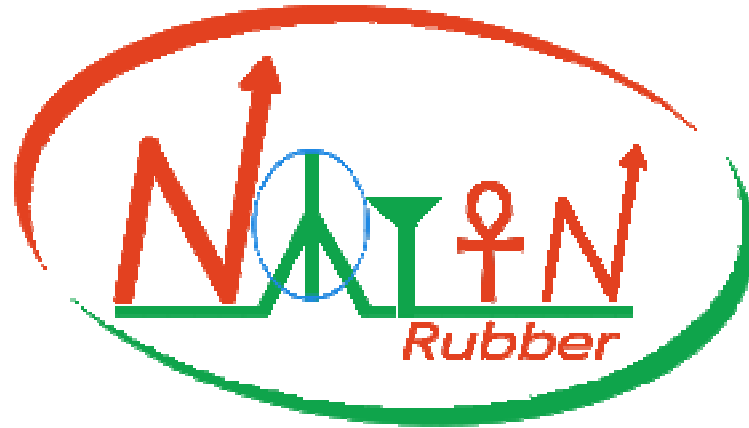


# A brief introduction to: **NALIN RUBBER PRIVATE LIMITED**

CALL US FOR VAST RANGE OF RUBBER & METAL PRODUCTS & SERVICES



**Works Address:** B-10 & B-4, 6<sup>TH</sup> PHASE, ADITYAPUR INDUSTRIAL AREA,  
GAMHARIA, JAMSHEDPUR – 831013 JHARKHAND, INDIA.

**Correspondence Address:**

29, Road No:4, Circuit House Area (Old), Bistupur, Jamshedpur 831001. India

**Contact Phone:** 91-657- 2200220, 2200221

Fax: 91-657-2200220

**Email:** [sales@nalinrubber.net](mailto:sales@nalinrubber.net) **Website:** [www.nalinrubber.net](http://www.nalinrubber.net)  
[nalinrubber@hotmail.com](mailto:nalinrubber@hotmail.com)



Brand Name: **NILU**

Company PROFILE 2015-2016

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**Serving Customers  
For 27 Years +.....**



## **NALIN RUBBER PRIVATE LIMITED: Management**

Nalin Rubber Private Limited is successful Professionally managed Private Limited Company. It was promoted by founder chairman Mr. R.K. Sinha, a successful and popular Rubber technologist in 1988 and share holding has been totally spread in his immediate family. Ever since its inception this technology driven company has handled specialized tailor made polymer (specially rubber) products used in various applications. The present team has able Rubber Technologists, Mechanical Engineers, Sheet Metal, Polymer, Bend Tube, Plastic & Rubber Experts, Product Development managers, Quality experts, Design engineer, Production experts, financial analysts and many more professionals. Company is involved in diversified product range and customers from low volume to high volume requirements and thus enjoys good respect from various Indian Customers spread over various types of Industry. NRPL Team is proud for its Ethical and Trustworthy behaviour which makes it one of the fastest growing Company in Rubber Product field in its region.

### **What is NRPL involved in?**

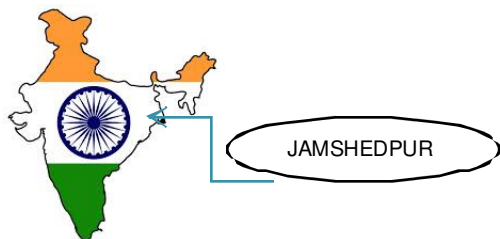
Nalin Rubber Private Limited is a Reliable & Quality Conscious company engaged in

- Design & Development,**
- Production,**
- Testing,**
- Sales and Service**

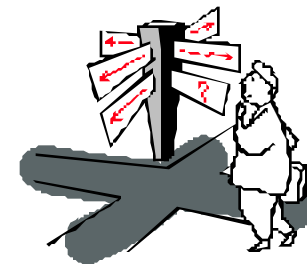
- of Rubber Moulded, Extruded and Composite (Metal Bonded, Plastic bonded, Textile / Fabric reinforced etc.)
  - of sheet Metal (Stamping) and Fabrication (Welded products)
  - of bend Rod and Tubes (CNC multiple bend) assemblies with Crimped Hoses & Fittings etc.
  - of Fiber Reinforced Plastic (FRP) and Vacuum formed Plastic Parts (Through Sister Concern ARP)
  - of Machined Metal Assembly spares (especially Hose & Pneumatic lines) (Through Sister Concern Rinbi)
- Products & Assemblies of various kinds for various industries.



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# Location:



Nalin Rubber Private Limited is a Dynamic Rubber & Metal Industry situated on Industrial Plot Nos: B10, B4 & NS2(P), Adityapur Industrial Area at Gamharia in city **Jamshedpur**, State Jharkhand in INDIA.

**Global Position (GPS): Main Gate, Nalin Rubber: N 22° 48' 14.3" E 086° 07' 05.1"**

## How To Reach Us?

Nearest Airport: Jamshedpur **IXW** (7 Kms.), Ranchi **IXR** (124 Kms)

Nearest International Airport: Kolkata **CCU**, India (302 Kms)

Nearest Railway Station: Gamharia **GMH** (4 Km), TataNagar **TATA** (11 Km)

Nearest Sea Port: Haldia (283 Km), Pradip Port (387 Km)

Nearest Dry Export Port: Jamshedpur (9 Kms)

Contact NRPL At:

Website: **www.nalinrubber.net**

Email: **sales@nalinrubber.net** **director@nalinrubber.net**  
**nalinrubber@hotmail.com**

Phone: 91-657-2200220 / 2200221 / 2224612

Fax: 91-657-2200220



## VISION of Nalin Rubber

Nalin Rubber has vision to be a global player with prominence in national arena in the area of customized Sheet Metal, Metal Bonded, Rubber / Composite Moulded, Extruded and Calendared Products & Assemblies.

## QUALITY THEME OF NALIN GROUP

Nalin Group of industries is committed to Design, Development, Production, Testing, Sales and Service of Quality Polymer & Metal Products for its utmost customer satisfaction through **consistency in products** provided at **competitive rates** with timely & **prompt delivery** and **continuous improvement**. The company shall strive to maximize customer satisfaction through enhanced **Reliability in Product**, focused Team Work and improvisation in customer relationship.

## NALIN GROUP of Companies:

- **Nalin Rubber Private Limited**
- Rinbi Auto Engineering Private Limited
- Auto Rubber & Plastic Manufacturing Company
- Jigyasa Consultants LLP





## VALUED CUSTOMERS:

NRPL is thankful to its committed customers who have always trusted with confidence in our products and our abilities to produce them. List of Prominent customers whom the company ever served, includes:

**Automotive Industry:** Tata Motors Limited, AMW Motors Ltd, Tata Toyo Radiators Ltd, TML Drivelines Ltd (HVTL/HVAL Earlier), RSB Transmission (I) Ltd., Singhbhum Machinometal, Jost India Autocomponent Private Limited, Alkraft Thermotechnologies (P) Ltd, Caparo (I) Ltd, Banco Products (I) Ltd, Demm Auto Engg Works, Motherson Sumi Systems Ltd, Chassis Bodybuilding companies .

**Railways:** Indian Railways (All Zones: Northern Railway, Eastern Railway, Western Railway, Southern Railway, East Central Railway, North Western Railway, North Eastern Railway, Central Railway, East Coast Railway, South Western Railway, South Eastern Railway, South Central Railway, North East Frontier Railway, South East Central Railway, West Central Railway etc.), Integral Coach Factory (ICF), Railway Coach Factory (RCF), BEML, Coach & Wagon Builders like HEI, BESCO Limited etc. and Coupler Manufacturers.

**Construction Equipment Industry:** Tata Hitachi Construction Equipment Co., Bharat Earth Movers Ltd (BEML)

**Defense:** DMSRDE (DRDO), Program AD (PGAD), DGQA registered

**Mining Industry:** Various Mines in and around Jamshedpur in Jharkhand, Chhattisgarh, Odisha & West Bengal. Also Rubber sheets and some moulded products for mining equipments such as for Thejo Engg.

**Steel Industry:** TATA Steel Limited & its subsidiary Companies , Jindal Saw Limited etc.

**Aircraft Industry:** Hindustan Aeronautics Limited (HAL), Indian Air Force

**Equipment Industry:** Tata Growth Shop, Usha Telehoist Limited, Tata Growth Shop (TGS), Various Subsidiaries & Ancillaries of Tata Motors, Tata Steel and Railways Etc.

**Other Industries:** Uncommon Rubber & allied Products used for industrial consumable & maintenance items.

**Consumer Market:** NRPL is entering to Consumer market with LPG Hose for domestic purpose.

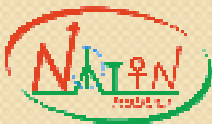
**Infrastructure Industry:** NRPL produces Tyton Gasket for Sewer, gas and water pipes. Rubber sheets for Roof etc.

### VENDOR CODES of Major Customers:

Tata Motors Limited:	N05050
Indian Railways (RDSO):	336
Tata Steel Limited:	N214
DRDO, Defense:	DMSRDE_013/01C/61_L
TACO group:	N05050
TSL Mines:	N214
Tata Hitachi Construction:	N05050
BEML:	N201
DGQA Reg:	DGQA/CW/Nalin/1
Jindal Saw Limited:	JSL/6478
BESCO Limited	N365
Tata AGRICO	N214



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## Standards and Specifications Followed:

NRPL follows the standards and specifications provided by the customer as priority. We also follow:

- ASTM standards (American),
- I S Standards (Indian),
- JIS standards (Japanese),
- DIN Standards (German),
- British Standards (British)
- RDSO standards (Indian Railways)
- AAR (Association of American Railroads) Specs.
- SAE Standards (Society of Automotive Engineers)
- TS (Tata Standards of Tata Motors Limited)

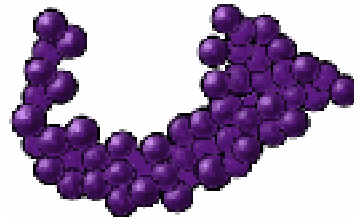
A documented work procedure for Design, Development, Production, Testing, Service and various working parameters have been compiled, certified and audited under system certification.



## Major Rubber Polymers Used:

NRPL is a leading manufacturer of all kinds of rubber Moulded and extruded goods presently capable of producing products of the following polymers and their blends:

- Natural Rubber,
- Nitrile (NBR, HNBR, XNBR)
- Chloroprene (Neoprene)
- EPDM & EPR
- Silicone (MQ)
- Butadiene Rubber (BR)
- Styrene Butadiene Rubber (SBR)
- Butyl & Halo Butyl (IIR, BIIR, CIIR)
- Fluorocarbon Rubber (Viton etc.)
- Fluorosilicone Rubber (FQ)
- Chlorosulphonated Rubber (Hypalon),
- Chloro Poly Ethelene Rubber (CPE)
- Polyurethane (Millable Grades) (AU, EU)
- Poly Acrylic Rubber (ACM)
- Vinyl Acetate Rubber (Vamac)
- Epichlorohydrin Rubber (ECO)
- Polyphosphazene Rubber (PZ, FZ)
- Thermoplastic Elastomers (TPE)  
(Like Santoprene, PVC-Nitrile etc.)
- Recycled / Reclaim Rubber
- And specialty polymers



## Major Plastic / Coat Polymers Used:

- Polyethylene (PE) – HDPE & LDPE
- Poly Vinyl Chloride (PVC)
- Poly Urethane (PU)
- Poly Acetate (PA)
- Blends of PE, PVC (HAPA)
- Nylon



## Major Fabrics Used:

- Aramid (Nomex & Kevlar)
- Rayon
- HDPE (D)
- UHMWPE (Dyneon / Spectra)
- Cotton
- Polyester
- Nylon
- Blended Fabrics



# Product Divisions:

**Nalin** has diversified into various Product segments. Some of the major areas catered by NRPL are:

## **Rubber / Plastic: Polymer Division**

- Rubber Moulded Articles
- Polymer Extruded Articles
- Polymer Calendared Articles
- Polymer Composites
- Compressed Plastic / Fabric composites
- Polymer Coated (Plastic / HAPA Coated) & Rubberized Articles.
- Vacuum Forming Plastic Parts, FRP- Fibre Reinforced Parts (Sister Concern Supported)

## **Stamping Sheet Metal Division**

- Sheet Metal Stamping Parts
- Sheet Metal assembled Parts
- Sheet Metal with Machining Parts

## **CNC Tube Bending & Assemblies Division**

- Metal Bend Tube Parts
- Bend Tube Assemblies with Crimped Hoses etc.
- Non Ferrous Bend Tube Assemblies such as Copper / Aluminium Tube Parts

## **Welded & Machined Parts & Assemblies Division**

- Machining Parts – Conventional & CNC (Sister Concern Supported)
- Welded (MIG / Spot) Assemblies
- Brazed Assemblies (Pipe & Adaptor / Nipple Brazed)

## **Design Division**

- Designed New Innovative Parts & assemblies as per requirements



# PRODUCTS MANUFACTURED

**The product range includes: Polymer & Metal Based Items & Assemblies:**

- Mountings, Vibration Isolators, Dampers, Shock pads, Cabin Mounts, Silent Bush / Blocks, Load Pads, Elastomeric Pads, Side Bearer Pads,
- Buffer Pads, Track Chain pads, Buffer Springs, Draft Gear Pads, Buffers, Discs,
- Bellows, Boots, Covers, Caps, Protective's, Casings,
- Tubes, Moulded hoses, Low Pressure hose, Braided Hose, Wrapped Hose, Knitted Hose, High Pressure Hose, Branched Hose, Turbo Charger Hose (Silicon, Vamac, Fluorosilicon, Viton), Brake Hose, Branched Hose, LPG Hose, Wire Braided Hose, Expandable (Inflatable) Hose, Carbon Free Green hose, Spiral wire Hose, Vacuum Hose etc.
- **Crimped Hose Assemblies and fittings.** Including Rubber Hose, Nylon Tubes, Bend Metal Tubes etc.
- Suction Hose Assembly, Compressor Hose Assemblies, Fuel Lines etc.
- Profiles (All Rubber, Sponge, Rubber & Sponge, Metal Strip stiffened), Flocked Profile Extrudate, Window channels, Door Beadings, Inflatable Seals, Injection Mould Joint Beadings & Profiles etc.
- Straps (all rubber, Metal Backed), Beads, Sheet Metal Straps, Clamps etc.
- Infrared cured Silicone colored / Transparent tubes and catheters,
- Calendered Sheets, Curtain (Anti Acoustic or Anti Heat), Roofing Sheets, Flaps, Sheets for Mines etc.
- Molded sheet (Diamond Grooved, Plain or Textured) up to Width of 2.2 M, Length 0.5 to 10 M, Thick 1 to 25mm
- Grommets, Friction Plugs, Stoppers, Piece,
- Seals, Fan Shroud Rings, Inflatable Seals, Washers, Sealing Rings,
- 'O' Rings, Gaskets, Tyton Gaskets,
- Bushes, Bushing Rubber,
- Diaphragms, Moulded Rubber valves,
- Special Moulded Rubber Engine parts like Spiders etc.
- Solid Tire, Rubberized Rollers etc.
- Scented (Perfumed Articles) for aesthetic Purposes,
- Services like Rubber Roll Lining, Tank Lining, Pulley Lagging etc.
- Sheet Metal Assemblies such as Straps, Brackets, Clamps
- HAPA / CED & Powder Coated Clamps
- Metal Fittings for Hydraulic / Pneumatic Hose Assemblies
- Machined Teflon Articles.
- MIG & Spot Welded Fabricated Articles & Assemblies.
- Ferrous & Non Ferrous Bend Tube Parts & Assemblies
- Automotive Silencers,
- Bullet Resistant Armors & Panels
- Machined Parts, FRP Parts, Vacuum Forming Plastic Parts from Sister Concerns





## PRODUCTS MANUFACTURED:

**The product range includes: Metal Based Items & Assemblies: Stamping**

(Sheet Metal assemblies 0.5 mm to 12 mm Thickness with Press Stamping operation and fabrication Operation using welding, brazing, adhesive etc.)

