



YANTRIX TECHNOLOGIES PVT. LTD.



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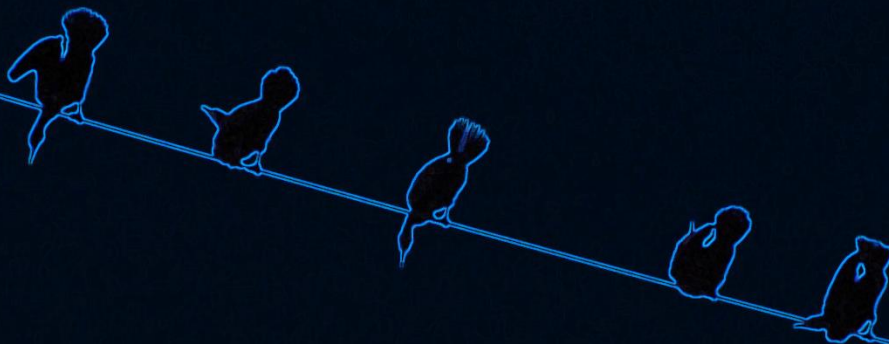
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<https://www.linkedin.com/company/yantrix-tech>

About us

Yantrix Technologies is a synonym for better engineering methods and solutions. We always thrive to understand our customer's problems, solve them and help them realize.

We are a team of mechanical professionals with deep experience in automotive product development. We have helped our customers to optimize the product cost, aesthetics, performance and structural durability.



Our Resources and Customers

Resources		
Department	# No. of employees	Expertise (37 Technical, 3 Management)
CAD	17	Plastic, Sheet metal, wiring, DFA, DFM
CAE/ CFD	15	Static, Thermal, Freq. response, Vibrations, Fatigue, Optimization
IoT	2	Controller, remote actuations, App development
Testing	3	Vehicle field testing, correlation activities
Admin	3	Legal, accounts, BD etc

X

Australia



Europe



Africa



India



Our services

We have expertise in automotive product development cycle and product lifecycle management.

We have industry best methodologies and processes for structural component development.

We have deep understanding of -

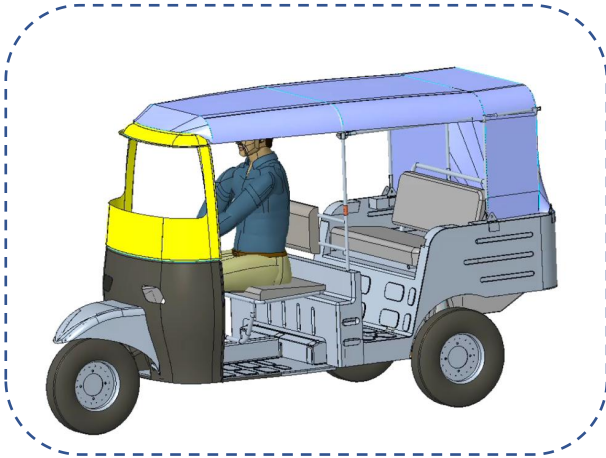
- ✓ CAD and manufacturing drawings
- ✓ Plastic design and molding
- ✓ IoT and electronics for automotive
- ✓ EV battery optimization
- ✓ Design for manufacturing & assembly
- ✓ FEM (Finite Element Analysis)
- ✓ CAE (Computer Aided Engineering)
- ✓ Structural fatigue analysis
- ✓ Durability analysis
- ✓ CFD analysis and thermal
- ✓ Dynamic simulations
 - ✓ Road load analysis for vehicles
 - ✓ Structural vibrations
 - ✓ Dynamic Motion study
 - ✓ Heat and fluid dynamics
 - ✓ Impact and crash

In simple words - we know physics!

- ✓ Mentoring services for process and methodology development in vehicle test & validation cycle.
- ✓ Physical Testing support and test data post-processing.
- ✓ Support in bearing selection, suspension spring and damper selection
- ✓ Support to optimize the product cost, aesthetics, performance and structural durability.

