

# KOLABORASI KERJA DIGITAL

Dengan Model Desain 2D & 3D

Harris Resort Waterfront

**BATAM** FULLDAY EVENT

**21 JULI**

09:00 SAMPAI 16:00 WIB



**Kamal Rudzaman**

Solution Engineer



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**Specialization**

Product Design &  
Manufacturing  
Government  
Architecture, Engineering &  
Construction

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**Value Added Services**

Authorized Training Center  
Authorized Certification  
Center

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Business risk & volatility

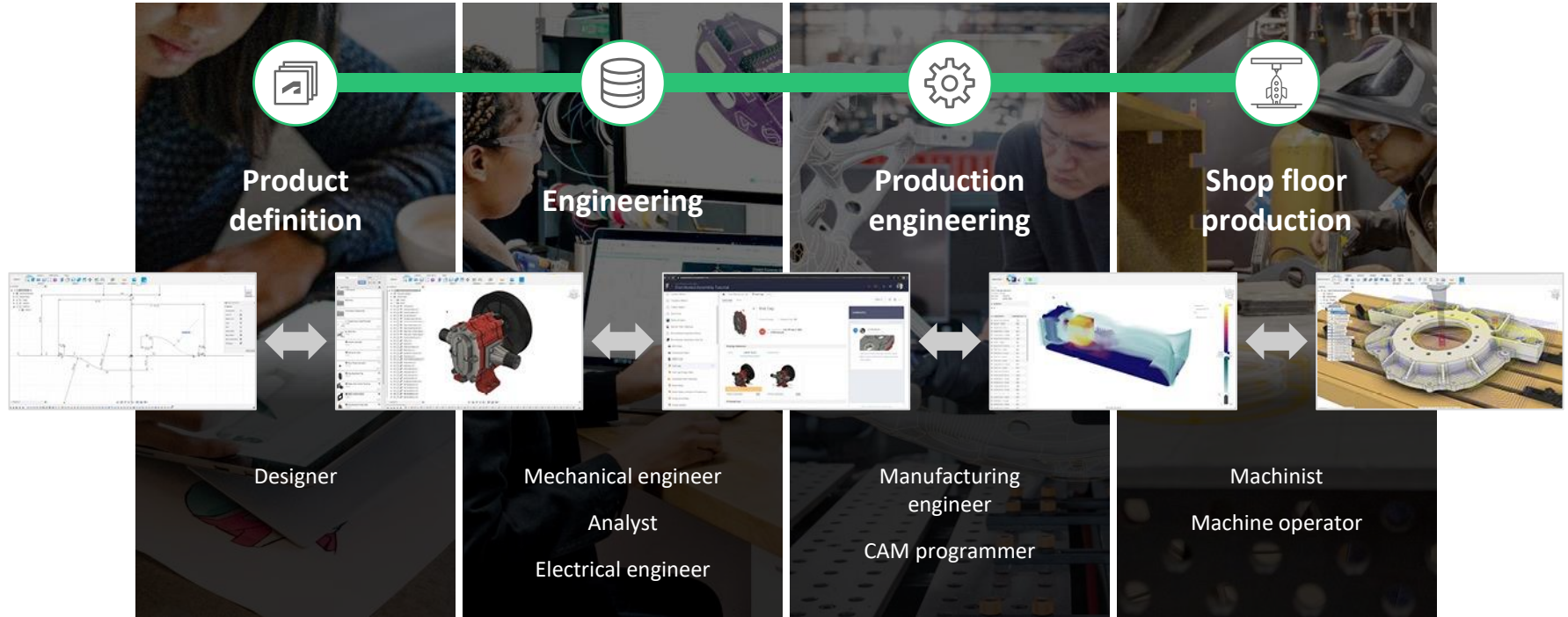


Increasing costs

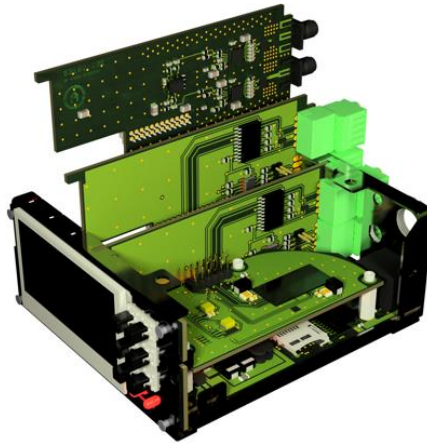


Productivity, anywhere

# Solutions for complete product development process



# Complements other software solutions



**F** AUTODESK®  
FEATURECAM®

**M** AUTODESK®  
MOLDFLOW®

**N** AUTODESK®  
NETFABB®

**F** AUTODESK®  
FUSION 360™

**I** AUTODESK®  
INVENTOR®

# Industrial Designer

## True hybrid design application

- 1 Rapid concept development (sub-divisional)
- 2 Parametric curve-based surfacing tools
- 3 Reverse engineering tools
- 4 Photo-realistic renderings & prototyping
- 5 Collaborate anywhere at anytime



The best thing about Fusion 360 for me is you can integrate different modeling styles.”