- Sheet Metal Straps with T Bolt Fittings
- Sheet Metal Straps with Welded Studs
- Sheet Metal Plates with Spot Welding
- Sheet Metal Assemblies with CO<sub>2</sub> MIG Welding & Electric Arc Welding
- Sheet Metal Assemblies with TIG Welding
- Metal Plates in various shapes
- Brackets & Washers
- Metal Clamps
- Mounting Plate Assemblies
- Deep Drawn & Rolled Sheet Metal Articles
- Sheet Metal Assemblies with Non Ferrous Articles
- Powder Coated Sheet Metal components
- CED Coated Sheet Metal Components
- HAPA Coated Sheet Metal Components
- Hydraulic & Pneumatic Hose Fittings
- Bend Metal Tube Assemblies



(With Help of sister Concern M/s Rinbi Auto Engineering Private Limited, a ferrous & non Ferrous Machining Company, Nalin Rubber has developed various Assemblies specially Hoses with fittings, Hydraulic & Pneumatic Fittings, Forged & Machined adaptors, special fasteners, various Machined articles etc.)

## SERVICES RENDERED:

- Compounding for reputed polymer suppliers
- Functional Testing of products against specifications.
- Raw material testing and analysis of some ingredients
- Designing of products
- Reverse Engineering Analysis
- Tooling Development
- Prototype Development
- New Polymer & Compound Processing development
- Special Hose Crimping at Some Customer End
- Estimate Product Life calculation analysis
- Endurance Testing for some products
- Leak Test Analysis for Hose Assemblies
- Rubber Roll Relining / Grinding



# Mounts, Pads, Isolators etc.





# Bellows, Boots, Covers etc:



# Rubber Sheets

**Mats, Flaps, Roofing sheet, Mining sheets**

**Calendared and Moulded, Plain and Grooved, Fabric Reinforced etc.**

- Nalin has developed **Calendared Rubber sheets** (width up to 1.65 m) as well as **Moulded Rubber Sheets** (width up to 2.2 m). These are mostly used by various industry as Floor mats, Mud Flaps, Engine curtains, Acoustic Barriers / Isolators and other flaps. Infrastructure Industry uses it as roofing sheet material for insulation purpose. Mining Industry requires such sheets for various conveyors and insulations. Process industry uses it for lining. Silicone sheets are required by Power generating units for anti electrostatic purpose. Various insulating (Electric / heat) sheets are used in various industry ranging from steel industry, chemical industry etc.
- Nalin produces sheets of varied types. Sheets are normally in thickness range of 1 mm to 25 mm and lengths of 1 m to 10 m. Larger lengths are normally preferred in calendared form. We produce plain sheets and sometimes, grooved and profiled on demand from customers. Some customers also prefer buying Fabric reinforced sheets from us depending on their requirement. Plain Finish and cloth (Mat) finish tops of Sheets are normally manufactured by NRPL. Although Black colored sheets mostly preferred, NRPL do produces colored sheets on demand. Accessories like Skirt board of Conveyor Lines etc. are also produced.
- Nalin specialty in roofing sheet is being high ozone resistant Sheets which gives better life.



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# Rubber PROFILE

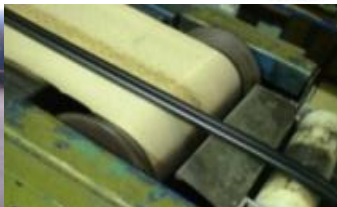
## Extruded Components (Microwave cured)

STRAPS, WEATHER STRIPS, SEALINGS, BEADS, INFLATABLE SEALS ETC.

There are various components extruded and vulcanized at NRPL. Extruded components included Rubber Tubes, Straps, Beads, Profiles, door or window beadings, glass beadings, inflatable seals, some hoses etc. Presently these products are cold or hot feed extruded as required and then vulcanized automatically in synchronized lines with 12 Microwaves coupled with 8 hot air units. Low end products may also be cured in batches by steam. The products are normally All rubber, Rubber Sponge, Sponge & Rubber, Metal Strip stiffened Rubber, Metal Strip Stiffened Sponge, Velvet / Flocked profiles. They are mostly of EPDM Rubber. Other Rubbers used are Natural rubber, Neoprene, Silicone, PVC NBR Etc. The capacity of Cold feed extruder coupled Microwave line is to produce extrudate up to a diameter of 110 mm. There are additional facilities like flocking, Corner molding of Profiles etc. The Tooling design and production for this line is totally in-house.



EPDM Profiles Cross Sections



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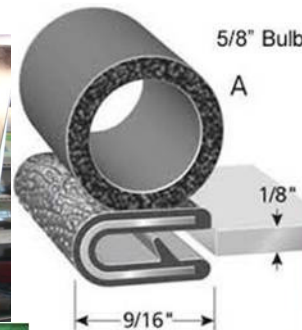
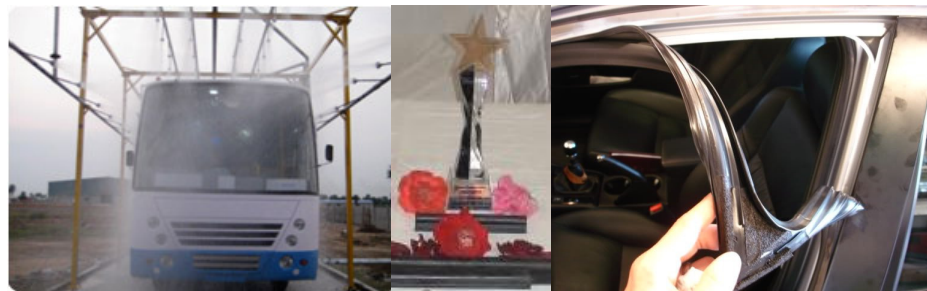


# Rubber PROFILE

Extruded components (Microwave Cured)

All Solid Rubber/ Sponge / Metal Inserted Rubber / Flocked / Adhesive Taped

Nalin Rubber Won the Tata Motors Innovation Award for resolving SFC Cabin Leakage through a brilliant innovation in Rubber Beading. The excellence to design sealing and beadings capable of covering shower Tests and compressed air checks has given this young company a special position in national arena. Today Nalin Rubber is one of the leading Eastern India's Profile & Beading manufacturer. The Items includes Door & Window Beadings for Indian Railway's Engines, Coach's Door & Windows, Sliding Door, Tata Commercial Vehicles, Marcopolo Buses, Hitachi Earthmovers Cabins, Ship Cabins, Hotel Window Sealing, Aircraft's P Seals etc. of all variety of Solid Dense Rubber, Sponge Rubber, Metal Inserted Rubber, Beadings with Flocking or with Self Adhesive Tape backings etc. We also supply this item to various other higher assembly manufacturers. Presently Nalin Rubber is involved in developing its own Complete Range of Windows & Doors with Sealing (Higher Assemblies).

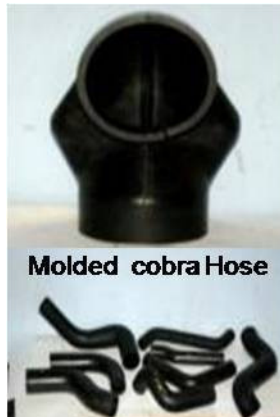


**Auto Mobile Profiles  
(Self Adhesive 3M)**

**Railways Door &  
Windows Beadings**

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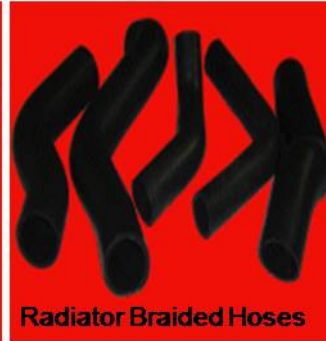
# Hoses, Tubes (Low Pressure) etc:



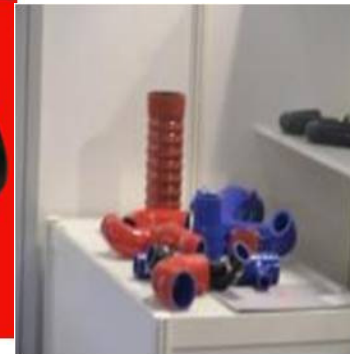
Molded cobra Hose



Molded Hose



Radiator Braided Hoses



Silicone Hose



Plain Finish Radiator Knitted Hoses



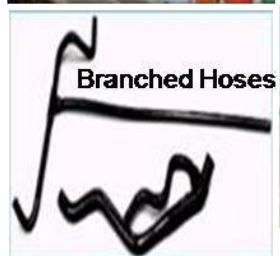
Silicone Turbocharger Hose



Dual Polymer Hose



Molded Elbow Hose



Branched Hoses



Injection Molded Hose



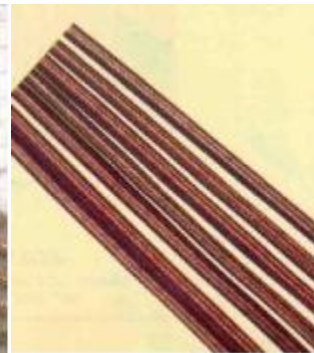


# High Pressure Special Hoses:

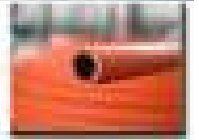


Spiral Wire & Fabric Reinforced special Automobile Engine Hoses Also Vacuum Hoses with Springs.

**Good Bend ability**



Spring wire Reinforced Silicone Hose



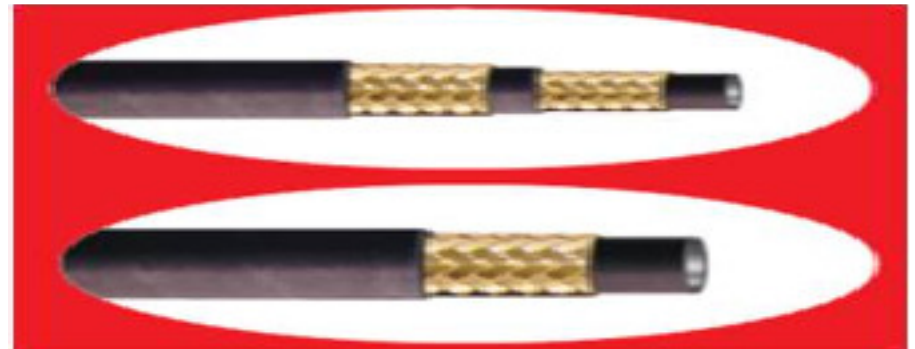
Gas/ LPG Wire Hose

Branded SAE Hydraulic Hose: Wire / Rayon Braided: R1, R2, R3, R5, R6, Air Brake Hose, Air Pneumatic Hose, water / garden Hose, Tubes, etc.

Railway FP / BP Hoses



CARBON FREE HOSES (No wire)

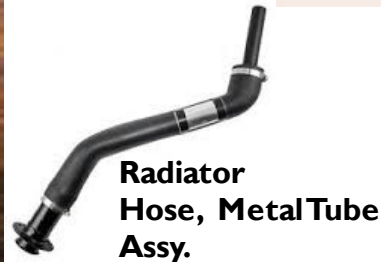
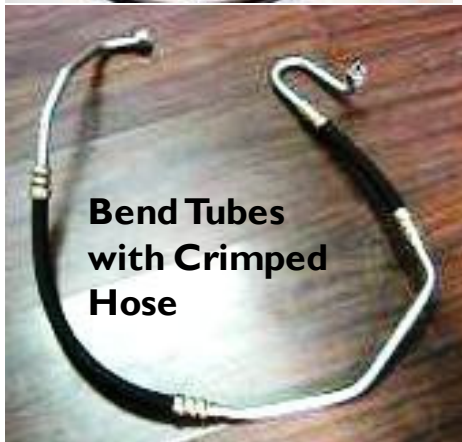


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# Crimped Hoses Assemblies: (New Segment)

Also Hose Assemblies With Nylon Tubes & Steel Bend Tubes

Using Branded SAE Hoses of Customer's choice like Eaton, Gates, Parker, Polyhose etc.

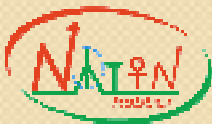


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# Teflon Hoses Assemblies: (New Segment)

Teflon Hose Assemblies of Teflon Tube with Outer Metal woven cover Crimped with Fittings are required for High heat zones with High pressure and such items are manufactured and supplied by us with Fittings.

