

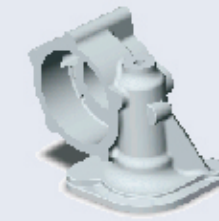


INNOVATION

### Helmet Project

<p>FIG. 1 This point cloud data was generated from clay model using CMM.</p>	<p>FIG. 2</p>	<p>FIG. 3 HELMET SHELL GENERATED FROM CURVES</p>	<p>FIG. 4 CHIN STRAP</p>
<p>FIG. 5 VENT COVER</p>	<p>FIG. 6 VISOR ROTOR</p>	<p>FIG. 7 VISOR SLIDER</p>	<p>FIG. 8 VISOR SCREEN</p>
<p>FIG. 9 VENT</p>	<p>FIG. 10 HELMET ASSEMBLY</p>	<ul style="list-style-type: none"> <li>• Reverse Engineering</li> <li>• Point Cloud Data Extraction</li> <li>• Surface Modeling</li> <li>• Product Styling</li> <li>• Part Machining by Machining Centre</li> </ul>	

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Estb... : 1998



# Chaitanya Graphics

## Applications

- Automobile
- Electrical & Electronics
- Medical Equipments
- Fast Moving Consumer Goods
- Other need based industries

## Installed Capacity

750 man-hour per week

## Major Customers

Hindustan Aeronautics Limited	Icarus Designs
National Aerospace Laboratories	Lincoln Helios
VST Tillers & Tractors Ltd.	IFB
GE Power Controls	Hindustan Office Products Ltd.
Tehran Padana	Southern Railways
Ganga Micro Electronics	Kirloskar Systems
X-Tra Reinforced Plastics Pvt Ltd.	TVS Motors
Mahindra & Mahindra	Ashok Leyland India Ltd.
Titan	Seimens VDO

## Infrastructure

### Design Centre

Design centre is located in Bangalore.

### Manpower

Chaitanya Graphics employs 17 Technical Manpower for Product Design & Development.

### Software

#### CAD Packages

Pro-Engineer 2001, Wildfire	SolidWorks
Catia V5	Solidedge
Autodesk Inventor Series	Unigraphics NX

## PRODUCTS AND SERVICES

- Product Design
- Press Tool Design
- Injection Mold Design
- Legacy CAD Conversion
- Finite Element Analysis
- Reverse Engineering
- Jig & Fixture Design
- Engg. Consultancy
- Solid Modelling



## Technology Export Development Organisation

Plot No. 249 F, Sector 18, Udyog Vihar, Phase-IV

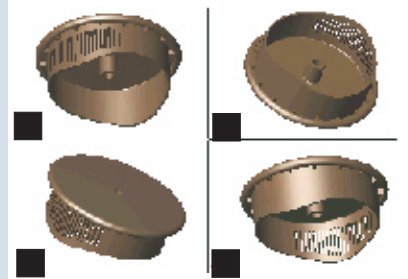
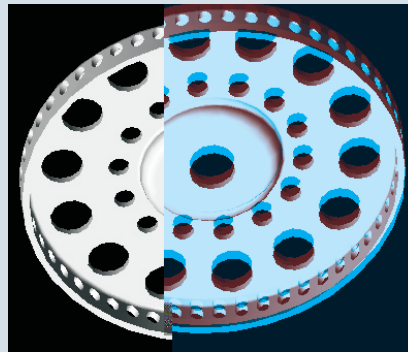
**Gurgaon 122015 (Haryana)**

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#### CAM Packages

Master CAM	UG CAM
Pro-Manufacturing	

#### FEA Package

Ansys	Nastran
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#### Tool Design

2D drafting	Raster to Vector
3D Modeling	2D to 3D
Product Design	Legacy Data Conversion
CAD Conversions	Part Catalog
Scanning	Library Creationl

#### Hardware

- Latest Pentium Work Stations.
- Data backup facilities on CD Writer & Tape Storage Drives (DAT 40)
- Broadband Communication facilities with Video Conferencing
- A4 A0 Size Scanning, Plotting, Ammonia Printing & Photo-copying facilities

#### Financial

##### Turnover

Year	Turnover (USD)
2002-2003	34,920
2003-2004	59,821

#### Consultancy

Injection Mold Design in 3D & 2D for Ope-cover, Ope-pannel.

#### Technology Arrangement

- Joint Venture
- Technical Cooperation
- Marketing

#### Possible Export Potential

- United States of America
- Europe
- Asian Countries

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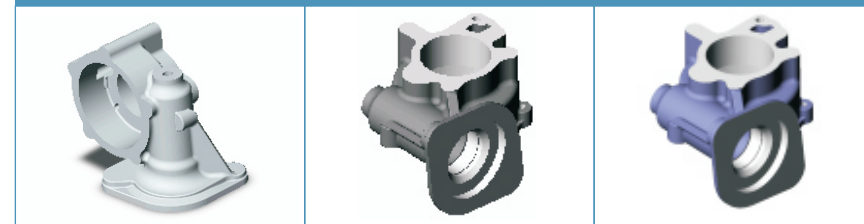
#### CASE STUDIES

##### Blood Donation Couch



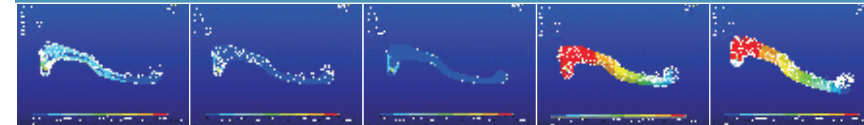
Engineered 3D models in Solidworks with all details including interference checks, weight optimization & fastening details, material selection & manufacturing process selection and suggestions. All relevant detailed part drawings including Tolerances, assembly & subassembly drawings, bill of materials were provided.

##### Casting



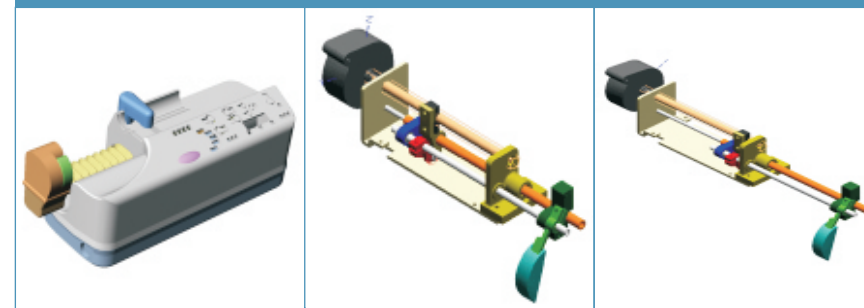
Reverse Engineering of the casting using CMM digitizing, Extraction of point cloud data, Parting line creation and design of Die Casting Die. Created 3D models & detailed drawings for manufacturing purposes.

##### Lever



The Product is a brake & Clutch lever for a two wheeler. The present Aluminum alloy cast part had to be replaced by a suitable plastic part with similar mechanical properties and appreciable cost savings. Optimized CAD Model. Iterate Finite Element Analysis for confirmation of strength and other mechanical properties.

##### Syringe Pump



The product is a syringe actuator used for injecting intravenous fluids at extremely slow rates ranging upto 1 ml per hour. Developed the mechanism, interference checks, 3D models, detailed drawings. & analysis report.