Our capabilities

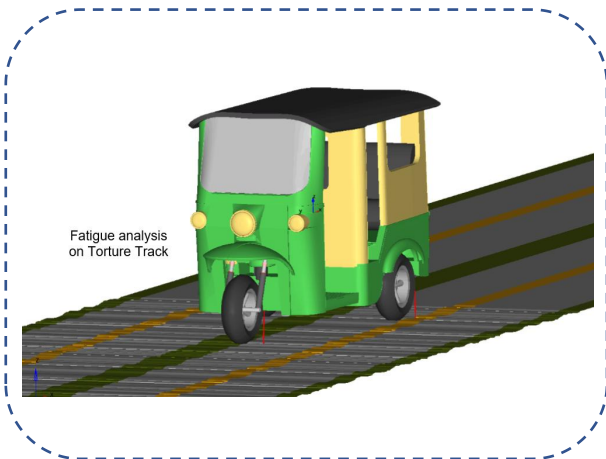
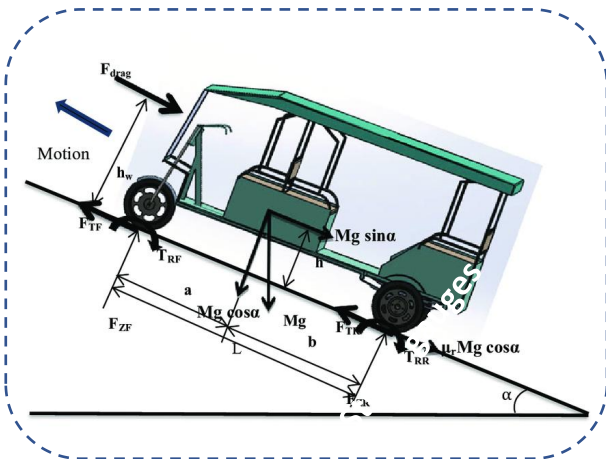
2, 3 & 4 wheeler vehicle design



3 & 4-wheeler CAD development. Yantrix has full vehicle level design capabilities for BIW and chassis components including packaging constraints.



Schematic and force evaluation. Forces can be extracted using thumb rule calculations and MBD motion study.



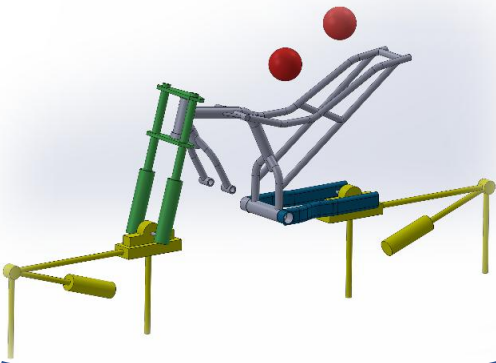
Multi body dynamics and fatigue evaluation of the chassis. Yantrix has scanned road profiles from VRDE and NATRAX tracks. Using road load analysis, precise prediction of the life of the vehicle is possible in durability domain.



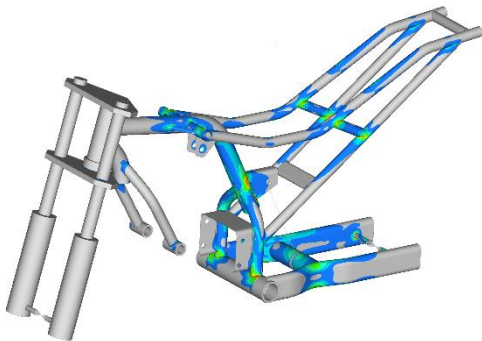
Our capabilities

Vehicle testing and validation

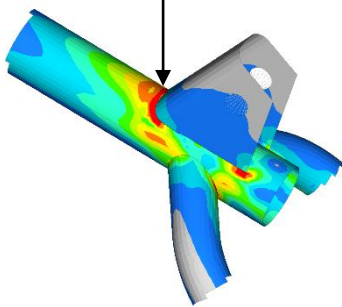
CAD model of motorcycle



CAE analysis results



Failure prone area



Full vehicle virtual test rig

Two poster test rig is used by only handful of leaders in auto industry.

We have strong holding in simulating the real-life behavior of the structure in virtual world. i.e., computer simulations.

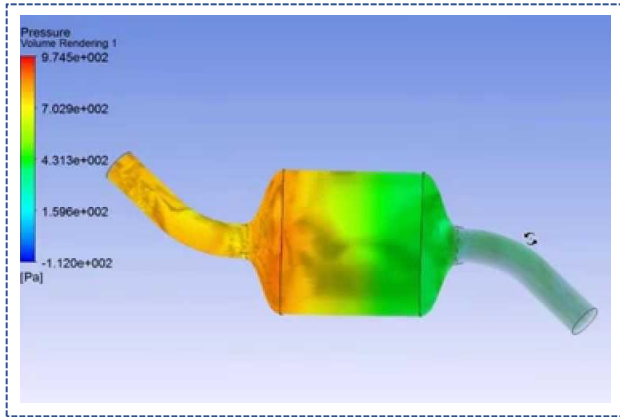
In the lead time of 1 vehicle's test plan, we can test 10-15 concepts virtually.