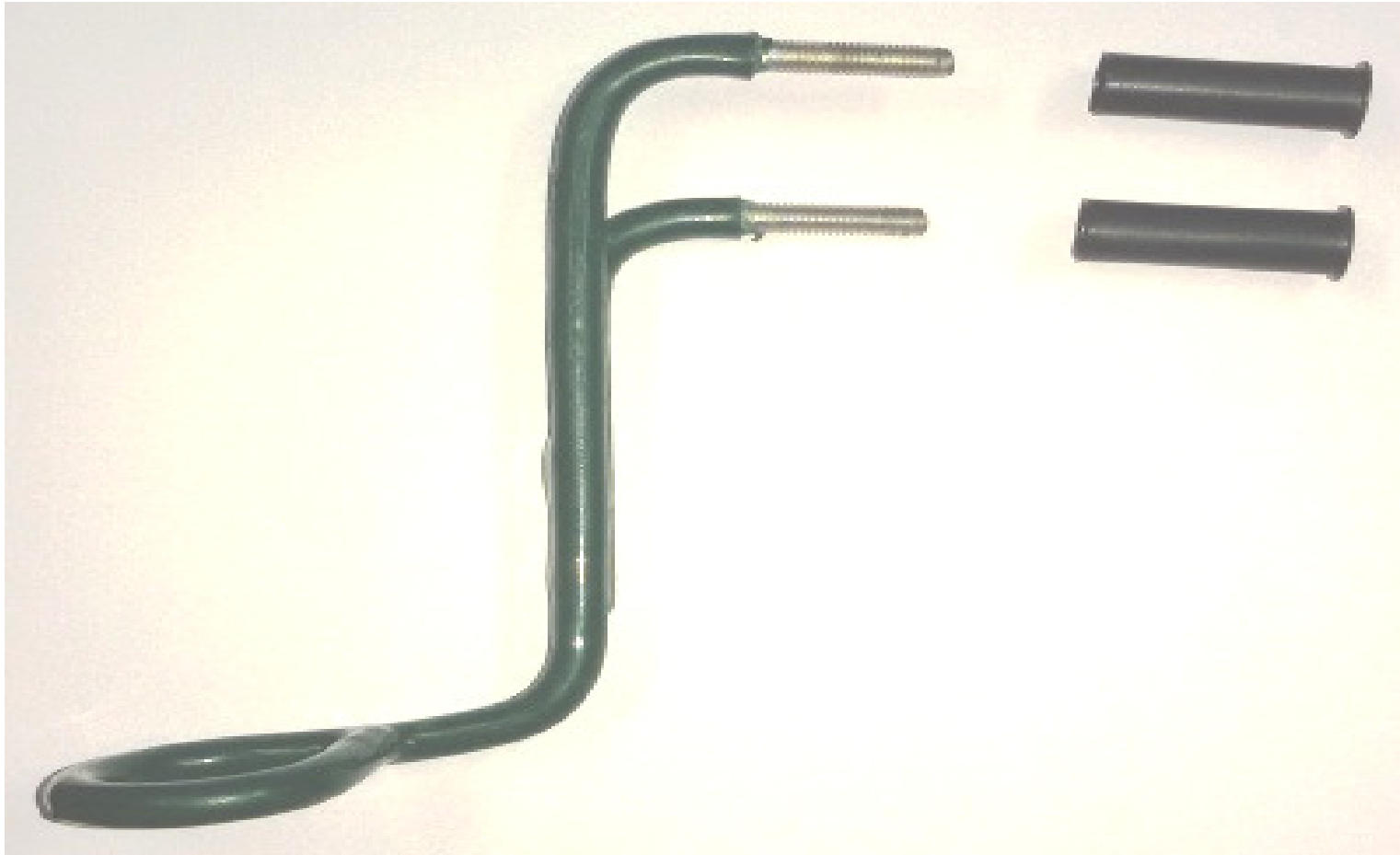


# Bend Tube Assemblies: (New Segment)



Hose Assemblies of Metal Tubes (Bend) and Rubber Crimped Hose for Compressor Inlet and Outlet Line, Hydraulic Line (Pressure Line, Suction Line, Return Line), DDU pipes, Exhaust Pipes etc. can be manufactured on CNC Tube Bend facilities with Hose Crimp and Hose test Facilities. We have already supplied such assemblies to TML ERC.

# Bend Rod Assemblies: (New Segment)



Bending Facilities can be used for Rod Bending Too. Nalin Can bend Rods on CNC Bend machine up to 25 mm Dia depending on its TS and bending torque. We have already initiated supplies of Assemblies based on 6 mm dia Rod which is a Plastic Coated Accelerator Clamp (Fixture bend) and used by Tata Motors Limited.

## Rubber Tyton Gasket: Pipe Ends Joints used worldwide

Rubber Tyton Gaskets are used in Pipe joints and these are developed at Nalin Rubber Private Limited. These are Normally desired by Customers in synthetic Polymers like EPDM Rubber & SBR Rubber. These have a twin Hardness Structure, i.e. Inner side to be pushed inside pipe ID has lower hardness (about 50 Shore A) and outer Side Rim is of high Hardness (about 80 Shore A) & stiffness for longer life. This can be manufactured from diameter 80 mm to 1000 mm. **These are made from Rubber Formulation that do not Contaminate water or fluid flowing through it.**



**TYTON Rubber Gasket: Size DN 100, Make: NILU**

## Fan Shroud Rings & Large Rings / Gaskets

Large Straps & Rings used for covering Fan Shroud of Radiator or for covering Huge rings of Large Diameter are also produced by Nalin Rubber by a specially developed Process which is a combination of Extrusion, Microwave cure and Special Molding. These are used in automobiles and can also be used in steel industry, industrial application, ship manufacturing etc.

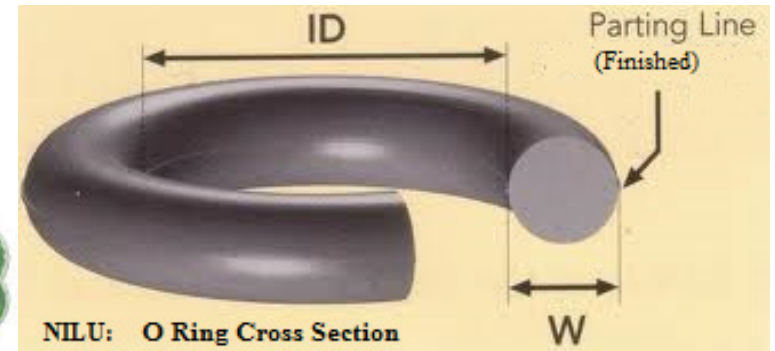
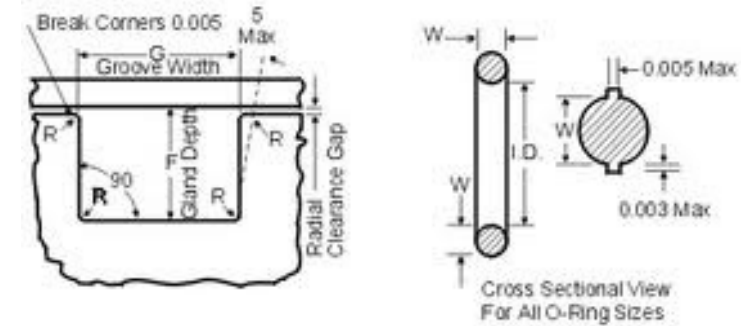


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# O Rings, Sealing, Small Gaskets.

O Rings, Gaskets, T Seal, P Seal, special Cross Section Cords or seals or rings and Metal bonded seals and cords are one of our popular Product range. These are made for High Volume Automobile customers to Low Volume Industrial Customers. These precise materials are checked on profile Projector and special gauges.



NILU: O Ring Cross Section

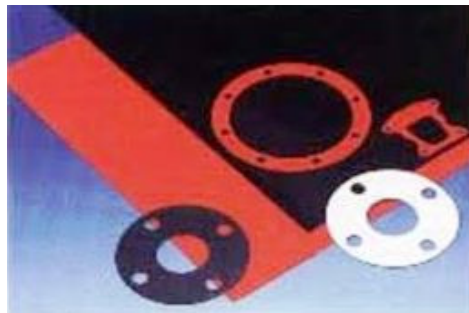


NILU  
SEALS



T Seal, P Seal, Shaped Cross section Rings etc.

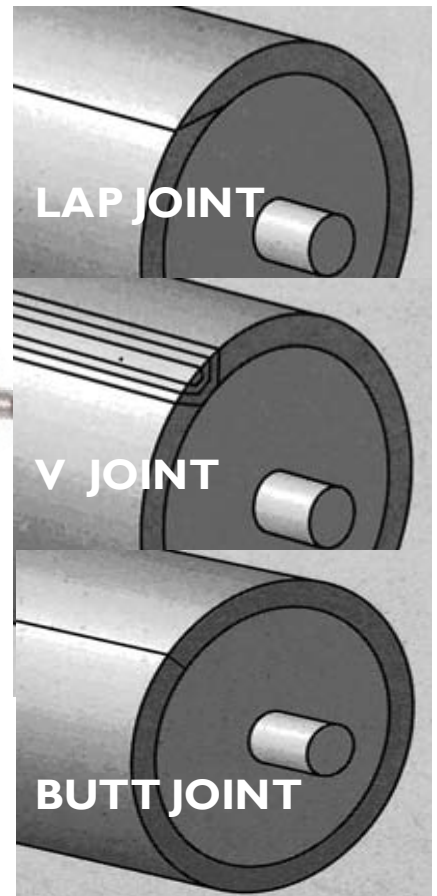
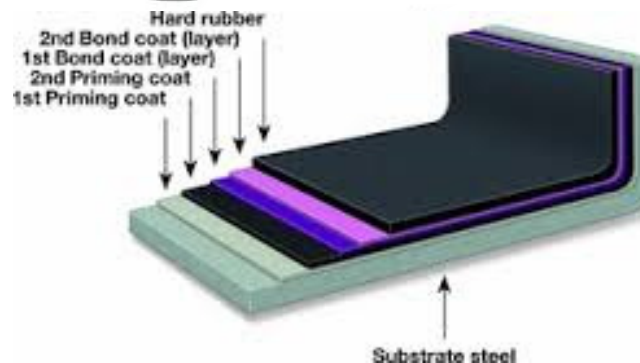
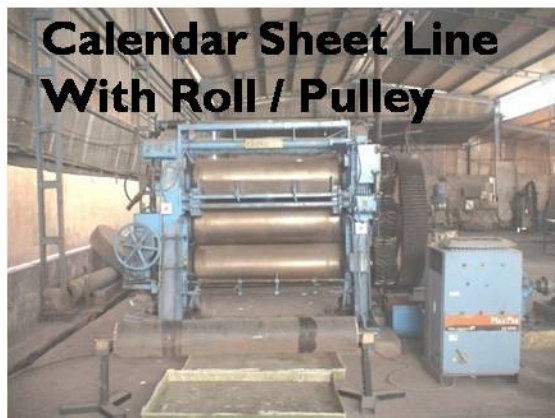
Rubber Gasket Sheets & Cut Gaskets, Extruded Rubber Channeled Seal.



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# Rubber Roll & Pulley Lagging/ Lining

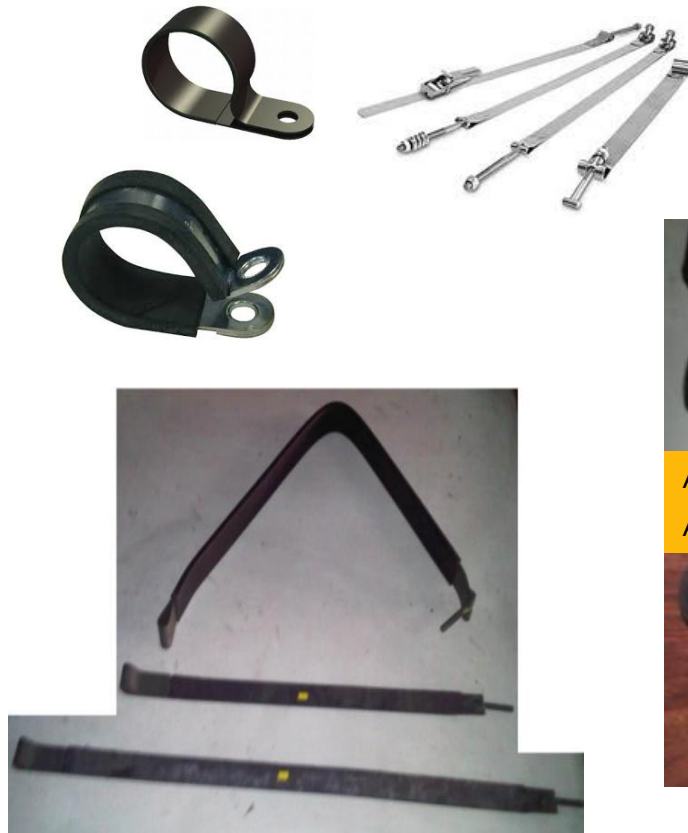
- Nalin Rubber Team has facilities for Rubber Roll Lining & Pulley Lagging as well as any vessel Lagging. The facilities involved are:
  - Fabrication Shop including approved Weld Shop.
  - Machine Shop for De-Rubbering & Roll Grinding.
  - Surface Preparation Facility Including Sand / Sort Blasting & Acid Pickling Facility.
  - Sheet Calendar Shop.
  - **Roll / Pulley Building Facilities.**
  - Vulcanization Facilities.
  - Handling Equipments
  - Inspection Lab with Proto Roll Endurance Tester Facility.



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## Assembly Metal Straps

Metal Straps are rubberized with / without Rubber by Laying with strips or coating or by inserting a rubber channel on it. These Straps are used in Automobile for various Purposes. This new applications complete range is made by Nalin Rubber for Tata Motors Limited including the range for world trucks.



## Assembled Metal Products

Many products are made by assembling Metal / Rubber products with metal products, textile fabrics, plastic components etc. Industry specially automobile industry demands for higher assembled components for faster fitment and for reducing variety of inventory. Nalin Rubber initiated in development of assembled components and many such assembled components which are combination of metal, Rubber etc are being supplied to various renowned customers.