**Matt Johnson,**  
Industrial Designer  
**Steelcase**



# Autodesk Fusion 360: design & engineering

Comprehensive modeling tools



Surface

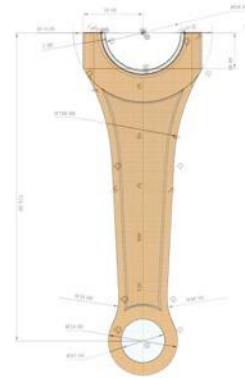


Sheet Metal



Freeform

Mesh



Parametric

# Concept development

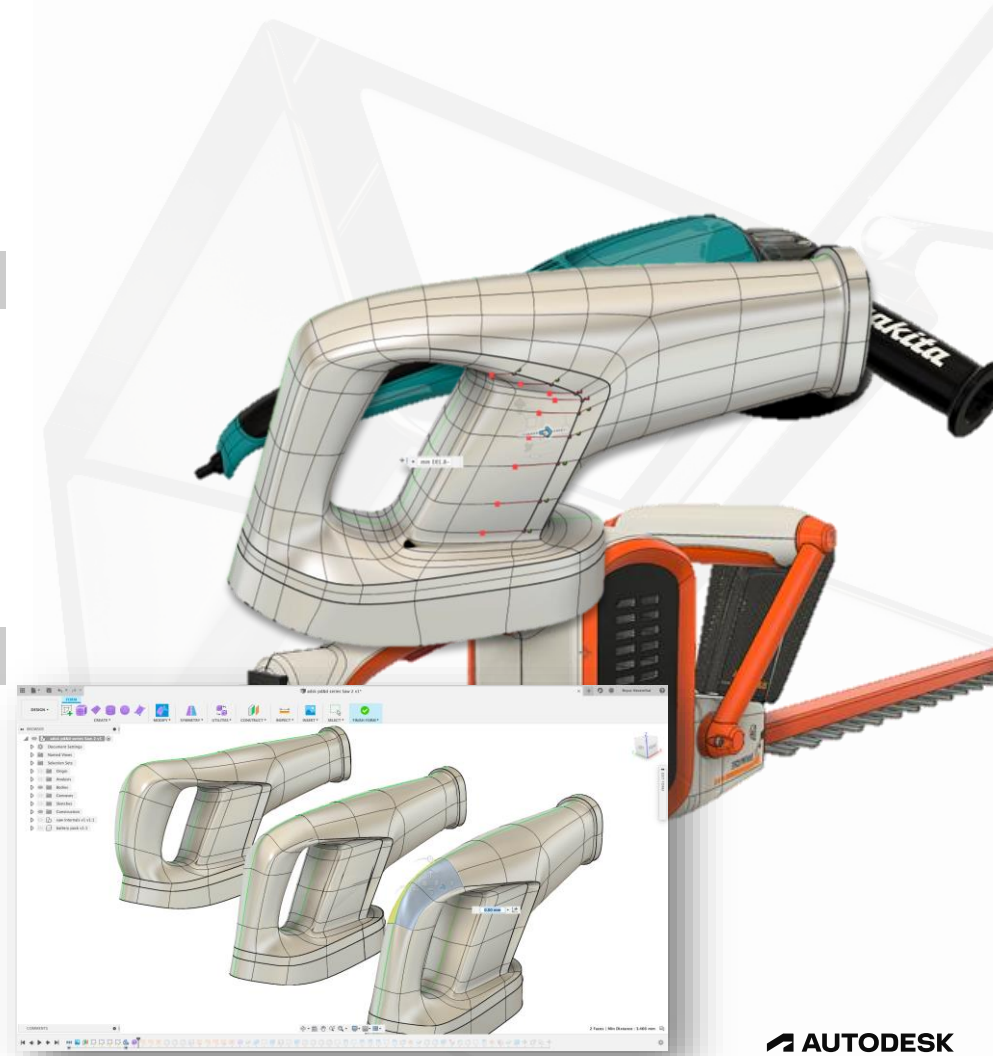
## Freeform modelling

### Benefits

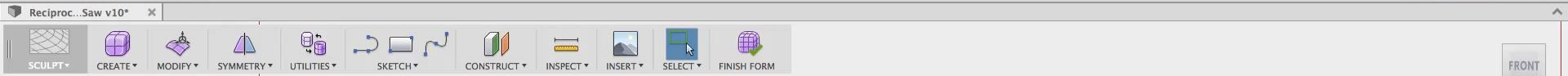
- Reduce design time
- Easily create complex surfaces
- Rapid ideation
- Increase innovation capacity

