



Press Release

Revolutionary MaxxForce® engine to power Mahindra Navistar trucks

Performance, reliability & fuel economy are hallmarks of this world renowned engine

December 7, 2009, Mumbai: Dr. Pawan Goenka, President, Automotive Sector, Mahindra & Mahindra Ltd. and Mr. Dee Kapur, President, Navistar Truck Group, USA, today unveiled the world renowned, technologically advanced MaxxForce® 7.2 diesel engine in Mumbai. The introduction of this engine is the result of the partnership between M&M and Navistar, which have formed joint ventures to manufacture engines and trucks in India. The MaxxForce® engines features the most contemporary and state-of-the-art engine technology.

MaxxForce® 7.2 diesel engine, the most modern engine in its class, will power Mahindra Navistar's new range of M & HCV trucks and buses which will be introduced in the Indian market in the coming months.

The MaxxForce® 7.2 engines will be manufactured at a state-of-the-art engine manufacturing plant at Chakan in Maharashtra. The plant will be spread across 23 acres of land and is equipped for serial production of medium speed diesel engines.

"The MaxxForce® 7.2 engine is known the world over as a high performance, reliable and fuel efficient engine and it is now all set to redefine the M & HCV (Medium & Heavy Commercial Vehicles) segment in India. The engine has been designed for rugged operating environments and modified substantially for Indian truck requirements which will make it the driving force behind our forthcoming range of M & HCV Trucks. Mahindra & Mahindra has always been at the forefront of technological innovation and by partnering with Navistar Inc., the world leader in diesel engine technology, we are well positioned to revolutionise the trucking business in India," said **Dr. Pawan Goenka, President Automotive Sector, Mahindra & Mahindra Ltd.**

"I am delighted to introduce the MaxxForce® brand of engines, which power the world's best trucks, to the Indian market. With its outstanding performance and low cost of ownership, I am sure that the MaxxForce® 7.2 diesel engine will enjoy the same equity in India, as it does across the globe. We are also pleased to extend our association with Mahindra which is one of India's leading auto brands," said **Mr. Dee Kapur, President, Navistar Truck Group, USA.**

In 2005, Mahindra & Mahindra Ltd. and International Truck and Engine Corporation - the operating company of Navistar - entered into a JV to manufacture light, medium and heavy commercial vehicles for India as well as export markets. The Joint venture is in the process of addressing every segment of the commercial vehicle market from 3.5 tonne GVW to 49 tonne GVW with variants of passenger transport, cargo and specialized load applications. Mahindra Navistar aims to expand its product line over the next two years to emerge as a full range commercial vehicle player.

About the MaxxForce® 7.2 diesel engine

The MaxxForce® 7.2 diesel engine is a 7.2 litre in-line six cylinder diesel engine and will bring new levels of power, reliability and fuel efficiency to on-highway heavy commercial vehicles in India. It is, in fact, the most modern engine in its class in terms of product configuration as well as components technology for the HCV segment in India. With the 4-valve per cylinder technology, the engine has been designed for better performance, higher power, better fuel efficiency and stricter adherence to emission standards.

The engine features both, a mechanical injection system with a Bosch Rotary pump, as well as a high-pressure 1800 bar common-rail fuel injection system. This ensures outstanding fuel economy, performance and durability. The MaxxForce® 7.2 diesel engine to be produced in India is also fully compliant with BS III and BS IV emissions standards.



The new MaxxForce® 7.2 is positioned to outperform the competition in three distinct areas- Performance, Reliability and Fuel Economy:

Performance

- The Engine delivers maximum power of 210 hp @ 2200 rpm. Other versions of the engine in higher and lower capacities will be launched in due course.
- With the max torque of 880 N-m at a low speed of 1200-1400 rpm, the engines provide superior lugging power with minimum gear changes, even on steep gradients.
- The turbo with charge-air cooler is tuned to reduce noise, improve fuel economy and make MaxxForce 7.2-powered vehicles responsive and driver friendly.
- The combustion technology with a 4-valve per cylinder and optimized fuel injection system helps in achieving stringent BS III emissions without any after treatment.

Reliability

- The MaxxForce® 7.2 has been extensively tested both in Brazil as well as India.
- It has also been tested on trucks in various geographic and climatic conditions across India. This has resulted in 15,000 plus hours of engine testing and 1 million kms of development and validation on Indian Roads.
- Directed piston cooling jets and gallery-cooled pistons help achieve maximum durability and reliability and assure outstanding power and engine life.

Fuel Economy

The MaxxForce® 7.2 offers unparalleled fuel economy, despite providing excellent drivability and performance, with impressive low end torque.

Key Specifications

| Specifications | 6.12 TCA |
|--------------------------------|---------------------|
| Emission | BS III |
| Configuration | 6 Cylinder, In line |
| Valves/Cylinder | 4 |
| Displacement (cc) | 7118 |
| Bore (mm) | 105 |
| Stroke (mm) | 137 |
| Combustion System | Direct Injection |
| Injection System | VE Mechanical |
| Aspiration | Turbo Intercooler |
| Max Power Output Kw (hp) @ rpm | 157 (210) @2200 |
| Peak Torque N-m @rpm | 880@1400 |
| Compression Ratio | 16.1:1 |

Ease of maintenance

- The uniquely designed individual cylinder head ensures maintenance and repair cost is minimized.
- The steel cylinder head gasket is modular and has a long life, with low replacement cost and ease of service.
- The wet liner design ensures minimum replacement cost for liners
- The water pump is driven by the engine gear train instead of the belt, allowing trouble free operation. It also avoids chances of engine seizure due to belt failure.



About Mahindra Navistar Automotives Ltd. (MNAL)

Mahindra Navistar Automotives Ltd. (MNAL) is a Joint Venture between Mahindra & Mahindra Ltd. (M&M) and Navistar Inc. USA, North America's largest combined commercial truck, school bus and mid-range diesel engine manufacturer.

The JV would manufacture the entire spectrum of commercial vehicles (including Trucks and Buses) from 3.5 tonne GVW to 49 tonne GVW. The new product range will be engineered to meet Indian requirements with the technological support of Navistar.

The new range would be manufactured at M&M's new Greenfield Plant at Chakan, near Pune, which is spread across over 700 acres and has been set up with investments of over Rs. 4,000 crore.

About Mahindra Navistar Engines Pvt Ltd. (MNEPL)

Mahindra Navistar Engines Pvt Ltd. (MNEPL) is a joint venture between Mahindra & Mahindra (M&M) and Navistar. The joint venture was formed to produce diesel engines for medium and heavy commercial trucks and buses in India.

The new company's advanced diesel engines will power the full line of trucks and buses produced by the preceding JV, Mahindra Navistar Automotives Ltd. Engine components will be sourced locally, going up to 95 percent within two years, due to the strong availability of quality parts and materials from Indian suppliers.

With a state-of-the-art product line-up of advanced engines, MNEPL has progressive and cutting-edge technology to power this array of products.

With stringent emission norms introduced across the globe, MNEPL products are geared for the future through a range of technologies.