Air Protector for Radiator: Metal Riveted in Rubber

Assembly Radiator Mounting / Bracket

Assembly Bush with Rubber Inserts for Trailer coupling



# Other Rubber Products:



Hood fastener



Housing



End cover



Mud Flap



Marker Pole



Cable Harness Gland

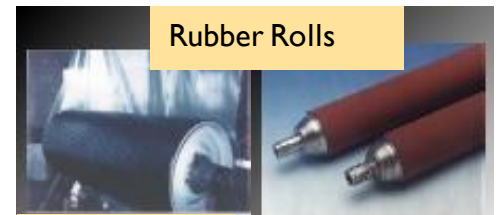
Nalin Rubber (P) Ltd

Silicon Tubes

Infra Red Cured



Rubber Pulley



Rubber Rolls



Webler Block



## Plastic Coated Metal Clamps, Grab Handles, Assemblies etc.:

Nalin Rubber has excellent facilities for producing Plastic coated Metal Clamps, High Adhesion Polymer Alloy (HAPA) coated Metal Fittings in various colours, backings. PVC Coating / Polyethylene Coating / HAPA Coating / Silicone Coating etc. Even Claded metal parts are also produced and supplied to reputed OEMS. These low cost products have high salt spray & Weathering resistance and are useful new generation automotive products.



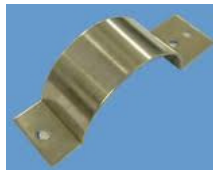
## Metal Assemblies & Fittings:

Nalin has excellent facilities for producing Sheet Metal Stamping Parts such as Straps, Washers, Channels, Bumpers etc. We also produce Sheet metal parts assembled with machining Parts and Parts with Rubber / Plastic backings.

Recently Nalin has emerged as a strong name in Metal processing Industry specially in Railway & Heavy Commercial OEM Industry.

Hydraulic & Pneumatic Hose Metal Fittings such as Nipple, Socket, Bend, Head, Crimp Nut, O Rings, Ferrule, Springs etc. is also available directly or through our sister concerns.

Hydraulic Hose Fittings



Brackets



Washers & Channel  
Strips & Straps



Rinbi Machined Fasteners &  
Hydraulic Fittings



Springs & Coils



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## Some Railway Products: RDSO Approved

Some of the items developed for Indian Railways and supporting Industries like Coach & Wagon Manufacturers are as Follows:

### Approved Items of RDSO:

Metal Bonded Side Bearer Pad WD 85076- S/1,  
Center Pivot washer WD 85079 S/02,  
High Capacity Draft Gear Pad WD 90076 S/01,  
Rubber Buffer Spring for Wagon WD 2267,  
Rubber Buffer Spring for Draw Gear of BG Coach SK-K3004,  
High Capacity Buffer Spring for Carriage CK 210,

Part II

Part I

Part I

Part II

Part II

Part I

### Developed Items (NO RDSO Approval):

Rubber Draft Gear Buffer Spring (HR 40) SK-76562,  
Rubber Spring (MG-W) WD7-7640-S/1  
Sealing Cap for Centre Pivot Arrangement F-0-6-008,  
Silent Block for Anchor Link (Injection Moulded) CG-K6124  
Side Buffer Recoil Spring (BG) W/BD-2252  
Upper & Lower Rubber Washer  
Modified Elastomeric Pad WD 95005 S/1  
Air Brake Hose (FP & BP)  
Rubber Sheets for flooring etc. (Halogen Free Fire Retardant, HFFR)  
Rubber Hoses and various other molded and extruded items.  
Rubber Profile for Windows & Doors for Coaches & locomotives (SK-98151 & others)  
DLW, Varanasi, CLW, Chitrangan, RCF Kapurthala Rubber Items for Door / Window etc.



Center Pivot Washer



High capacity Rubber Buffer Spring 1225 KGM



Modified Elastomeric Pad



Side Bearer Pad



Draft Gear Pad / RF8 Pad



Buffer Spring for Coach & Wagon



Upper / Lower Washer



Silent Block for Anchor Link



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# Special Engineered Products

## INNOVATION is a part of work culture

Nalin Rubber is presently working on Electrically Controlled Tuneable Mounts based on Magneto Rheology which can control stiffness based on sensors while in use.

Several Past projects have been rewarded / Awarded.



**NONITE: Receiving Award for Rubber Design**



**Nylon or Teflon/ Plastic Reinforced Rubber Bush for Vibration Absorption**



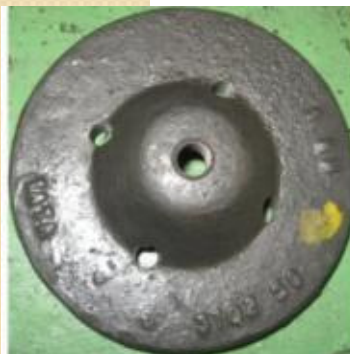
**Hydro Mount with Rubber Piston-Cylinder for better Vibration absorption in cab**



**Colored & Dual Colored Products such as Hoses for customers on Request**



**Tata Motors Ltd Vice President Mr. P. Choube and Quality head Mr. S. Raina at Innovendor appreciating our Innovation.**



**Nalin Rubber researched to replace casting with Hard Rubber for Tata Truck Cabin Mount. Idea Given in Innovendor 2011. Similar products are under Analysis. Better product Performance with Better Life and lower Cost.**



**Appreciation Certified By Tata Motors Limited Sr. GM at Innovendors 2011 Program.**



# Agri-Tool Products

## For TATASTEEL- AGRICO DIVISION

### Innovative Crow Bar Handle with Ergonomic Benefits

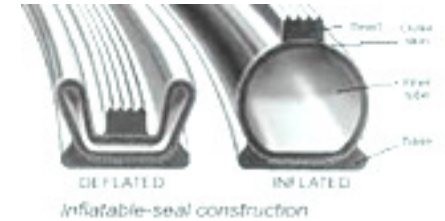
We have developed ergonomically human friendly Polymer handles for Agri tools such as Crow Bar for reputed customers.





## Some Recent successful Projects / Products:

- High Corrosion Resistant Coated Clamps
- Inflatable Seals for DRDO
- Bullet Resistant Jackets & Shield / Armours
- Panels for Armored Vehicles
- Electromagnetic Shields (EMI Shields)
- Electronically Stiffness Controllable Mount





## HUMAN RESOURCE: TARGET ORIENTED MOTIVATED TEAM

Nalin Rubber is a professionally managed company. NRPL team is a highly motivated & Target oriented team where key employees are associated for years. The closely knit team is lead by promoter & Chairman cum Managing Director (CMD) **Mr. R.K. Sinha**, a Rubber Technologist with more than 4 decades of experience in various fields of rubber. Day to day Management is led by young Director **Mr. Dibyanshu Sinha**, Mech. Engg., M.Tech (Rubber Technology), IIT Kharagpur. He and his team have been involved in Designing prestigious products, Evolving new systems, publishing technical articles and providing technical sessions at various institutes including Indian Institute of Technology, Kharagpur. The Design & Development is the key passion for VP, Mr. S Chakraborty. Process Engineering & Quality System is targeted for highest global standards by our head Technologist and Quality Head Mr. Ravi Shankar. Achieving higher productivity & zero defect is the craze for production team lead by Mr. Ashutosh Mistry. Getting customer delight with perfect marketing is the charm of teams lead by GM **Mr. A.K. Mishra**, & Mr. P.K. Singh. Just in Time Delivery of articles in best packaging after PDI is confirmed by Mr. S Singh. Metal Stamping & Machining business is lead by energetic engineering team of Mr. Vishal Kumar. An experienced team works for Design, Products Development, Quality Control, Production, Maintenance, Inventory & store Management, Finance, HRM etc. Sufficient thrust is imparted for training work force at all levels to grasp technical advancements and to improve and consolidate our lead over the global competitors.



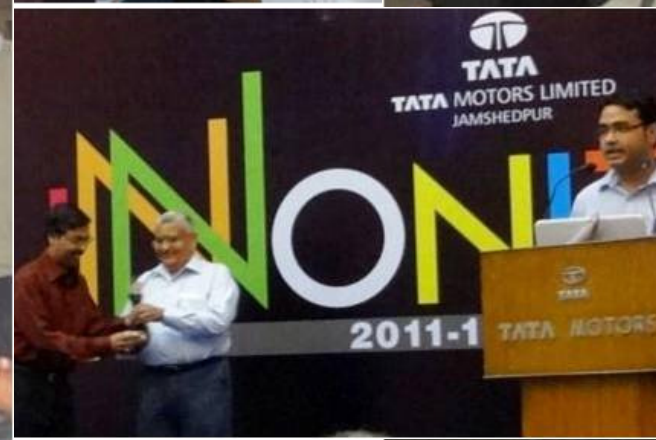
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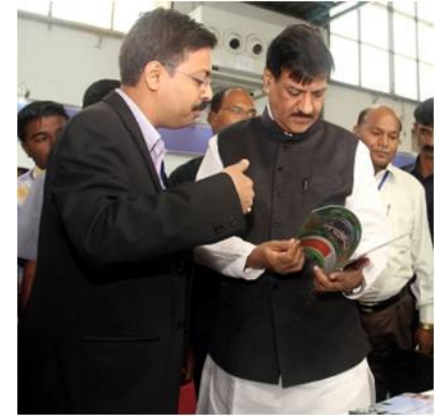


# AWARDS & APPRECIATIONS

Six Sigma Green Belt Awarded (Cummins and ACMA)  
Innovendor Award Winner for Innovation (Tata Motors Limited)  
Appreciation Award for Quality & Productivity from Toyota Motomachi Plant (AOTS, Japan)  
Appreciation Award from DMSRDE (DRDO) for Design & Development  
Appreciation & Published Article for Fast development and Team work by ACMA ACT  
Appreciation & Award by ACMA ACT Jamshedpur Chapter  
Appreciation for leadership by various media articles  
Publications in Books & Magazines.



## AUTO SHOW: GLIMPSES



Maharashtra Chief Minister Shri. Prithviraj Chauhan Appreciating Nalin Rubber Private Limited Efforts

## Presence in Middle East: GLIMPSES





## **Regular Processes** available at Nalin Rubber (P) Ltd. are:

Rubber Product Designing & Development, Mixing & Compounding, Compression / Transfer / Injection Molding, Sheet Metal Parts Production (Metal Press), Wire Spring Making, Machining of Metal Parts, Metal Assembling, Metal Bonding application for rubber, Plastic Molding, Sheet Calendaring, Sheet Molding, Hot & Cold feed Profile Extrusion, Microwave Curing, Infra Red Curing, Hot air Curing, Steam Vulcanization for hose, Roll Making, Braiding of Hose, Knitting of Hose, Wrapping / De-wrapping of Hose, Rubber Product machining, Rubber solution Mixing, Textile impregnation with rubber, Hose Crimping, Painting, Powder coating, Electroplating, Polishing, Tool Making Operations like Machining, Milling, Drilling, Shaping, Buffing, Grinding, MIG & Spot Welding, CNC Tube Bending, Tube Flaring, Plastic Coating, Plastic Vacuum Forming. FRP making etc.



### **Some specialist for Customer Benefits:**

- ◆ NRPL is experienced in manufacturing Low temperature Products (up to -70 C generally).
- ◆ NRPL has long list of high temperature & special environment friendly products.
- ◆ NRPL is experienced in producing goods for specific stiffness & Dynamic Conditions. (unlike static parameters, Dynamic conditions are more relevant for life & checked at our end).
- ◆ NRPL can design and produce specific products considering Aesthetic & Ergonomic aspects. (Perfumed articles, Colored products, Shine / Mat texture finished and other special effects).
- ◆ NRPL can produce high life (for few decades) products for specific items.
- ◆ Customer can generate data based on cost price relation for a product which can be made with various polymers in various design. (Selecting the optimum design & polymer from a set)
- ◆ Company can vulcanize rubber using modern methods like microwave, Infra red, Hot air, hot Fluid etc.
- ◆ Automatic cures and centralized control mechanisms can handle precise items.



## Resource: Plants & Machines

NRPL Plant is divided in various departments and segments for better control. Some of the major plants includes:

- **Rubber Compounding & Mixing Plant**
- **Rubber Molding (Compression, Transfer & Injection) Plant**
- **Rubber Hose (High & Low Pressure) making Plant**
- Rubber Sheet Calendaring Plant
- **Crimped Hose Assembly Plant**
- **Metal Tube CNC Bending (3-D) Plant**
- Plastic (Nylon) Tube Bending Facility
- **Sheet Metal Stamping Plant**
- **Welding & Fabrication Shop**
- Finishing & Packaging Shop
- Chiller Plant & Water Management
- Machine shop for Drilling, Milling, Grinding, Lathe Cutting etc.
- Casting Fettling (Shot Blasting) & cleaning shop
- Spring Making Plant for Spring Hose & Assemblies
- Powder Coating & Spray Painting Shop
- Plastic Coating Shop
- Tool Room
- Laboratory (Metallurgy & Metrology)
- Power Management & Generator (Alternate Power) Shop
- Administrative Building (Office at First Floor with Lift Facility)



### Support Facilities:

- Machined Ferrous & Non Ferrous Components from Adjoining Sister Concern of Group “**Rinbi Auto Engineering Private Limited**”. Also produces Pipe Components, CNC Machined Components, rolled Threaded Components and Cylindrical Ground Components.
- Plastic Moulded Components and small Rubber Components, FRP Components and Vacuum Formed Plastic Components from “**Auto Rubber & Plastic Manufacturing Company**”, a group company.



# Resource: Machines

## Rubber Compounding Plant

NRPL Compounding Plant includes facilities like:

- Poka-yoke by Digital Computerized ingredient Weighing Mc.,
- Formulation Bank computerized
- Cutting Equipments Like Bale Cutters (3 Nos)
- Strip cutter etc,
- Internal Mixer and Kneaders (up to 100 Kg Batch Size): 3 Nos.
- Heavy Duty Mixing Mills,: 4 Nos
- Hot Roll Mills (Separate for color & Black Batches)
- Chiller Plant support for Fluorocarbon and Low Temp Batches.
- Full Compounding Plant is Internally Water Cooled (Temperature Poka Yoke for Scorch Resistance)
- Stock Room for Non Cure Batches
- FIFO followed Compound Store



Computerized Weighing System (Poka-Yoke)



Centralized control.