Faster hot spots (failure zones) identification in the early stage of structural development is possible due to advancements in CAE techniques. Hence we help our customers to improve their designs using computer simulation, without even prototyping or testing. This leads to exorbitant savings in cost and time.

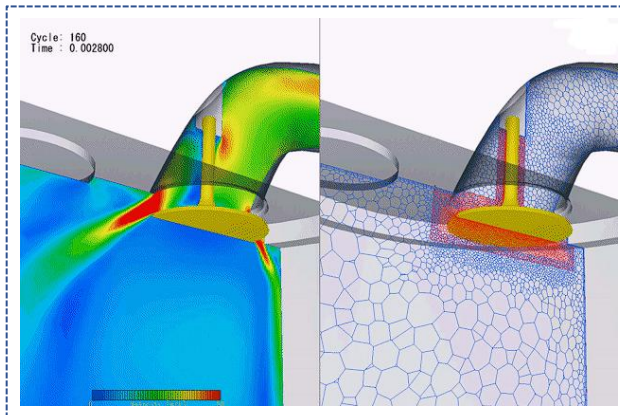


Our capabilities

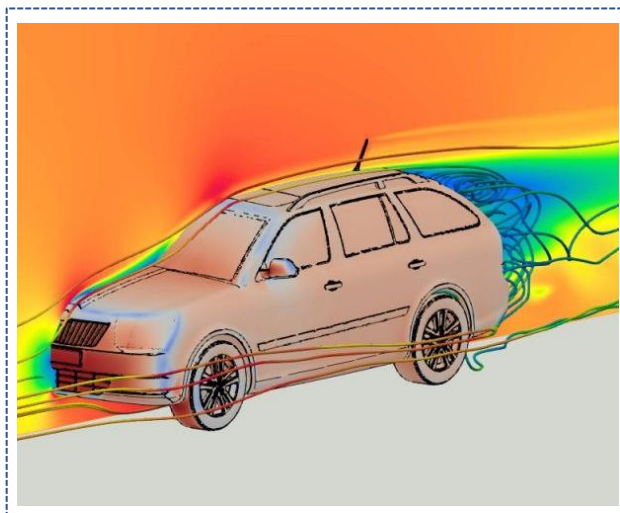
Thermal and CFD



Exhaust system CFD and thermal analysis



Air intake dynamics near the intake valve of the IC engine



CFD air flow analysis to understand aerodynamic characteristics of the automotive structure



Our capabilities

Seismic & Wind Analysis

Modal & Response spectrum analysis are carried out in Seismic analysis of Skid structure.

Applied wind pressure on Skid structure surfaces normal to wind +XY direction

Gravity loadings also included in this wind loading analysis.

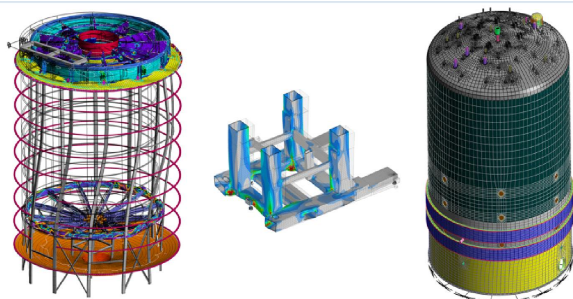
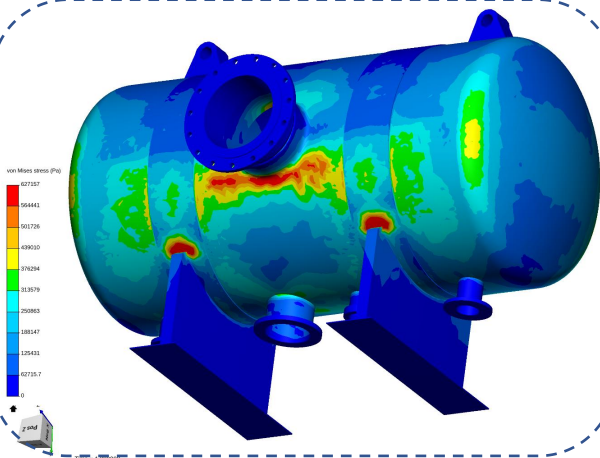
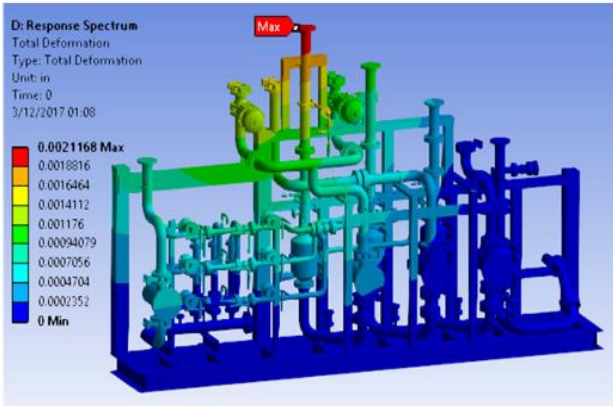
Fatigue Analysis of Pressure Vessel.

