for surface development and MCAD software for engineering. “We actually rarely think about Autodesk AliasStudio because it is so laced into the process,” says Sawhney.

### **Reality Check**

With a revolutionary product like this, moving from concept to reality poses another major challenge. “With sketching it's so easy to have false perceptions about scale, proportion, and dimension,” adds Sawhney. “Autodesk AliasStudio ensures we move successfully from the creative sketching phase to the reality phase. If you're not modeling around real components and dimensions, your design will fall apart.”

Fortunately, RKS Guitars has a fail-safe method for ensuring the designs meet the demands of reality. Co-founder guitarist Dave Mason, a Rock 'n' Roll Hall of Fame inductee, has input every step of the way. For the three-year prototyping and testing phase, Mason's feedback was essential. It wasn't until he was satisfied with the products that RKS Guitars was ready to release them to the public.

### **The Result** **Back to Business**

Added to all this hard work and pressure of creating an ingenious design is the fact that RKS Guitars is a business with all the regular financial concerns. Mundane concepts like the bottom line and adages like 'time is money' are never far from Sawhney's mind. When asked about such concerns, he once again credits the design process and tools like Autodesk AliasStudio for helping keep costs down.

“It's all about speed, from renderings to physical object,” says Sawhney. “Autodesk AliasStudio lets us do thirty iterations, where other products may do three, allowing us to refine and perfect in much less time.” Sawhney is a firm believer in the value of incorporating feedback into the design. “There is a direct link between the number of iterations and the success of the product,” he states.

### **Encore**

RKS Guitars should know a thing or two about success. With two IDEA awards already in hand and incredible publicity that shows no sign of stopping, the future of this young company looks very bright. Projects include developing a sub-\$1,000 guitar, tackling the acoustic arena, creating a way of learning the guitar in a quarter of the time, and branching out internationally. You could say they're looking forward to rocking and rolling with the punches.