Internal Mixers  
Kneader Machines



Water Chiller Plants



Mixing Mills of Various sizes



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# Resource: Machines

## Rubber Molding Plant

## Rubber Injection Molding Plant



Shop Floor Networked with WiFi connection



Hydraulic Compression Molding Shop

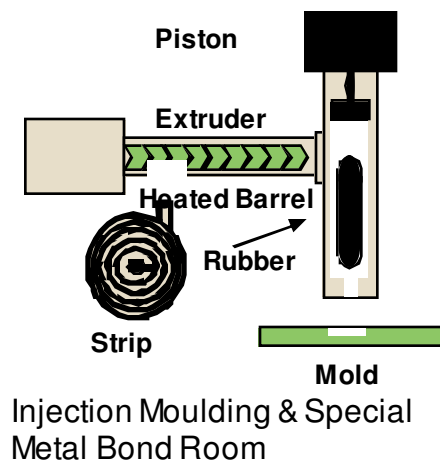


Injection Molding Machine: 3 Numbers



NRPL Moulding Plant Includes facilities like :

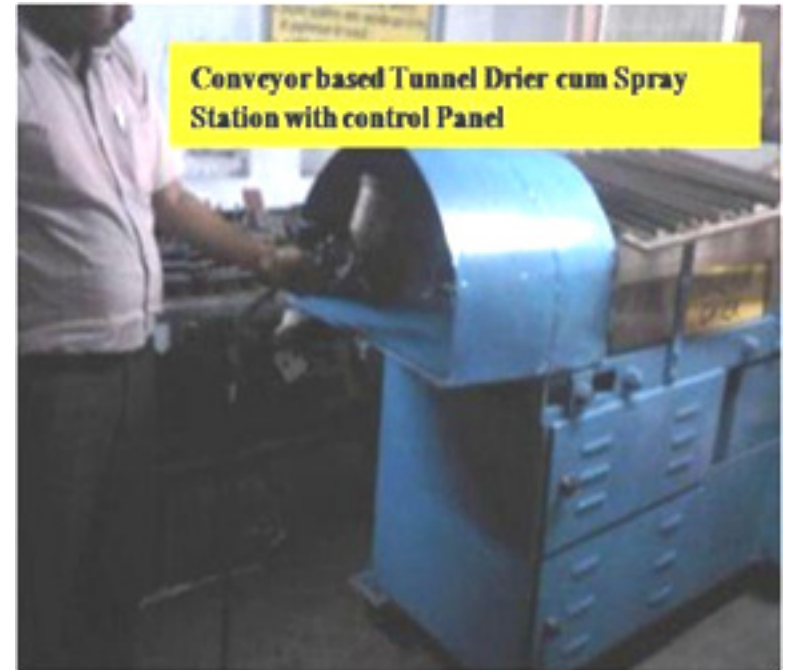
- **Compression Moulding** Hydraulic Presses
- Compression Moulding Hydraulic Automatic Presses
- Compression Moulding Manual Presses
- **Transfer Moulding** Hydraulic Automatic Presses
- **Injection Moulding** Desma Make Machines (4000cc)
- **Continuous Sheet Moulding** Hydraulic Presses
- Corner Moulding Manual Presses for profiles
- Corner Moulding Injection Presses for Beadings
- Metal Bonding Room
- Bond Adhesive Sprays and Online Drier Machines
- Strip Cutter Machines
- Pre former Equipments



## Resource: Machines & Plants

### Bonding Room Facility

Mostly Metal Bonded Articles are produced with special care in dust free chamber. Instead of Manual operation of Brush application we also use Spray coating with special Pneumatic spray guns. These are dried in a special conveyerised chamber tunnels where heat and air flow is controlled with the speed of conveyor. Hence the drying is not dependent on environmental condition and we get a similar drying condition year round. However, as extra precaution the system is monitored for precision with viscosity measurements and coat thickness with coat gauges and data is recorded.



Better Bonding strength (Tear Off) Observed with the system



Coat Thickness Measured with gauge in microns with digital and analog Coat Gauge Meter



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# Resource: Machines

## Rubber Hose Plant



NRPL Hose Plant Includes facilities like:

- **Cold Feed and Hot Feed Extruders** (2" to 6")
- Straight & Cross Head facilities
- Water chillers (3 Nos)
- Strip cutting machines,
- Steam Boilers (Oil Fired & Coal fired): 4 Nos
- Vulcanizers for steam curing,
- Braiding & Knitting Machines with various Heads.
- Hose Wrapping / De wrapping Machine,
- Hose Cutting Machines,
- Hose Crimping Bench,
- Automatic Hose Demandrelling Machine with Pressure Test,
- Buffing Machine for cleaning,
- Finishing Equipments,
- Computerized screening and printing machine etc.



Hose End Cutting Machine



Low Pressure Hose Knitting Machine



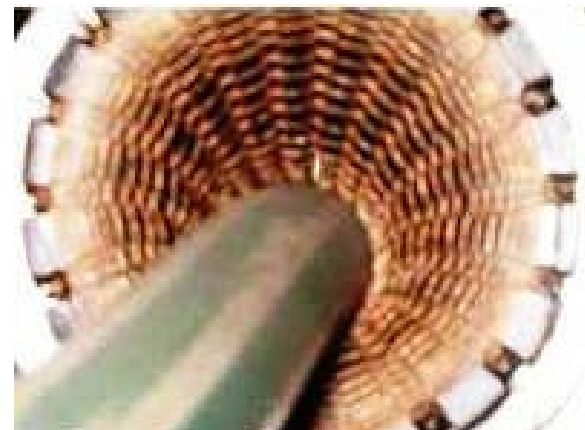
Hose Making Bench



Hose Curing Vulcanizer Machine



Low Pressure Radiator Hose Braiding & Knitting Machine



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# Resource: Machines

## Rubber Crimped Hose Assembly Plant



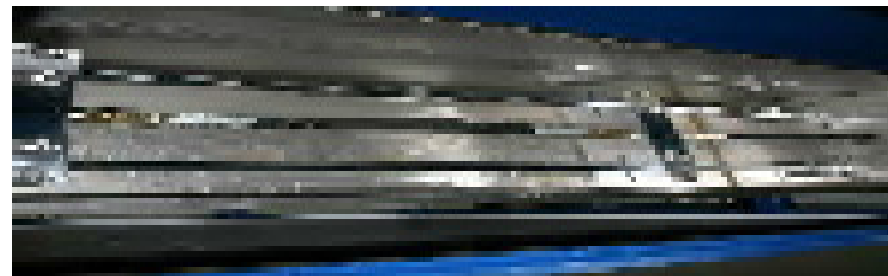
NRPL Crimped Hose Assembly Plant Includes facilities like:

- **High Pressure Hose Crimping Machine**  
(Semi Automatic Finn Power P32MS: Imported )
- Hose Cutting & Skiving Facility
- Hose Insert Fitting Facility
- Hose ID/OD Measurement before Crimping
- Hose Fittings Check Facility
- Hose Assembly Cleaning Facility
- Hose Assembly Leakage Test Facility
- Hose Assy. Pressure (WP / Proof /Burst) Test Facility



Separate Related Facilities:

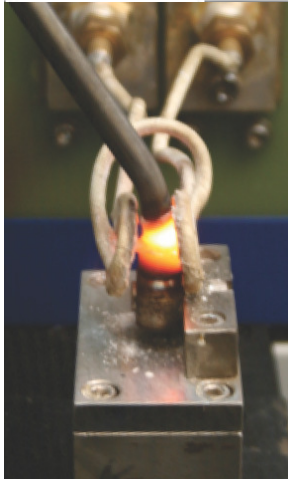
- Metal Tube manual Bending Facility
- Nylon Tube Bending Facility with Boiler
- Fitting Machining Facility



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# Resource: Machines

## Rubber CNC Tube Bend & Assembly Plant (New Upcoming Facility)



NRPL CNC Metal Tube Bend & Assembly Plant Includes facilities like:

- **3 D CNC Tube Bend Machine**

(Directly XYZ co-ordinates or PTB Data Inputable)

Upto 65 mm Diameter x 4 mm Thickness Pipe can be bent easily. Can be enhanced up to 100 mm depending on bends. Machine can accommodate Up to Length of 5 Meter Tube with mandrel Facilities for wrinkle free multiple bends.

On screen operator friendly Program to make up to 75 bends per Pipe in one go.

Data Base Capability to store 10,000 Items Program which can be retracted on demand.

Coloured Touch Screen Facility

Supporting Single bend & Manual Fixture based bends are also available for specific requirements if any.

- **Brazing Facility** for Tube Assembly with Adaptors, Nipples, socket, etc.

Our sister concern is Regular Supplier of Pipe Union Bolts to TML Plants at Jamshedpur, Lucknow & Pantnagar.

Upcoming Unit is of Induction Brazing of Pipe Assemblies for faster and better Brazing.

The Manual Brazing is also supporting Leak Proof Pipe assemblies.

## Resource: Machines

### Rubber Sheet Calendar Plant



66" Calendar Machine: Make Farrel, USA  
For Sheet Making, Conveyors, Belts etc.



18" Calendar Machine for Silicone

NRPL Calendar Plant Includes facilities like:

- **Farrel (USA) make 66inch wide Calendar machine** which can produce Sheets from 1 mm to 20 mm thick. This is supported with steam line, water line, Chiller Line.
- 18 Inch wide 3 Roll calendar machine for Silicone Impregnation
- Online Thickness management systems
- Vulcanizers for Sheet Curing
- Steam Boilers for Running Vulcanizes (Oil & coal Fired)





# Resource: Machines

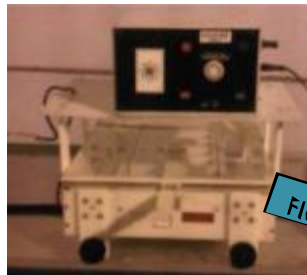
## Rubber PROFILE PLANT:

MICROWAVE & Infrared curing, Hot Air LINE

Automatic Cooling & Flocking with Pneumatic Cutting

Fully Automatic Line (one of its kind in Eastern india)

STRAPS, WEATHER STRIPS, SEALINGS, BEADS, INFLATABLE SEALS ETC.



Flocking Unit

Injection Molding

Automatic Bead Opener

Pneumatic Auto Cutter

Automatic Drier

Cooling Tank

Hot air Units (7 Nos)

Microwave Unit (12)

Shock Unit & Infra Red Unit

Cold Feed Extruder (s)

Chilling Unit for Water Supply

Main Control Panel

Desk Control Panel

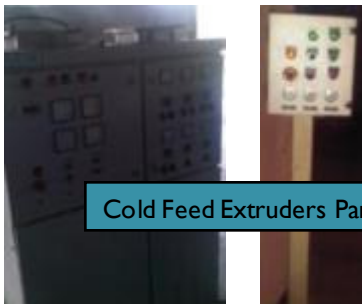
Automatic Spray Base for Internal lubrication In Profile

Profile Projectors & Working Table

Cold Feed Extruders Panels



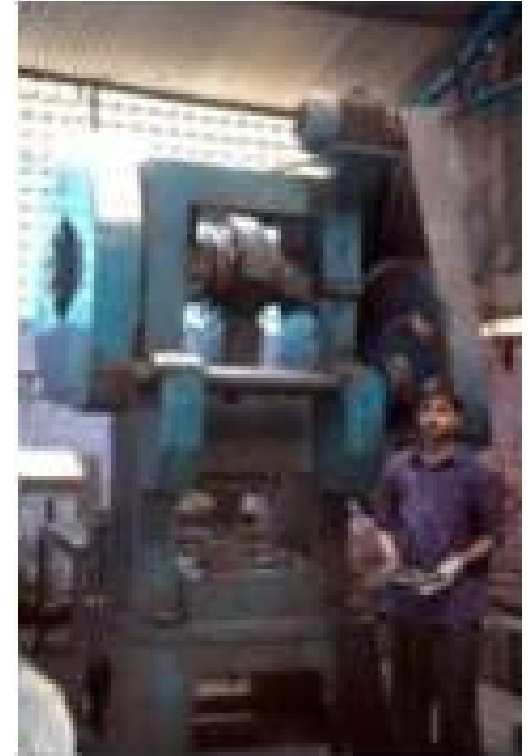
Haul Off Unit



COMM

## Resource: Machine: Sheet Metal Plant

NRPL has a very strong Sheet Metal stamping facility in-house. Various metal parts can also be manufactured and processed internally. We have Sheet Metal Power Presses up to 250 Ton capacity, Sort Blasting Machines (Table type & Conveyor Type), Sand Blasting Machine, Various types of Grinders, Universal Milling Machine, Buffing Machines, Drilling Machine, Tapping Machine with fixtures, Welding machines (Electric Arc, MIG, TIG), Microprocessor Based 100 KVA Spot Welding machine and various other tools, dies and fixtures etc. A mini tool room is in house, which caters our day-to-day requirements. Metal & Textile chemical treatment and bond adhesive coating facilities are also available with



Sheet Metal Stamping Power Presses

Proper Metal Bins for Storage



Shearing Machine



Powder Coating Machine: Gallant make



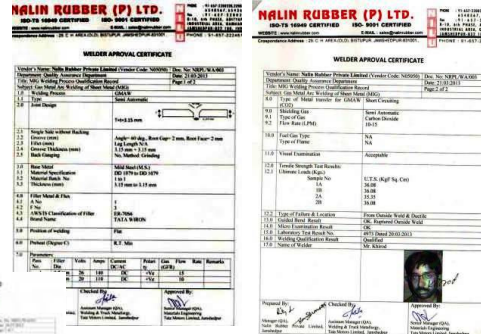
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## Resource: Machine: Welding Shop

Welding Shop has following facilities:  
Spot Welding 100 Kva (Microprocessor)  
MIG Welding Machines  
TIG Welding Machines  
Electric Arc Welding Machines  
Brazing of Brass and Pipe fittings  
Gas Cutting Facility

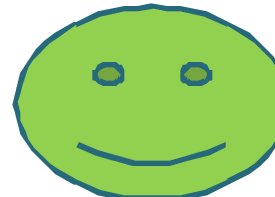
SpotWelding Machine with Microprocessor



## Tata Motors Approved Welders



Approved Welder's Certificates



MIG / CO2 Welding Machines



Welding Tables equipped with welding Fixtures and accessories



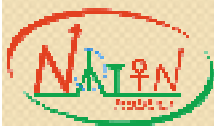
UTM Machine checking Weld Strength



100 KVA SpotWelding Machine



GasCutting Machines



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## Resource: Machine:

### Machining Shop

### Casting Fettling Shop

### Spring Making (Wire) Shop

Machining Shop has following facilities:

- Drilling Machines (Medium & Heavy Duty)
- Tapping Machines (Light & Medium Duty)
- Universal Milling Machine
- Shaper Machine
- Lathe Machines
- Bench Grinding Machine
- Polishing Machines (Pneumatic & electrical)
- Soft Carpentry Machines for Prototypes
- Dual Door Table Type Shot Blasting Machine
- Tumbler type Conveyor Shot Blasting Mc.
- Swing Grinders for Casting Stub Grinding

Our Sister Unit also has Thread Rolling machine, Turret Lathes, Cylindrical Grinding machines etc.



