

Published based on [Details Of Tata Motors 2.2L VTT DICOR Engine](#)

Details Of Tata Motors 2.2L VTT DICOR Engine



The 2.2L VTT DICOR engine used in the Sumo Grande, Xenon and Safari was made by Tata Motors in collaboration with AVL. The engine has a interesting characteristics and is one of the best diesel engine made by a Indian car manufacturer. The engine validation has been done in Spain for high altitude & high temperature and for low temperature and high altitude validation at Switzerland at an ambient temp of -20 degree. The engine is manufactured using all non hazardous components like hexavalent chromium free components, asbestos free gaskets etc which meets European standards.

Agencies involved in development :-

- AVL Austria - Engine Design & Development Consulting
- Mandle & berger - Product ionisation of Alluminium Alloy Cylinder head casting consulting
- Delphi - Fuel Injection Management Consulting

Name of suppliers for :-

- Block - Tata Motors Ltd - Designed in consultation with AVL
- Head - Tata Motors Ltd - Designed in consultation with AVL
- Valves - Engine Valves Ltd
- Crankshaft - Bharat Forge
- Common rail system - Delphi
- Variable turbo - Garrett - Honeywell

- Air filters - Mahale air filters

Features of the 2.2 VTT Dicor Engine : -

- Fuel economy & emission optimized at source
- Low engine friction inline with contemporary diesel engines
- Closed loop low inertia turbocharger
- Faster engine warm up
- Close coupled oxidation catalytic convertor
- Lower engine out emission
- Optimized light weight engine
- Aluminum cylinder head
- Engine components optimized for weight using FEA
- Superior material for high strength with lower weight

This engine design has some special characteristics like spherical skirt for better stiffness, symmetrical cyl block design to reduce bore distortion, timing belt driven valve train with auto tensioner, ECU controlled glow plugs for quicker engine warmup, specially design cutter bearings onupper side of connecting rod to take care of the load, vertical injectors, optimized cyl head swirl & combustion chamber for better combustion & high performance and low fuel consumption, anti-oscillation strategy logic to control jerks during sudden acceleration, engine & vehicle speed mapping 7 adjustment for better driving performance, knock sensor for accelerometer pilot control strategy, Multilayer cyl head gasket made of steel alloy, DLC coated high pressure pump to take care of contaminated fuel effect. The engine has also been limited for unsafe condition like over heat protection, maximum vehicle speed limitation, etc.

You can also find this article published on [Details Of Tata Motors 2.2L VTT DICOR Engine](#), and on the tag pages [Tata](#).