ENGINEERS MAKES THE WORLD
PRACTICAL TRAINING

at

GABRIEL INDIA LTD., GURGAON.
Gabriel India Limited, a leading name in the Indian auto component industry, manufactures Ride Control Products and Engine Bearings.

Established in 1961 in Mumbai for the manufacture of shock absorbers.

Gabriel is the market leader for Ride Control Products in India.

It is the flagship company of the USD 488 million Anand Automotive Systems - a leading manufacturer and supplier of the widest range of automotive components and systems in India. Gabriel India, with a turnover of over USD 106 million is a major supplier to all segments of the market - OE, Aftermarket and Exports. The Company is in collaboration with ArvinMeritor Inc. and Federal-Mogul of USA.

Gabriel India has nine plants located across six states of the country and was the first Company in India to be accredited with ISO 9002 Certification as far back as 1993 for shock absorbers, struts and front forks. Today, almost all facilities of the company have ISO 9002 / 9001 / 14001, QS 9000, OHSAS 18001 and ISO / TS 16949 certifications.
<table>
<thead>
<tr>
<th>CERTIFICATION</th>
<th>ISO 9002</th>
<th>Nashik, Hosur, Noida</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ISO 9001</td>
<td>Mulund</td>
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<td></td>
<td>ISO 14001</td>
<td>Hosur, Dewas, Pune</td>
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<td></td>
<td>QS 9000</td>
<td>Noida, Hosur, Dewas, Nashik</td>
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<td></td>
<td>ISO/TS 16949</td>
<td>Hosur, Pune, Dewas</td>
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<td>OHSAS 18001</td>
<td>Hosur, Dewas, Pune</td>
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</tbody>
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- Gabriel - Gurgaon
- Gabriel - Pune
- Gabriel - Nashik
- Gabriel - Dewas
- Gabriel - Hosur
- Gabriel - Noida
GABRIEL INDIA LTD.
MANUFACTURES:

1. RIDE CONTROL PRODUCTS
2. ENGINE BEARINGS
# OE Customers

## Cars and Utility Vehicles

<table>
<thead>
<tr>
<th>Mahindra &amp; Mahindra,</th>
<th>Suzuki</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiat,</td>
<td>Hyundai</td>
</tr>
<tr>
<td>Hindustan Motors,</td>
<td>Ford</td>
</tr>
<tr>
<td>Toyota,</td>
<td>Mitsubishi</td>
</tr>
<tr>
<td>Bajaj Tempo,</td>
<td>Tata</td>
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</tbody>
</table>

## 2-3 Wheelers

<table>
<thead>
<tr>
<th>LML (Scooters),</th>
<th>Yamaha (Motorcycles)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bajaj (Scooters &amp; Motorcycles),</td>
<td>Kinetic Motors</td>
</tr>
<tr>
<td>TVS (Scooters &amp; Motorcycles),</td>
<td>Kinetic Engineering (Motorcycles)</td>
</tr>
<tr>
<td>Honda Motor Cycles &amp; Scooters India,</td>
<td>Enfield (Motorcycles)</td>
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</tbody>
</table>

## LCVs / HCVs

<table>
<thead>
<tr>
<th>Mahindra &amp; Mahindra</th>
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</thead>
<tbody>
<tr>
<td>Eicher Motors</td>
</tr>
<tr>
<td>Swaraj Mazda</td>
</tr>
<tr>
<td>Telco</td>
</tr>
<tr>
<td>Bajaj Tempo</td>
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<tr>
<td>Ashok Leyland</td>
</tr>
<tr>
<td>Hindustan Motors</td>
</tr>
</tbody>
</table>
OE Customers:

**Thin-wall Bearings**
- Telco
- Hindustan Motors
- Mahindra & Mahindra

**Utility Vehicles**
- Telco
- Hindustan Motors
- Mahindra & Mahindra

**Tractors**
- Escorts
- HMT
- Mahindra & Mahindra
- New Holland
- Sonalika International

**LCVs / HCVs**
- Tata Cummins

**Tata**
- Cummins
- Telco
- Eicher Motors
- Force Motors
- Ashok Leyland

**Engineering Sector and Others**
- Cummins India
- Carrier Aircon
- Sona Koyo Systems
- Eicher Demm
- Clutch Auto
- Atlas Gears
- Dhanu Metals
- PTL

**Large Size Bearings**

**Industries / Marine**
- Diesel Loco Works (Alco 251)
- Garden Reach - Navy (KV Series)
- Rai Prexim - (Skoda A&B)
- Cummins India Ltd. – (P Series)
Thin Wall Bearings
- North America
- South America
- United Kingdom
- Sri Lanka

Large Size Bearings
- North America
- Singapore
- United Kingdom
- Middle East
- Europe
PROJECT

( Cost Reduction Solution )

KNUCKLE HEATING PROJECT
PROJECT:

1. Process WITH HEAT TREATMENT

2. Process WITHOUT HEAT TREATMENT
ABSTRACT

We Choose the process “WITHOUT HEAT TREATMENT” for TUBE FITTING IN KNUCKLE as it eliminates many side effects of heating process steps, which are very important role players in increasing the useless spending & time, labour, environmental & safety losses.
INTRODUCTION

SUBJECT:

This report describes the various saving aspects which will rise after elimination of heating process for knuckle Tube Fitting.

WHY?

Elimination of this process will help in saving different subjects like MONEY, ELECTRIC ENERGY, CYCLE TIME, LABOUR, SPACE, PRODUCTIVITY, ENVIRONMENT, SAFETY, MAINTENANCE TIME, DOWN TIME etc.

HOW!

For shock absorber manufacturing, we need a step of tube fitting in the Knuckle. For this purpose, we heat the internal diameter of the knuckle. Due to this heating, the internal diameter of the knuckle got expending a little bit and the tube fits in it easily. After the cooling, the knuckle gets its original diameter & the tube got fixed in it.

But now we are trying to eliminate this heating process & the tube will be fixed in the knuckle only by press machine after decreasing the external diameter of the tube in hundreds of micron.
But now we are trying to eliminate this heating process & the tube will be fixed in the knuckle **only by the press machine after decreasing the external diameter of the tube in hundred of microns.**

**This will not require the previous heating process.**
For **heating process**, we need:

**HEATING MACHINE, ELECTRIC ENERGY, MACHINE OPERATOR, CYCLE TIME, FLOOR AREA, EXHAUST SYSTEM, MAINTENANCE OF MACHINE & EXHAUST SYSTEM, COOLING PROCESS** etc.

They need much **MONEY & TIME**. We cannot sacrifice with these two terms **At Any Cost**.

We want to replace this process with the never one, which will give same results in **LESSER RESOURCES & IMPROVED QUALITY**.
Non Heating Process eliminates:

> ENERGY, TIME, SAFETY, COST NEEDS etc, which required during the heating process

*It shows the NON HEATING PROCESS is BETTER than the HEATING PROCESS in many order & will help in increasing the Savings, Productivity, Quality etc.*
DISCUSSION

Discussion includes:

- COST
- PRODUCTIVITY
- SPACE
- WORKING ENVIRONMENT
- QUALITY
- SAFETY
- VALIDATION
RESULTS

With the help of non heating process pure saving amount of RS. 2,70,270 per annum.

We also find better productivity from this process.

This process eliminated the accidents or misshapenness.
VALIDATION

The non heating process is following by “MUNJAL SHOWA”, which provides STRUTS for MARUTI.

This process is approved by MARUTI.

This validation confirms our try and we should start moving ahead on this way immediately.
THANK YOU.

Any Queries?