Shot Blasting Machines



Drilling & Tapping Machines



Drill Machine, Welding Machine

Shaper

Lathe

Fitting Table



## Resource: Machine: Fitting Machining Shop

(Sister Concern: Rinbi Auto Engineering (P) Ltd.)

Fitting Machining Shop (Approved regular Supplier of Tata Motors Limited for all their CV Plants- Vendor Code R05820) has following major facilities:

- CNC Turner Machine
- Automated Turret Lathes (ATL)
- Cylindrical Grinding Machine
- Thread Roller Machine
- Milling Machines
- Special Lathes
- Brazing Facilities
- Pipe Bending Facility
- Small Forging Facility
- Aluminum casting Facility

**This plant is already supplying items like  
Adaptors, Banjos, Connectors,  
Pipe Union Bolts, Pipe  
Assemblies etc. to TML &  
Other reputed firms.  
ISO 9001 & ISO-TS16949  
Registered Firm**



Cylindrical Grinding Mc.



Thread Rolling Mc.



Special Semiautomatic ATL Mc.

## Resource: Machine: Fitting Machining Shop CNC Turner

(Sister Concern: Rinbi Auto Engineering (P) Ltd.)

Our Sister Concern M/s Rinbi Auto Engineering Private Limited installs:

**CNC Turner Machine** of PMT Make.

Model: 8 N Supercut

600 ABC

FANUC-Oi Mate TD CNC Controller

8 Tool changer.

Chuck Dia capacity 200 mm.

Ensures good 24 Degree  
Adaptors, Nipples and Hydraulic  
fittings.

Further the Thread Roller  
machine ensures good quality of  
thread on fasteners and threaded  
components.

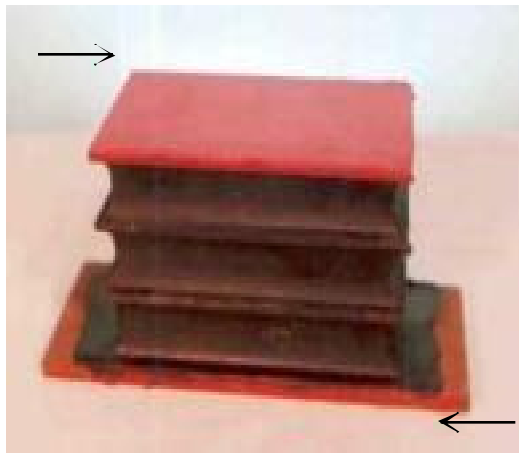


Thread Rolling Machine

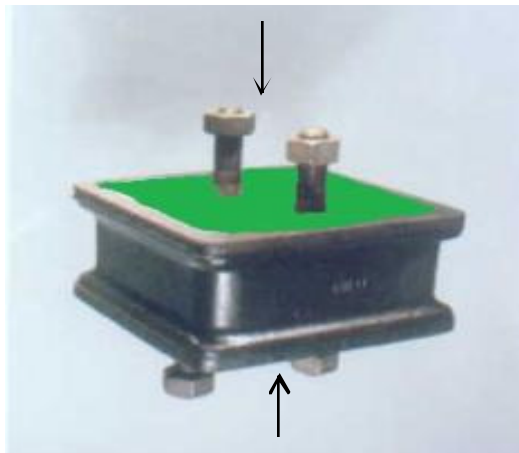


# Precise Stiffness Controlled Anti Vibration Mounts

Mounts where stiffness needs to be controlled within a predefined range are produced for special purposes. These can be related to very precise Static or Dynamic Stiffness. Load vs Deflection characteristics are monitored for the desired Range, In given temperature or for a given Frequency zone. Using a Computerized Automatic Machine.



**Shear Loading**



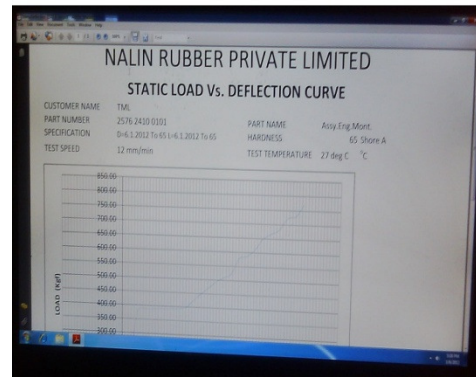
**Axial Compression Loading**



**Angular Compression Loading**



**Static Torsion Loading**



**Computerized Stiffness Reports**

## Resource: Laboratory Facilities

Nalin Rubber is Proud of its well-equipped Laboratory which is being maintained to have regular planned checks on product quality at various stages of production as per the control plans. The Laboratory activities are divided in various levels which are as follows:

- Incoming Material Check Facility (Dimensional & Chemical)
- Metal Lab (Hardness Tester, UTM, Profile Projector & Dimensional)
- Microstructure Analysis of Metals Facility (Digital Microscope)
- Polymer Physical Property Check Facility Laboratory
- Chemical Reverse Engineering Check facility Laboratory
- Dimensional Check Facility
- Thermal Laboratory : Ageing (Life Prediction) , Residue Ash Waste analysis, Fire Check etc.
- Endurance / Fatigue Laboratory
- Load-Deflection / Stiffness Check facility
- Aesthetic control Facilities (Gloss meter, Coating Thickness etc.)
- Low Temperature Test Laboratory
- Compounding Development Facility
- Hose Burst / Collapse Check Facilities
- Calendar Sheet Thickness measurement Facility
- Profile Testing facilities
- Weathering Tests Such as Ozone Resistance, Cold Resistance etc.



## Resource: Laboratory: Incoming Material Check Facility Dimensional Check Facility

Any Material which is Received is check before it is accepted for store as per incoming test plan.

Metal components is normally tested for dimension, Rockwell / Brinell Hardness, Thread Go-no Go gauges, Bore gauges etc for Dimension & Hardness.

Polymers, Chemicals and fillers are tested for Chemical test, Moisture Test, ash % Test, Melting Point test etc.

Oils & lubricants etc are tested for Specific Gravity, Fire point etc.

Paints & Adhesives are tested for Ford D Cup viscosity checks etc.

At times special compound based tests are also conducted to approve new grades of polymers and chemicals.

All the regular Raw materials are bought only from approved or customer recommended sources only. Many of the tests are interdisciplinary inside laboratory and pictures are in subsequent slides.



Ford D  
Viscometer



Profile  
Projector



Chemical  
Melting Point  
Apparatus



Thread  
& Plug  
Gauge



Specific Gravity  
Meter



Thickness  
Gauge



Bevel  
Protractor

### Dimensional Checking Instruments:

- Surface Table
- Vernier Calipers -Digital
- Vernier Calipers Analog
- Bore Gauges
- Height Gauge
- Bevel Protractor
- Profile Projectors
- Thread Gauges
- Radius Gauges
- GO-NO Go Gauges
- Scales
- Inside Outside Calipers
- Groove Gauge
- Thickness Gauge
- Dial Calipers
- Online Non Contact
- Thickness Gauge



Dimension Check  
Surface Table with  
Test Equipments



## Resource: Laboratory: Metal Checking Facilities

Stamping Sheet metal, Welding shop & Machining shop is well supported by Laboratory which takes care of metal parts. Facilities includes:

- **Rockwell & Brinell Hardness Tester**
- **Universal Testing Machine** (5 Ton, 100 Ton, 300 Ton)
- **Digital Microscope** Computerized for Microstructure Analysis.
- **Spark Test** for Material Check
- Compression Testing Machine
- Thread Profile Projector with Gauges
- Radius Gauges Set
- Nugget Test for Spot Weld Check
- Endurance / fatigue Machine for Welding Check on Product giving vibration.
- Fillet Test
- Surface Finish Tester
- Torsion Strength Tester for Fastener Welding Strength on Sheet Metal.
- Elcometer for Paint & Plating Thickness
- Various Gauges & Fixtures for item specific checks as per requirements.

**Digital Microscope  
for Microstructure**



**Spark Test**



Fixture & gauges  
Used for Checks



UTM Checking Ultimate Break  
Load & Tensile Strength



Hardness Tester Machine (Rockwell & BHN) & Eye Piece



Nugget Test for Spot welding  
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## Resource: Laboratory:

### Thermal Laboratory Life Prediction, Ageing & Ash

Thermal Laboratory is an important part of our laboratory. It includes ageing oven for Life prediction with special analog recorder for time to time reading. It has other facility for fire based checks and muffle furnaces for reverse engineering & Ash % Checks etc. The thermal laboratory includes primarily:

Digital Temperature controlled Air ageing ovens for ageing tests (air / Oil) and product life prediction (3 numbers)

Analog recorder for Temperature recording against time with print facility.

Muffle furnaces for ash Percentage Test (3 numbers)

Desiccators and related equipments like crucible, Weighing arrangements etc.

Flame propagation Check facility for checking fire retardency for specific items / compounds. This gives flame propagation against time. Bunsen Burner, timer etc.



**Muffle Furnace & Ageing**



**0-300 C Air / Oil Ageing Oven Mc.**



**Flame Propagation check Facility**



**Crucible, Desiccators and weighing Facility**

## Resource: Laboratory: Hose Related Test Facility

- Burst Pressure Test
- Proof Pressure Test
- Collapse Pressure Vacuum Test
- Hydraulic Test
- Hose Thickness Test
- Hose Bend Test
- Hose Low Temperature Test
- Ply separation / Adhesion Test
- Water / oil Absorption Test
- Hose ID Test with Cone.
- Crimping Strength Test
- Hose Wire Stripping Load Test
- Hose Metallurgical Tests
- Hose Outer surface Rub check test
- Hose OD Increase under load pressure Test
- Hose Endurance or Impulse pressure Test.



Thickness Gauge



Vacuum Collapse Test Machine for Hose



Hose Bend Test

High Pressure  
Hose Hydro  
pneumatic  
Burst Pressure  
measuring Test  
Facility



Burst & proof Pressure Test Machine for Low  
Pressure Hose With Endurance Test Facility



Hose ID Measuring Cone facility





## Resource: Laboratory: Profile Related Test Facility

- Insertion/ Exertion Load Test (Digital)
- CLD Bulb Test (Digital)
- Shower Test (if Mating Part provided)
- Profile Endurance Test.
- Profile Low Temperature Test
- Online Magnifying Glass Visual check
- Profile Projector Checks Online
- Adhesive Tape Strength Test
- Flock Density Test
- Rheological Test
- Surface Resistance Test
- Profile Metallurgical Tests



Profile Projectors Vertical & Horizontal (400 & 700 mm)

Visual Inspection  
Check online with  
Magnification Glass



Fatigue / Endurance  
machine for Profile (Also  
Effect of Rubber profile or  
part Paint Gloss finish.)



Insertion & Exertion Force Digital Testing



CLD Force Digital Testing: Bulb Collapse

## Resource: Laboratory:

**Environmental Laboratory**  
**Low Temperature Test Lab**  
**NDT Laboratory**

### Environmental Effect Testing Unit

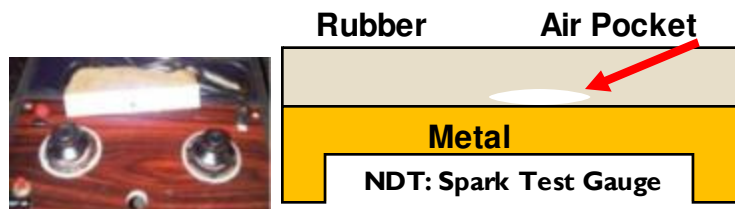
- Static & Dynamic Ozone Test Chamber
- Salt spray Test Chamber

### Low Temperature Testing Unit

Low Temperature Brittleness test, Hose Bend test and Hose Pressure Endurance Test at Low Temperature can be conducted. Similarly Thermal Shocks can be given in Low temperature test unit (up to  $-70^{\circ}\text{C}$ ). We have facility even to give hammer effect on a rubber product at Low Temperature. This unit can be computer connected and provides ample data.

### Non Destructive Testing (NDT)

Some of the key special equipments of Nalin Rubber Includes Instruments like Electrostatic based spark tester for Non Destructive testing for a probable deformity.



Ozone Testing Chamber: Static & Dynamic Testing



## Resource: Laboratory: Endurance Laboratory Facilities

Nalin Rubber Provides designed components and has firm believe to provide products which has high Dynamic life in actual usage. For design validation and for regular Fatigue testing we have a Endurance laboratory which can test variety of products. Design of experiments (DOE) can be designed and done on products to accommodate real conditions on product and calculate its active life.

Dynamic Life cycle of a Product can be predicted using Computerized Fatigue Testing machine / Endurance Testing Machine for Vibration and for Loadings and Shocks in Mounts, Isolators, Buffers, Shock Pads etc. 0 to 23 Ton / variable Frequency Computerized networked **Endurance Testing / Fatigue testing machine** for dynamic vibration product testing. Can also test based on displacement (LVDT).

Similarly **300 Ton Cyclic Endurance Testing Machine** is also available.

Torsion Stiffness & Endurance can be tested on Torsion machine taken under automation project.

**1 Ton Tup Hammer Impact Endurance machine** Can Check a Product for impact Blows for a given no of cycles from a height up to 1.2 m.

