

**DELPHI - TVS**

Diesel Systems Limited



Tomorrow's Technology Today



**PLANT - I**  
Mannur, Chennai



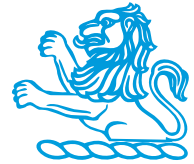
**PLANT - II**  
Pantnagar, Uttarakhand



**PLANT - III**  
Orgadam, Chennai

## Our Philosophy

Harmony between Man & Machine, Man & Nature and Man & God.



## Our Vision & Culture

To be recognised by customers as their best supplier of diesel fuel injection systems, Striving for excellence and exceeding customer's expectations

## The Company

Delphi-TVS, a joint Venture between Delphi USA- One of the World's largest Automotive Systems Tier 1 Supplier and TVS - India's largest Automotive systems Tier1 Supplier, offers State-of-the-Art Diesel Fuel Injection Technology to its Customers in all segments of the Market including Cars, Multi and sports utility vehicle, Commercial Vehicle, Off-Highway, Generators and Industrial Application

We are an ISO/TS 16949 and ISO 14000 certified organization. The company has been Awarded the ACMA Gold Award for Manufacturing Excellence, ACMA Technology Award, Manufacturing Excellence Gold Award from Frost & Sullivan, Delphi Asia Pacific Environmental Excellence Award, The JIPM TPM Excellence Award (First Category) and Lean Manufacturing Award.

A revolutionary, rather than evolutionary, development path was followed in order to realize new levels of functionality to meet customer requirements with total employee involvement

Delphi-TVS has technology access to manufacture Common Rail Systems to meet Euro 4,5 and 6 emission norms for the next generation of diesel fuel technology which promises the engine with more power than the previous diesel engines while consuming less fuel. The corresponding carbon dioxide emission level per kilometer would meet future emission standards.

A state-of-the-art Technical Centre has been set up to enable Delphi-TVS as part of the Delphi's Global Technical Centres to develop applications and products to meet stringent quality and emission requirements of the Automotive Industry.

Delphi-TVS believes that its success is based on the solid foundation of customer satisfaction, technological innovation and continual improvement through total employee involvement.

## Milestones

- 1989 - Start of Project
- 1996 - ISO 9000/EAQF 94/QS 9000 Certification
- 1997 - Exports to Peugeot, France & Ford, UK
- 2001 - Introduction of India's first Electronic FIE system to meet BS III Emission norms
- 2003 - ISO 14001 – Environment Certification
- 2004 - 1,000,000 FIE Systems production crossed  
- ISO/TS 16949 Certification  
- Supply of Fuel Injection Pumps to Perkins U.K
- 2005 - Commence manufacturing of Common Rail: Filters, Rails & Sedimenters
- 2006 - Establishment of state – of-the-art Technical Centre
- 2007 - Plant II established at Uttarakhand
- 2008 - Plant III established for Common Rail Systems at Oragadam, Chennai.
- 2009 - 2,000,000 FIE System production crossed



## Awards and Recognition



**ACMA Gold Award**  
Manufacturing Excellence 2006



**Frost & Sullivan**  
IMEA Gold Award 2004



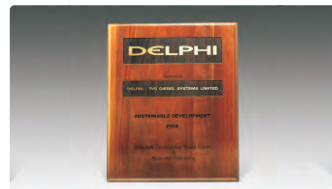
**TPM Excellence**  
Award - First Category 2006



**ACMA Excellence in Technology**  
Certificate of Merit 2004



**SAE Environmental**  
Excellence in Transportation 2004



**Delphi Global**  
Environment Award 2004



**Delphi Asia Pacific**  
Environmental Award 2006

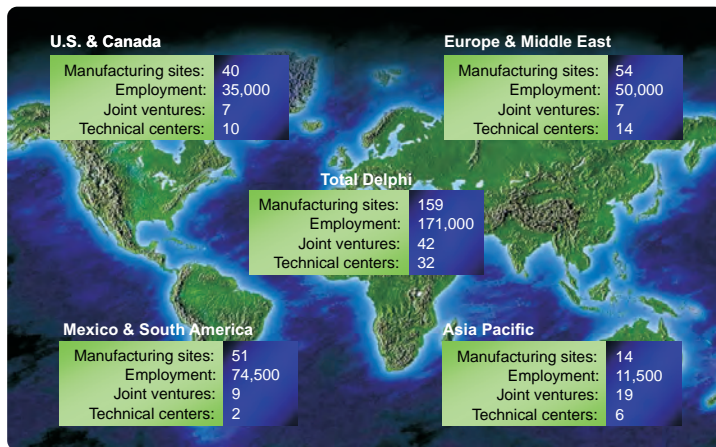


**Quality Circle Convention**  
2005



**Alliance India**  
Lean Manufacturing Award 2009

## Delphi Corporation



Delphi is the leading global supplier of mobile electronics and transportation systems including power train, Safety, Steering, Thermal and controls & security systems electrical architecture and in - car entertainment technologies. It has global manufacturing foot prints strategically

located to support their customers, Delphi has approximately 171,000 employees including 17,000 Scientists & Engineers and operate 159 wholly owned manufacturing sites , 42 joints ventures, 56 customers centres, and sales offices and, 32 technical centers in 34 countries

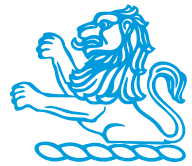
## TVS Group



TVS Group, India's leading supplier of automotive components, was established in 1911 today it has grown to more than 35 companies and employs a workforce of over 40,000 with a turnover exceeding US\$ 5.00 billion.

