



INDO-MIM<sup>®</sup>  
COMPLEXITY SIMPLIFIED

## CASE STUDIES



# CASE STUDY – CONNECTORS



## APPLICATION – ELECTRIC CONNECTOR ASSEMBLY



Male Fool-Proof Device and Female Polarizer

- Cost benefit of 15% after migrating to MIM.
- Both parts are fabricated to net shape
- All dimensions achieved in the As-MIM condition; this includes the threads, which are formed through auto unwinding in the tooling

## SOLUTION

## PRODUCT DESCRIPTION

- Material :- MIM 4340 (Low-Alloy Steel)
- Weight :- 7 grams
- Segment :- Consumer
- Annual Requirement :- 150K



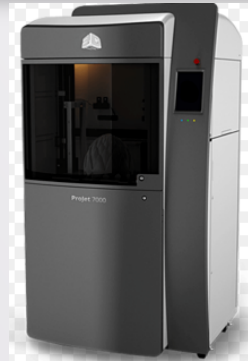
- Components were earlier manufactured through Machining process
- Half end rib section & repeatability
- High machining Cost
- Difficult to produce components in high volumes

## CUSTOMER PAIN POINTS

# CASE STUDY – GEAR 3D PRINTERS



## APPLICATION – 3D PRINTERS



## PRODUCT DESCRIPTION

- Material :- MIM 17-4PH
- Weight :- 7gm
- Segment :- Consumer



- Spur Gear of 0.1mm taper achieved with ease
- High volumes achieved through multi cavity tools

- Tapered gear Profile
- High volumes

## SOLUTION

## CUSTOMER PAIN POINTS

# CASE STUDY – FUEL PUMP ACTUATION



## APPLICATION – FUEL ACTUATION



- Entire profile manufactured through MIM.
- Large batch production with auto rewinding mechanism for thread in tool.

## SOLUTION

## PRODUCT DESCRIPTION

- Material :- MIM 4605 (Medium Carbon Steel)
- Weight :- 9gm
- Segment :- Automotive
- Annual Requirement :- 3600K



- 6 separate machining operations for every part.
- Problem faced in repeatability and burr formation.
- High machining cost.

## CUSTOMER PAIN POINTS

# CASE STUDY – HYDRAULIC PROPORTION VALVES



## APPLICATION – HYDRAULIC PROPORTION VALVES



- Integrated parts without joining operations
- Compact parts with reduction in weight

## SOLUTION

## PRODUCT DESCRIPTION

- Material :- SS 17-4PH and MIM 4605 (medium carbon steel) with heat treatment
- Weight :- 26gm to 32gm
- Segment :- Automotive
- Annual Requirement :- 360K



- Multiple manufacturing operations
- Joining operations for assembly

## CUSTOMER PAIN POINTS



# MORE THAN 3000 HEARTS – ONE BEAT

Creating Value :

In-depth technical competence

International presence

Application and Industry Expertise

Long-term Relationships

# THANK YOU

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