Similarly **Hose High Pressure Test Machine** can test product under High Pressure (Working Pr/ Proof Pr. / Burst Pr.) and in some cases Variable Pr. Fatigue for a small number of cycles. It can also test fatigue under pressure variation coupled with mechanical twists (Omega twist) and turns.

**Profile Endurance Machine** can test Products such as door / window seal profile for fatigue failure under given number of cycles of shut & open. It also calculates effect of repetitive use on gloss effect of Painted surface with which rubber is interacting while in use. (Picture on other page)



Digital Compression & Cyclic Fatigue



Computerized Endurance Test Mc.



Tup Hammer Mc.



Hose Test Bench





## Resource: Laboratory:

### Other Laboratory Facilities

There are many other test facilities available in the Organization. Some of the important ones includes the following:

- Electrical Property Testing Facility specially Electrical Resistance.
- Abrasion testing Facility
- Visual Check Aid Like Table mounted Magnifying Glass with light.
- Chemical apparatuses, Spirit Lamp, Soxhlate's apparatus, Uniform temperature distillation apparatus, Various reagents and chemical apparatus including titration facility.
- Single pan electronic balance.
- Physical Beam balance
- Specific Gravity meter
- Vibration Analyzer
- Environment condition analyzer (Dry & wet Bulb Thermometer, Relative humidity analyzer etc.)
- Tachometer
- Thickness measurement for Rubber Sheet Production Line.
- Shear Load Testing Facility
- Durometers (Shore A & Shore D) & Pressure Gauge Comparison Based Calibration Facility.
- Non Contact Laser Thermometers for Mould Temperature Check.
- Hygrometer
- Measuring Cylinders, PH Measurement etc.

### Aesthetic control Laboratory Facility

Aesthetic plays an important role in many of the products. We have Elcometer (Digital & analog) to measure Adhesive Coating / Paint Coating. Gloss meter is used to measure and control the gloss and shine of the Products

### Compound Development R& D Facility

A special Imported Lab Mixing mill with Lab Test Slab Moulding machine and Compound Testing Facilities are available for Rubber Compound development and modification as per requirement.



Physical Balance

Chemical Lab



Elcometer: Paint / Coat Thickness Test



Electrical Gauge



Imported Lab Mixing Mill



Computerized Rheometer



## Resource: Laboratory: Pre Dispatch Inspection (PDI) Facilities

A well-equipped Pre Dispatch Inspection Table furnished with equipments to check all products in three stages of Hardness, Dimension and Visual apart from all desired parameters is a specialty at our end. Its co related with our Computerized Quality Document retreat able for years to cross check data and parameters for guarantee. There is a computerized facility for bar coding and online screen printing of certain data on products if required.

Bar Code Printing Machine



## Resource: TOOL ROOM

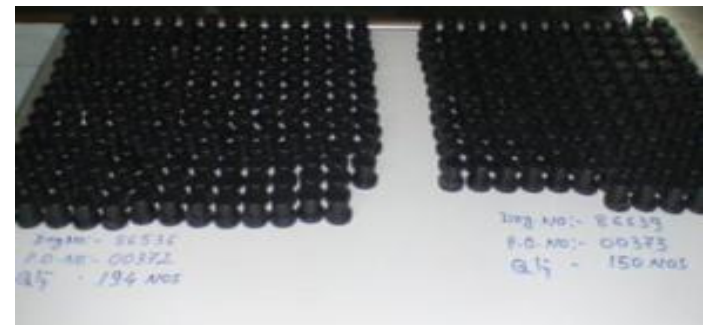
### IN House Tool & Prototype making Facility

Nalin Rubber has in house Tool Room which can design and produce Prototype & Regular Tools at very low lead time and good quality. **Aluminum metal Cast Mandrels for hose, Compression and Transfer Moulds, Extrusion Dies, jigs and fixtures** etc. are regularly produced in NRPL Tool room. The same facility is also used for regular Moulds and Tool Polishing. The tool room Equipments includes:

- Lathe Machine,
  - Shaper Machine,
  - Drilling and tapping Machine,
  - Polishing Bench,
  - Universal Milling Machine,
  - Tool Electroplating facility,
  - Various types of Grinders,
  - Sheet bending machine,
  - Profile cutting Machine,
  - Wood Mandrel making facility
  - Aluminum Casting for Mandrel Facility,
  - Gas cutters,
  - Welding Machines etc.
- However some highly critical tools are sometimes offloaded and manufactured through professional established mould Makers across the globe, specially for Injection Moulds.

Nalin Rubber has ability to develop & provide prototypes in minimal lead time. Various molded & Extruded articles needs correction in stages and prototypes can be provided for them. Ergonomics & aesthetic aspects are often approved with prototypes.

Its uncommon but few customers use these facility for maintenance purpose as it provides urgent rubber spares in very low lead times although they are costly.





## Commitment: Clean & Tidy Shop & Office

Nalin Rubber Team firmly believes that a clean, organized and tidy workplace with pollution free environment leads to energized and motivated work discipline. We are following some of the Japanese work place concepts like 5S and Kaizen in all our workplaces and are proud of our clean and Green Factory.



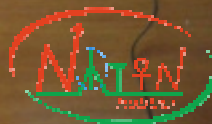
Nalin Rubber Reception Area



Nalin Rubber Central Office Area



Cleaning with Machine in Production Area



## Resource: Support Facilities

New **Administrative Office** is centrally air-conditioned and the approach is facilitated with Lift and various departments are ideally placed for visitors ease.

A **Library** of about 230 technical books based on various aspects of Rubber Technology, Product Design and Development, Polymer chemistry, engineering aspects, Finance and others are being maintained at NRPL in conference hall for improving our technical edge. The company also collects various related magazines, articles, new reviews, product catalogues and Video CD's on Rubber Technology and allied fields of polymer. Lots of Periodicals, Magazines & Related study Material is regularly purchased & Updated in this Library.

A **Computer Center** caters NRPL's statistical and accounting requirements.

A mini **Design** team caters to the needs of new product development, Product improvement studies, Reverse engineering products, product analysis, data compilation for various agencies and customers as and when required. The rubber compound development and testing related data are specifically controlled in consultation with the due customers. It is also involved in internal tools and die development. We intend to further expand in this arena.

We have a **Conference Room** with Modern Facilities like Video Conferencing and internet facilities etc. for holding discussions, conferences and Training Sessions.

**Mini canteen / Tea Room** is there to refresh our team time to time & provide our guests a soothing hospitality. It has Tea / Coffee/ Soup Machine with Fridge, Microwave, Cooking oven etc.

We have **Wireless intranet (Wi-Fi) networking** for hassle free working in all over premises.

A modern air conditioned well furnished **Guest House** at Plant and another is under construction.

**Nalin Rubber Officers Colony** Land has been Purchased. Manager's Housing Premise (14 Flat) is under construction in a nearby Locality (0.5 Km from Plant in Residential Area). We have already Provided Housing to more than 20 Permanent workers of ours.



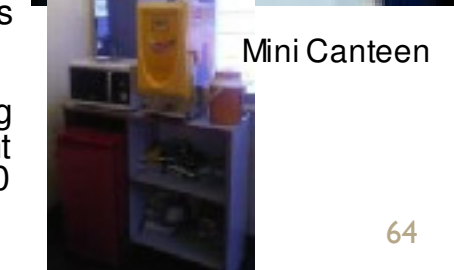
Library



Computer Centre



Conference Room



Mini Canteen

# Product Design Capability and Reverse Engineering:



Nalin Rubber's Design Team has designed components to match the needs of Customer. NRPL has designed components for DRDO (Indian Defense), Tata Motors Limited, TELCON Construction Equipment Co., Tata Steel Limited and many More. NRPL can Design Components in accordance to international standards like ASTM, SAE etc. The Designs can be provided by **2D drawings or 3D Models** (CAD generated .igs files). If desired, stress analysis, heat analysis etc can also be done on designs. FEM analysis based on Non linear Stress can be arranged using IDEAs software.

**Design Validation** is the key to new product design. Dynamic Test machines such as endurance testing Machine and other lab equipments are used to create actual usage conditions and after subjecting the products to proper anticipated most rugged conditions the products are cleared mostly in joint consent with customer / user. We can generate various design data such as stiffness data on various loading pattern, Load & Deflection data, Heat related product behavior, Cyclic usage behavior, resistance chart to various environment and chemicals etc.

We believe in organized designing and thus we provide Design FMEA(DFMEA), PFD etc. so that customer can have a better understanding to our compliances in the design

Various Industries are facing **Tough Competition**. NRPL is a big support to its customers who takes the path of **Continuous Improvement** by comparing their design and product capabilities to that of their competitions. We help our customer understand the phenomenon and do lots of Reverse Engineering just to provide them better options suited for their conditions and based on their priorities. Targeted Reverse engineering to surpass Competitions in Life cycle of Product, Performance capability of Product or Cost benefits of product is also taken time to time on customer requests. Recently lots of customers do reverse engineering with material science studies to get best possible solutions in their locality (Region Targeted cost and material performance & Economics based). Even for Project Engineers, reverse engineering provides information in materials used in trials, helps in creating material and process standards and clearly provides confidence in indigenization and localization moves.

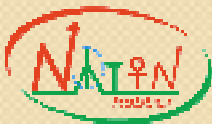


# DELTA SHOOTOUT: Sponsor & Design Supporter



Nalin Rubber Participated as Sponsor and provided Rubber & Metal Designed Parts for DELTA Shootout 2014 & 2015:  
Active Participation in Amateur Cart Design & Race Event

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## Resource: Marketing

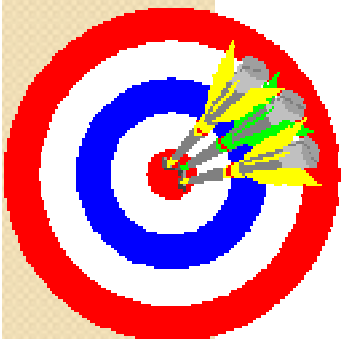
Nalin Rubber has a technical marketing Team taking care of its Customers. We have customer wise dedicated officials who serve as single window interaction. Marketing Lead times are also considered and therefore standard customers and products are quoted with a pre defined Data Base and Formulated Excel Sheet. Thus our Quotes are accurate and logic predefined. Fast Quotes and calculations are emailed which subscribes to our faith & Commitment in Quality: Quality of Marketing. We are also concerned about our Commitment in Delivery, pricing, trust & ethical behaviour. Low Volume & High Volume Buyers have different Needs.

**High Volume Customers** need dedicated plants. Serving to Automobile Industry & Railways has given us various high Volume methods like Injection Moulding, computerized weighing, CNC Bending & machining etc. Still due to low volume customers we provide our HVC's some extra advantage.

- Prototypes & Initial Trial lots can be done faster & efficiently.
- Our operations are not affected in Low Seasons and HVC can rely on us.
- Design Skills are improved by LVC as they provide large data Base and when designing for HVC we use them.
- Our Polymer Formulation data base is Huge due to long experience in dealing LVC and thousands of products handled for them in various working conditions.

Nalin Rubber Marketing Team has analyzed that many times **Low Volume Customers** are hesitant to approach better Suppliers as they feel neglected. Our dedicated to customer approach has changed this faith. In fact they feel safe and sound with our Quality Marketing Team.

- LVC can use Medium & High Volume methods for their Low Volumes.
- Materials Cost Efficiency is better as the blend provides the favour of volume purchase.
- Many times specialty polymers (Viton, Silicon etc.) are not available in Low Volumes but we help LVC as we are always with shelf stocks.
- LVC can use the Costly Design & Testing facilities while the facilities are mostly amortized on high Volume customers.
- Establishment & Capital cost is amortized on Larger Business.





## Customer Specific Area in NRPL

### Super Market of Vehicle Spares for Tata Motors Ltd (Spare Part Division, TML) Customer Packaging Done at Nalin Rubber Private Limited

Various Customers Like Indian Defense and Indian Railways relies a lot on our products and they have a special area demarcated for them known as Bonded area. They utilize this area in stocking inspected material as well as stocking material for their dispatches from our company.

Even Private Players have immense trust in our products. Recently one of our giant Automobile Buyer **Tata Motors Limited Spare Part Division** have chosen us for a special program. Under this scheme we keep fixed stock of most of our important products which may be of new or old vehicles. **These are stocked in a Supermarket style**. Thus whenever they need them (24 X 7 service year round except national holidays) we can supply the agreed minimum quantity immediately. Thus for Vehicle Off Road (VOR) and emergency requirements the material through a logistic partner moves to end user / end retailer / end service station in a record time. The items covered are Engine Mounts, Various Hoses (Turbocharger, Moulded, Radiator, High Pressure etc), Bushes, buffers, Sealing rings, Fan shroud Rings, Bellows, Profiles etc. The trust on our quality products makes us the special partner of our customer.

Customer Trust is so immense that Their Spares are **Packaged Directly at our Plant** for direct Supply to Their warehouse. We were the first of Tata Motors Vendor to achieve this feat and were one of the first to be declared as **Vendor Managed Inventory (VMI)** Vendors.



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# Documentary Preparedness for some Customers:

Many Customers requires information if we are prepared with some standard government clearances. We hereby ascertain them that we have following clearances:

- Excise & Service Tax Registered (All Invoices are Modvatable)
- **NSIC Registered** (National Small Industries Corporation Ltd) for PSU's & Indian government Tenders.
- **RDSO approval** available for Railways & **DGQA approval** for Defense.
- Pollution Board Clearance is available.
- **Import Export Code** (License) is available.
- Member of important Associations Like: Chemical & Allied Product Export Promotion Council (**CAPEXIL**), All India Rubber Industries Association (**AIRIA**), Automotive Components Manufacturers Association (**ACMA**), Confederation of Indian Industries (**CII**), Adityapur Small Industries Association (**ASIA**), Singhbhum Chamber Of Commerce (SCC, Jamshedpur) etc.
- **ISO 9001 & ISO: TS 16949** Certificate
- SWIFT code & Internet Banking available for Fast (wire) financial transaction.
- SSI (MSME) certificate available.
- DHL Export / Import account for Export / Import Logistics.
- Income Tax Clearance Certificate Available for PSU's.



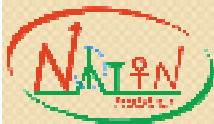
IEC License



NSIC Certificate



ISO- TS 16949 Certificate



## Special TEAM Activities: NALIN PARIVAR

NRPL team believes in **achieving feats collectively**.

