CEAD™

Conceptual Engineering and Analysis based Design

$F=P*(PI/4)*(2*D^2-d^2)*10$

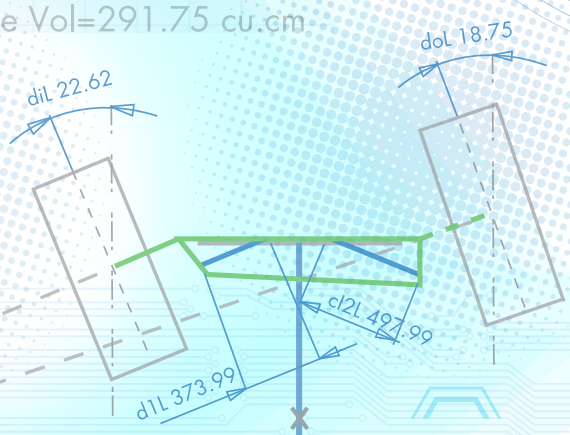
$V=(PI/4)*(2*D^2-d^2)*stroke*0.1$

V=Stroke Vol=291.75 cu.cm

Turning Radius=5820.51 mm

stroke = cl2L - Cl1L

Cylinder Stroke=123.99 mm



Checking Ackermann Condition
cot(doL)-cot(diL)=0.54
Axle/WheelBase=0.54

$ML=0.05*Gs*B/200$

$F=ML/(r*0.001)$

CADVision™

Product Development has never been more challenging:

In today's economy, businesses seek to develop product portfolios faster, cheaper, with fewer design iterations at higher quality. Currently, product development processes manage conceptual design, engineering calculations, CAD, CAE and physical prototype phases linearly, with each successive phase requiring more time stretching the time to market.

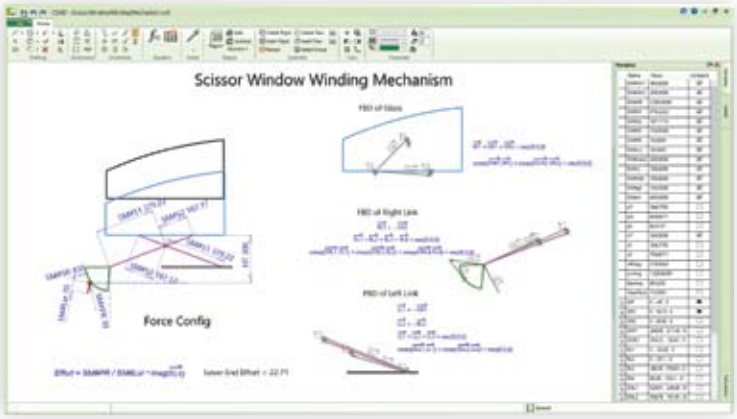
Constraint Driven Engineering Design Synthesis:

A Smarter Product Development Process

Constraint Driven Engineering Design Synthesis methodology innovates on the traditional bottom up product development by applying engineering constraints at the conceptual design stage whereby, shape, form, fit are a "consequence" of functional constraints. This integrates mathematical equations with 2D conceptual geometry creation capability resulting in a qualitatively superior solution.

Conceptual Engineering and Analysis based Design

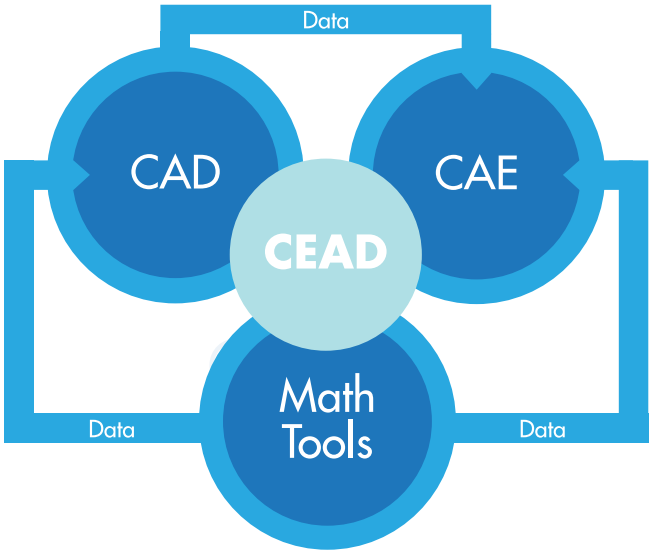
Keeping in mind limitations of current tools CADVision Engineers began a grounds-up approach to developing a new solution to support the Constraint Driven Engineering Design Synthesis methodology. The result was CEAD, an integrated product design environment enabling preliminary hand sketches to conceptual CAE. This provides a rational design foundation for a more time-intensive CAD and CAE later in the product development cycle.