TVS Group has firmly focused on customers satisfaction. Underlying the success of the group is its philosophy of commitment to Quality, Service, Reliability and Ethics.

At present, all the group companies have obtained ISO 9000/QS9000 or TS16949 certifications. Five companies in TVS group have prestigious Deming Award and six companies have received the TPM excellence Award.



## Product Profile

Capability for Euro III, Euro IV and Euro V emission norms



Medium Duty Common Rail



Light Duty Common Rail



ECU



Unit Pump Common Rail

Capability upto Euro III / Euro IV emission norms



DPCN



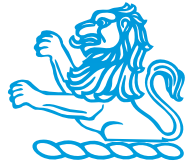
DP310



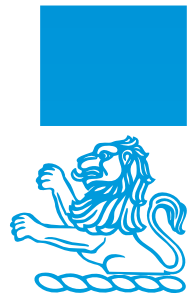
DPT



Dual Filter



## Customers



## Vehicle Profile



LTV



Cars



Tractor



Multi Utility Vehicle



Off Highway



Sports Utility Vehicle



LCV



Engines



HCV

## Technical Center



To meet the Indian OEM development requirement for short lead time, cost effective Engineering capability, Delphi TVS has setup a Technical Centre and invested extensively on facilities which include Chassis dynamometer with emission measurement, Engine test cell with raw emission measurement,

Fuel system performance test rig, Common Rail Pump & Injector calibrating rigs, Endurance test rigs, Environment test equipment and a CAD system to highlight a few facilities at Delphi- TVS Technical Centre which develops products and applications to meet customer requirement and emission regulations, This Technical Centre has access to Delphi technologies from across the globe to offer appropriate solutions.



## Tech Centre Facilities



Chassis Dynamometer Test Cell



Engine Testing Dynamometer



Engine and Emission Test Facilities



Anti- Fretting Test Machine



CR Test Facility



ECU Development Facility



## Manufacturing Technologies



Delphi-TVS has produced common rail and rotary fuel injection equipment at world-class quality levels for high variety low volume at competitive costs. Diesel Fuel Injection Equipment manufacturing demands sub micron technologies in a mass production environment and is therefore highly capital intensive. To meet these challenges

the focus is on employing state-of-the-art manufacturing techniques, flexible plant, in house heat treatment, SPMs manufacturing capability to meet the stringent requirements for fuel injection and robust manufacturing processes which include thermal energy deburring, precision creep feed grinding, high precision honing, internal and external grinding, Delphi-TVS has designed its manufacturing systems based on world class manufacturing concept such as Lean Manufacturing through value Stream Mapping, TPM and Delphi Manufacturing System. Delphi-TVS aims to create an ideal plant where and machines work together to deliver high quality on time to the customers.

## Manufacturing Facilities



CR HP Pump Assembly



CR Injector Testing



CR Filter Assembly



Heat Treatment Plant



Robotic Machines



Nozzle Assembly



## Quality Assurance



Quality is the key customer satisfaction and Delphi-TVS focuses on a pro-active approach in identifying and meeting customer needs. our continual improvement a programme makes extensive use of quality circles and employees' Ideas thereby making quality improvement a process in which every employee is involved. Delphi

TVS practices techniques like APQP, FMEA, SPC, Process Capability Monitoring, Poka-Yoke to ensure first time Quality and Guarantee continued customers satisfaction.

Delphi-TVS has obtained ISO-9001, EAQF-94, QS9000, and ISO/TS 16949 certifications

## Quality Standards Facilities



Heat Treatment Standard Room



Material Test Cell



Quality Assurance Cell



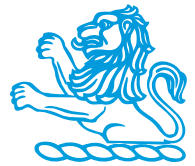
Quality Standard Room



Heat Treatment QA Cell



CR Standard Room



## After Market Service



Delphi-TVS' commitment towards customer satisfaction is highlighted by its extensive service and distribution network. These include the service centres of Lucas Indian Service, TVS group companies and numerous authorized dealers spread across the country. LIS currently has more than 210 dedicated services centres while in the overseas market Delphi-TVS receives service support for its products from the Delphi Diesel After-market network.

## Commitment to Health, Safety and Environment

Delphi-TVS recognises its responsibility to safeguard the society in which we live, We are fully committed to protecting human health, natural resources and the environment, both in our manufacturing process and in the products we develop . We believe all occupational injuries are preventable and we are dedicated to maintaining a healthy, risk- free work environment.

Delphi-TVS places importance on community ties and supports various kinds of activities. Many of our service activities that strengthen our local ties and contribute to the betterment of local community life.

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**Plant: 3**

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