The team members feels pride in calling themselves as members of “**Nalin Parivar**”. Management is passionately involves in mutual upliftment of Parivar by social commitments ranging from employee's children education to spreading happiness & pride through collective celebration of major festivals inside factory Campus.

Cultural feats Like Chau Dance, Folk singing etc were performed by team & family members for key foreign visitors & Clients.

This is worth mentioning that some of the major productivity improvement KAIZEN activity were possible only because of motivated team. Many Practical design inputs are given by everyone in the company.

Any Award or achievement won is always celebrated with all the team members and there is a sense of collective ownership.



# Improvement is a Continuous Process at Nalin

The team of Nalin Rubber strives for Continuous Improvement. Kaizen and Waste elimination is the most popular activities taken up by employees regularly. Processes have been evolved to give better outputs and Production is traceable from Raw Material Inwarding to Supply with reference to Invoice number all through major processes.



Special  
Designed Paint  
Station

Product  
Traceability  
Sheet  
PDI reports are  
Online



Mounts Thread Cleaning  
Mechanized



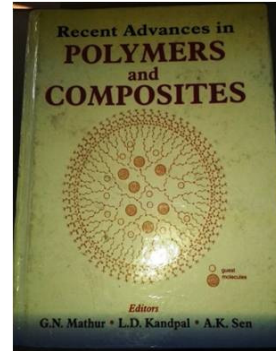
Rubber Profiles Dried Automatically online after  
Cooling & Cleaning in water



Special Hangers for Hanging Rubber Profiles while  
in Production to avoid any scratch or cut.

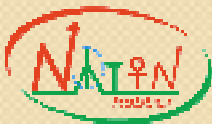


# LEADERSHIP:



NRPL has always pioneered in up keeping its Leadership in Local Market and the team aspires for national and global leadership in its arena.

- NRPL is the first in the Eastern India zone to improvise Rubber Moulding system to Injection Moulding system.
- NRPL is one of the First rubber company in the Eastern India zone to be ISO TS 16949 Certified.
- NRPL is the First in SE Asia to produce Inflatable seals for Nuclear Usage.
- NRPL is a leading Import substitute Rubber products designer cum manufacturer in the zone.
- NRPL is the First in Eastern India zone to make its ingredient weighing system a Poka-yoke and fool proof computer controlled weighing system in a non tire factory.
- First in the Eastern India zone to establish Low Temperature Product testing Facility for Rubber product under actual usage condition
- First and the only in the Eastern India zone to establish Infra Red cure mechanism for rubber products online.
- First and the only in the state to establish Microwave cure line with flocking and hot air zones for profile manufacturing automatically.
- Biggest Rubber Moulding size capability in the neighboring area.
- NRPL Team has been active in R&D and lots of technical publications has been recognized by academics and the technical fraternity.



# Commitments:

## ETHICS & CODE OF CONDUCT

Nalin Rubber tem is proud to follow principled Ethics and code of conduct in line with Tata Code of Conduct. We believe in equality of humans and working with ethical morals.

## FINANCIAL TRANSPARENCY

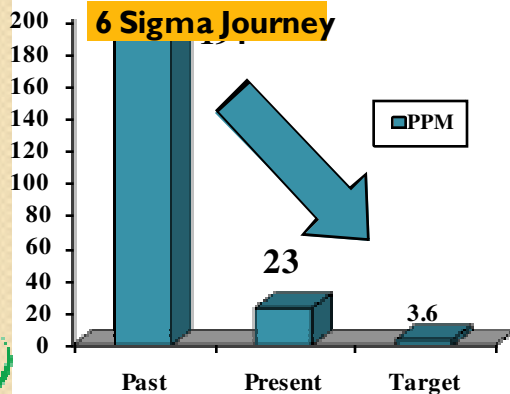
Nalin Rubber has transparent and high working principles of Financial Transparency. Apart from getting our books of account third party audited, we have got our Financial system rated through agencies like SMERA/ CRISIL, NSIC, Nationalized Banks etc.

## ENVIRONMENT COMMITMENTS

Nalin Rubber is committed for Preserving mother nature and complying with environmental standards. The company is complying with ISO-14000 standard and plans to get it certified in recent future. The end products are targeted for RoHS Compliance. The company has been cleared and certified by government / State Pollution Board for all its activities and products. Accomplished projects includes Rain water harvesting, green Plantation garden area, Water & Air Checks and Environmental training to its employees & Families

## QUALITY COMMITMENTS: SIX SIGMA GREEN BELT AWARDED

NRPL is **ISO:9001 & ISO:TS16949 certified company**. Product & Process certification is also taken from Indian Railway Design & Standardization Organization (RDSO), Director General of Quality Assurance (DGQA) of Indian Defense, Tata Motors Limited, TELCON Hitachi and Bureau of Indian Standards (BIS). NRPL team is committed for quality up gradation. Today our supplies are at less than 23 PPM Rejection where the major rejections are below 5 PPM. This is targeted to be reduced to 3.6 PPM or below to achieve 6 Sigma level.



COMMITTED TO QUALITY

# Some Major Appreciation:

## Speedy Development within One Day

Developing critical product (Rubber Channel) on a festive holiday (TISU Puja, 14 Jan 2011) after designing Tool, process and then delivering the Product after testing in just one day when one of the major Customer Tata Motors Limited, Jamshedpur was in crisis was much appreciated. It was a case study of motivated team work with quality consciousness and was published in ACMA ACT Magazine May 2011 Issue. This achievement lead to award and popularity. The feat was again repeated for Hose development.

Similarly Development of Inflatable Seal for Department of Atomic Energy, government of India was much appreciated.



Counselors' Section

### Symbiosis is the key to success

-No man is an island

It all begins with a simple thought - How can we achieve things which are beyond our imagination. The reason I have captioned this short (but true) story of success is to showcase the fact that IM POSSIBLE can be made POSSIBLE just by removing indifference. A change of attitude / work culture will then result in IM Possible as opposed to Impossible.

Knowledge shared is knowledge gained. Someone has rightly said that Knowledge can be gained but wisdom is in applying the knowledge relevantly.

It was on the 14th day of January 2011. The harvest festival was being celebrated across India ... Some call it Pongal, some Makar Sankranti and some Tusu (in Jharkhand State). While every body was busy celebrating and making merry, in a by lane of Gamharah, Jamshedpur at Nalin Rubber for the first time in the History of the company since its inception, the team was busy working in developing a new component just to serve their key customer in the crisis situation. The question now arises - How did a giant like Tata Motors Ltd find itself in this crisis. Surely, them with their production planning and execution capabilities should have been able to resolve this. Finally, the component supplier threw up his hands in saying he could not deliver it on time as all his workers were on holiday.

You're probably wondering how the Nalin Rubber guys were still working. How come they had managed to handle this key challenge of having the plant running and developing a new component? It was only due to the SME Cluster Training, Employee Motivation, Employee Recognition modules that was shared had been implemented to the T. The knowledge was shared but the key differentiator was the wisdom of the CEO of Nalin Rubbers (Mr. Dhyanshu Sinha) to implement the knowledge acquired during the numerous visits of the counsellor and implementing the suggestions from the team.

This is what Mr. Sinha told me, "This morning (14 Jan 2011) we were told that one rubber item 042 725 0021 Rubber Channel, supplied by a company outside



K.P.S. Rajguruji  
Jr. Counselor-ACMA

Finally in the presence of the whole team (more than 15 guys who were directly involved for the product development) the product was produced and tested by 4.30 pm. It is difficult to put in words the sense of achievement and happiness when the product was handed over to me. It was like holding a baby in your hand. I immediately called Mr. Dastidar of Tata Motors (the buyer of this product in Plant 3) who was in Kolkata for this item and confirmed that we are ready with product and he was rather surprised. The product was then sent for fitment.

Jamshedpur (Kolkata) is under crisis and that some TMI official shall have to go out of station for covering this urgency. We were asked if we can develop this item and if yes how fast? There was no taker for this challenge owing to the holiday of Tusu Puja at the time. My marketing team accepted the challenge and brought the sample to

me for discussion that morning. Mr. Akhilesh Mishra (Marketing) explained the urgency to the team at Nalin Rubber. He told the team that this product was not a routine product and that we didn't have the necessary drawings or tools to develop it. We agreed to give it a try anyway. Opportunity can strike at any time. Are we ready to take it and grow? We discussed this problem in the Morning Gemba Visit time. Can we challenge our limits? Can we develop this item in one day? Can we really help Tata Motor Team which provides us opportunity to earn our bread by producing new item in emergency and urgently? The tool man Mr. N. G. Sarkar started immediately and although he had taken a leave after 2 pm (He was supposed to work up to 2 pm only), on his own continued working and completed the tool by 3.30 pm. I was really moved.

At 2.30 pm I was partially visualising that probably we can produce it that day itself and if not, definitely by the next day. So I went ahead and made a quotation and emailed it with confirmation that we will be able to supply it by next day. The team was more confident of their skill than me. The mixing team led by Mr. Anandh Bansa (who is actually from the Dispatch team) & Mr. A. Mishra made the hatch ready while the tool was still under production while Mr. Prashant did the testing equally fast. Microwave oven and Extruder was initiated for production by starting the machine for heat under Mr. P.K. Singh and Mr. S Maurya by 3 pm.

Finally in the presence of the whole team (more than 15 guys who were directly involved for the product development) the product was produced and tested by 4.30 pm. It is difficult to put in words the sense of achievement and happiness when the product was handed over to me. It was like holding a baby in your hand. I immediately called Mr. Dastidar of Tata Motors (the buyer of this product in Plant 3) who was in Kolkata for this item and confirmed that we are ready with product and he was rather surprised. The product was then sent for fitment.

This was all achieved during the acid test period of the Tusu (harvest / pongal ) festival. This is a particularly challenging period and in the past we have had difficulty in procuring supplies and managing resources especially manpower. With guidance from CPT Team and ACMA Cluster Program we started implementing small changes

and have also understood within our team the of total commitment. Infact, since then, we have been able to supply all our orders on time inspite of Durga Puja, Diwali or Chhat festivals.

It is with great pride that I inform you that the plant is running 'Normal' and only guys with pre-allotted leave are absent. The situation, therefore, is totally under control. There is no shortage as the planning and commitment from the team has been excellent. I thank all of you who have helped us realise the strength of teamwork. There are a few more days before Tusu, but what has taken place today makes me comfortable and it is evident, that we as a company have truly evolved."

LJFI is all about symbiotic living where everyone plays their role to make life beautiful. It is similar in the case in our work lives. All we can say is that when the training was imparted the seed of growth was sown in the hearts and minds of the team of Nalin Rubbers and it was well watered by the CEO himself. The fruit of this effort is for everyone to see:

1. Zero shortage in supply i.e. full realisation of purchase order and customer delight
2. Greater involvement of all staff at all levels due to reward and recognition program, thus, leading greater ownership
3. Becoming Opportunity Ready every time, thus leading to 3 new orders (3 new parts developed and delivered) and growing the business

I firmly believe that no man is an island. When we convert knowledge into wisdom, growth is inevitable. I maintain that I am still learning and will continue to do so as long as I live. The day we stop learning is the beginning of the End. The amount of learning and unlearning experience that I have gathered over the past 40 years working at Tata Motors, I have come to this conclusion that - I still have much to learn! I take this opportunity to thank Mr. C. Narasimhan, our Chief Mentor and Mr. Rajive Mandlik Dy. Executive Director without whose guidance it would have not been possible for me to have the zeal and excitement to learn and impart knowledge.

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## Some Major Appreciation:

Silicon and Viton Seals for Blast Furnaces used by Tata Steel in their Blast Furnaces were one of the most crucial and important developments way back in 1990 when they were first designed in India. Later Cold Roll Mills were imported from Japan and Steel industry was facing problems in developing it in India. NRPL was one of the first successful local companies in manufacturing Rubber Rolls for their critical application.

TELCON and their JV Partners JV Partner Hitachi, Jhon Deer and Euclid confided for their Monts & Bushes for Construction Equipment Industry. High Viscosity Fluid filled Vibration Isolator for Cabin Mounting was developed whose adaptation to third world country environment was done by NRPL.

NRPL with the support of DMSRDE (DRDO Lab) was the first in South East Asia to Develop Inflatable Seals to be used in Nuclear Reactor. These seals are successfully working now at IGCAR (Indra Gandhi Center for Atomic Research, Kalpakkam). After the success of Inflatable Seals for DMSRDE, 11 BRD, Indian Air Force provided opportunity to NRPL's Capable Design Team for Design & development of Inflatable Canopy seal for MIG Aircraft. These were very Challenging and prestigious projects.

Supported by BEML, our customer, we developed Rubber Pads for Launcher Vehicles of Prithvi II Missiles, India's most popular missile. These were successfully supplied and still gives a proud feeling to the team.



Our Director & designer Mr. Dibyanshu Sinha, with Dr. RK Singh, Scientist G, Director DMSRDE and Dr. NK Sinha, Chief of Project, IGCAR, Kalpakkam Celebrating India's Success in nuclear Sealing with NRPL

## Some Training sessions for Academics:

Nalin Rubber has been actively involved in training its internal human resource and at the same time has offered its resources to various Indian corporate and academic Institutes to develop and train others in society. We are proud that engineering Graduates and Post graduates have been involved in our R& D Projects as well as productivity programs and other training sessions and have flourished in society in general.

Prestigious Institutes like Indian Institute of Technology, Kharagpur (Rubber Technology Centre) has done joint Research & development through its Master of Technology (M.Tech.) Students on Rubber Moulding at Nalin Rubber, Jamshedpur.

Similarly other Under Graduates and ITI students have been trained on various aspects of Polymer Industry at Nalin Rubber.

### Semi-Automation and validation compression molding machine for rubber and rubber-like materials.

*Thesis submitted in partial fulfillment of the requirements for the degree of*

#### MASTER OF TECHNOLOGY

in  
Rubber Technology

*Submitted by*

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April - 2015



# THANK YOU

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Chairman, **Mr. R.K. Sinha**

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General Manager

Sales & Marketing

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Quality & Design

Accounts

Purchase & Stores

Exports & Offshore Clients

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