The key features that make this possible are

1. With geometry and math concurrently described on the design canvas, CEAD enables engineers to intertwine any set of mathematically consistent engineering constraints to the design even if they belong to different domains of physics.
2. CEAD has tools to perform multi-objective optimization.
3. CEAD enables first cut analysis of forces, torque stresses, etc using vector mechanics.
4. Simulation functionality in CEAD enables engineers to see deep into the product development cycle, be it in manufacturing or machine performance.

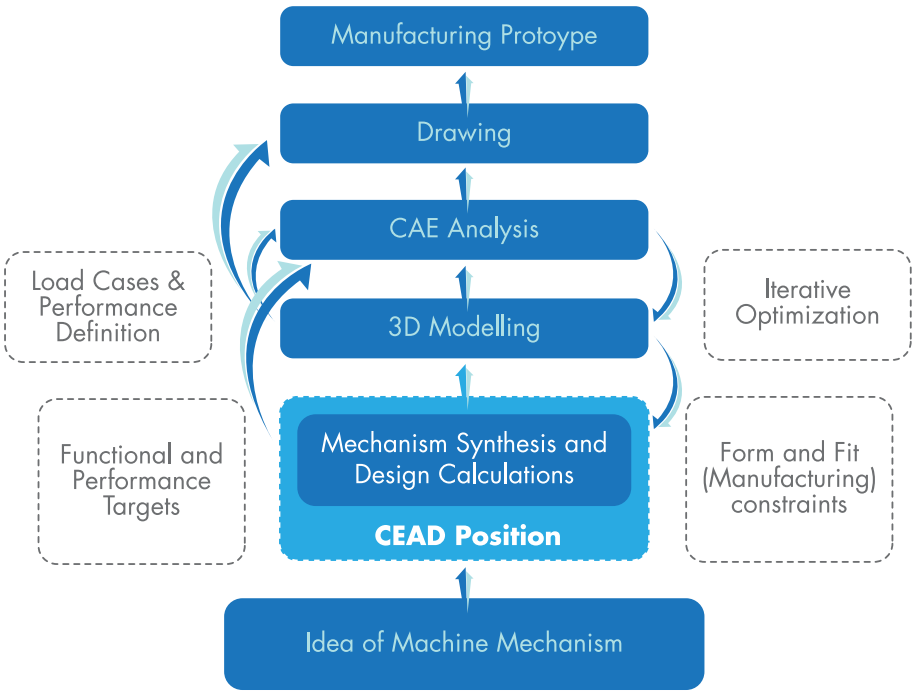
CEAD with other Engineering Software Tools



Feature Map in Comparison to current CAD/CAE & Math Tools.

CEAD in the Design Cycle

In the design cycle, CEAD is the first bare-bones tool that an engineer would use to simulate and capture the mechanics of motion, play of forces or plot trends of parameter to iteratively arrive at an optimal design that truly reflects the integrated reality of imposed constraints.



CEAD's position in the product development cycle

Key features

- Tools for geometric design along with constraints (geometric, dimensional and equation)
- Area and moments optimization
- Mulit-variable Simulation of mechanisms
- Optimization
- Force Calculations using Vectors
- Exporting the design to Solidworks
- Integration with Excel for further analysis

Benefits of CEAD

- Reduced design cycle time hence faster time to market
- Evaluate more concepts early in design cycle
- High quality and efficient design.

System Requirements

- Windows 8 / Windows 7 (32 or 64-bit)
- .Net Framework 4
- 1.8 GHz Processor or more
- 2 GB RAM (4 GB recommended with 64 bit systems)
- 3 button mouse with scroll

About CADVision Engineers:

CADVision Engineers, a provider of engineering software products & services, is committed to building software products that are easy to use, effective and designed for engineers to efficiently resolve engineering challenges. The company operates high in the value chain as a strategic partner and solution provider, and is based in Hyderabad, India. CADVision Engineers is one of the few Indian IT firms to develop, test and bring to market engineering software products for the Indian & Global Markets.

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