The fatigue life curves used under ASME VIII-2 to calculate the permitted cycle life of a vessel are based on a large factor of safety compared with actual cycle life curves. We are using VIII-2 fatigue methods to calculate an allowable number of operating cycles with a factor of safety

3rd image

Vibration Analysis of Structures

-Seismic Response Spectrum Analysis for Industrial Dryer, ASME Pressure Vessels.



Our capabilities

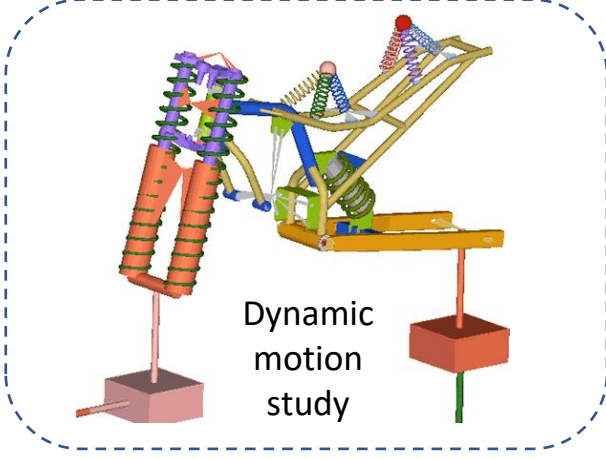
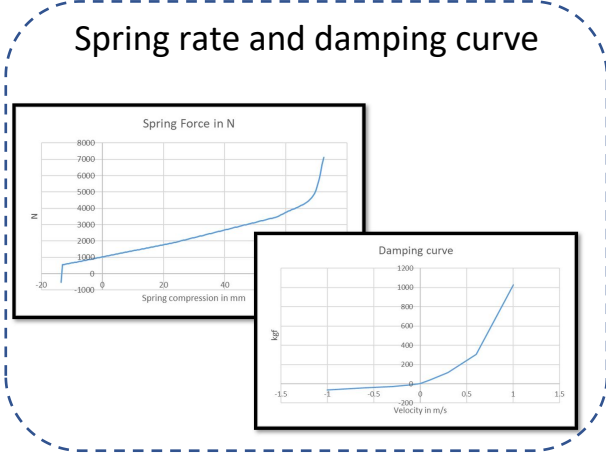
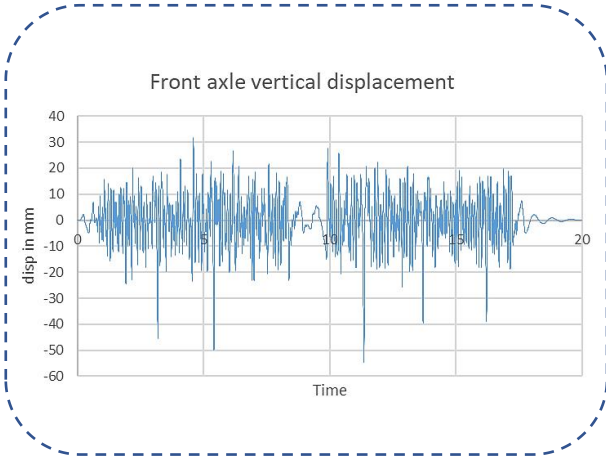
Vehicle testing and validation

We have experience with real time test data of 2-wheeler vehicles e.g., EVs, mopeds, 100cc commuter bikes, 200 cc onwards performance bikes.

We have deep understanding of various Suspension systems.

Yantrix has extensive inbuilt library **(20+ vehicles)** for various road load data, spring rates, tire models. Hence, we can definitely start soft validation of any vehicle without actual testing.

