

# Complexity Simplified

In today's world, comfort is one of the primary attributes one looks for while buying a car. The most important device in a car to ensure a smooth ride is the shock absorber. Hydraulic shock absorbers are generally more comfortable than mechanical shock absorbers. In this issue, we introduce you to one of the most important parts of a hydraulic shock absorber.

## Manufacturing Challenge

- Earlier method – Machining
- Reason for change
  - High lead time
  - Low repeatability

## Solution

- The customer analyzed various manufacturing methods and finally decided that MIM was the most suitable manufacturing method for this component



Top Plate For Shock Absorber



## Engineering Challenge

- High level of complexity
  - Fifteen holes & six thin ribs
  - Very tight tolerance requirements
  - Surface finish of 30 microns R<sub>a</sub> at the bottom

## Solution

- Special gating & venting system
  - Ensured complete filling of the mold
- Fully finished part
  - MIM + Post MIM turning

## Newsletter Spotlight

*The parts won the “MPIF Award of Distinction” in the “Automotive” category*

*Indo-MIM created estimated cost savings of 25% over the previous manufacturing methods*

*Indo-MIM delivers twenty four thousand pieces annually to the customer*

*Circular cooling was provided to the tool for uniform cooling and to prevent formation of voids & cracks*

*Material used was MIM 4605 low alloy steel with hardness of 42-48 HRC*

## Indo-MIM Receiving MPIF Award For The Component



MPIF President Richard Pffingstler presented the award to Indo-MIM Vice President Mr. Jagdish Holla & Territory Manager Mr. Rajesh at San Diego, California

## Indo-MIM Advantages

Indo-MIM reduced the manufacturing cost of the component by 25% over the previous method. No industrial pollutants were released during the manufacturing process. Indo-MIM's specialty lies in manufacturing highly complex parts. Mechanical properties of parts produced through MIM is superior to castings & powder metallurgy (reflecting fine particle size & high sintered density). Parts made through MIM are near net shape.

### Wide range of alloys available:

- \* Case Hardened Steels
- \* Hardened & Tempered Steels
- \* Stainless Steels
- \* Tool Steels
- \* Magnetic Materials
- \* Tungsten Heavy Alloys
- \* Titanium & Titanium Alloys

Visit us at <http://www.indo-mim.com/>

Questions or comments - Write to us at [innovation@indo-mim.com](mailto:innovation@indo-mim.com) or call at +91 80 2204 8800/2797 1419