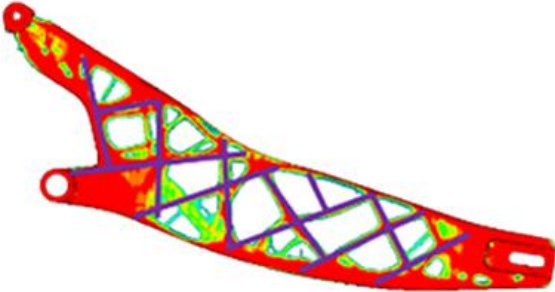
Dynamic motion study helps the design team to understand the motion trajectories of various parts. It helps to understand the inter-relationship of various parts of the whole system.



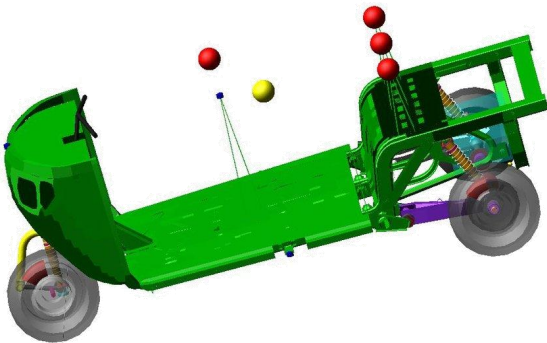
Our capabilities

Vehicle testing and validation

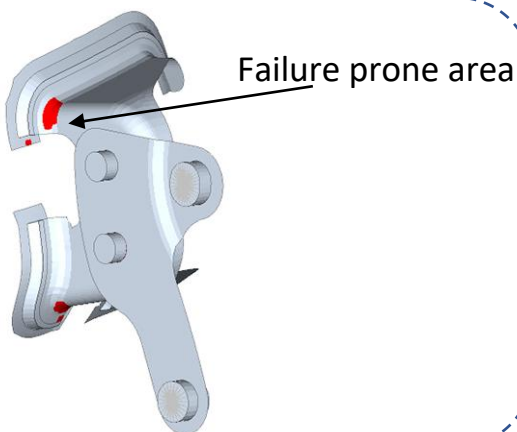
Weight optimized suspension arm



Removing unwanted material to save weight and cost while maintaining the max stiffness of structure. Such projects have a target to achieve best structural stiffness against minimum weight for sports-oriented usage of motorcycle. This allows vehicle to do agile maneuvers with quick response time.



2nd image is an auto rickshaw MBD model for road load data analysis.



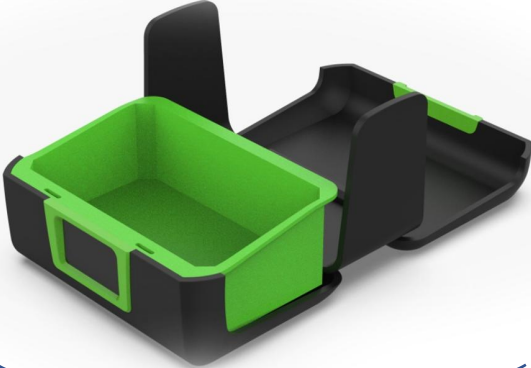
Fatigue life prediction and early identification of hot spots is part of our expertise. 3rd image represents Excavation machinery loading arm support bracket. This design is optimized for max load carrying capacity with long fatigue life. (designed for approx. 15 years).



Our capabilities

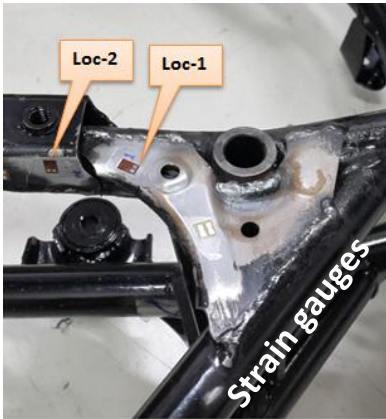
Vehicle testing and validation

Plastic Injection molding



We have experience in design and validation of plastic components, injection molding for various applications.

We have capabilities to predict fatigue failure of plastic components in early stage of product development.



Use of strain gauges and LVDT instruments is part of our expertise. We have extensive experience in testing and correlation with FEA models.



We have witnessed numerous test failures (**50+ tests**) in the testing and provided solutions to address the issues from our clients.



Yantrix

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Australia



Europe



Africa



India



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