### Capabilities

- Sub-divisional modeling
- Manipulate with push-pull gestures
- Edit faces, edges and points
- T-splines technology



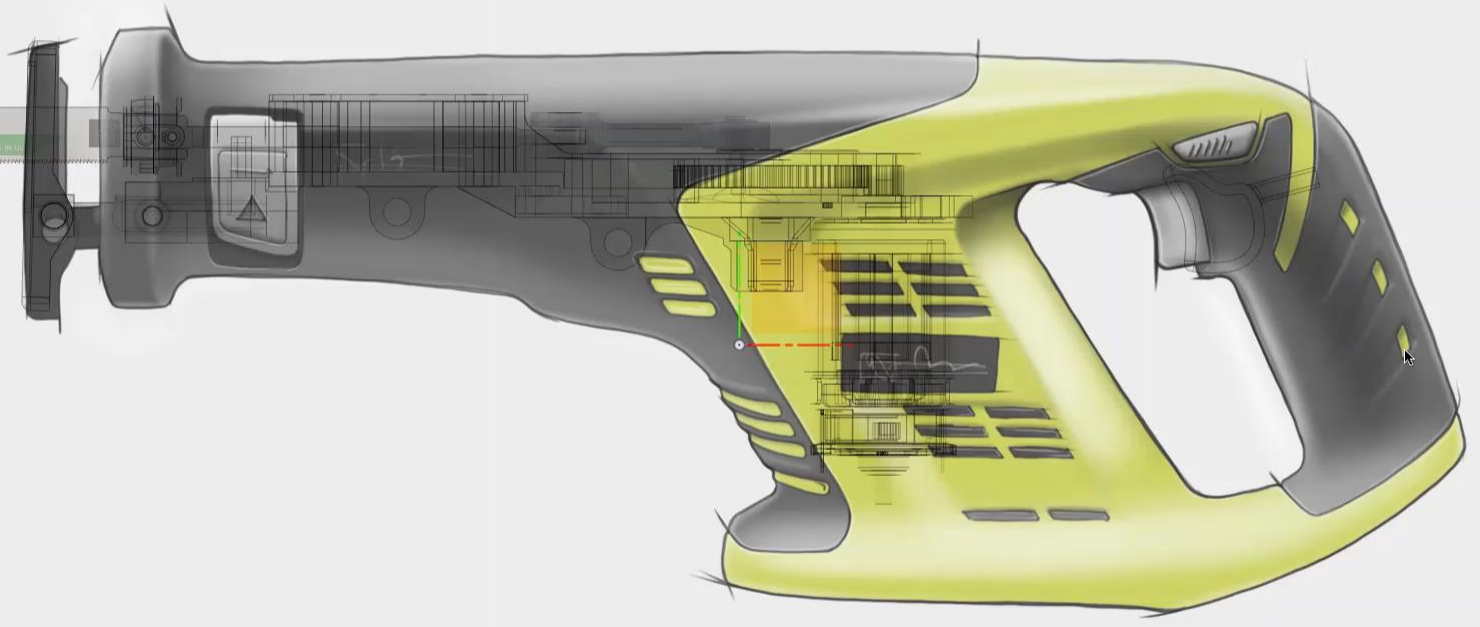




FRONT

BROWSER

- Reciprocating Saw v10
  - Named Views
  - Units: mm
  - Selection Sets
  - Origin
  - Analysis
  - Joints
  - Bodies
  - Canvases
  - 51SRmZg23NL\_SL1308\_
  - Concept Sketch Saw2
  - Sketches
    - Construction
    - Guide Block 1 v2:1
    - Guide Block 2 v2:1
    - Large Spur Gear v2:1
    - Big Gear Shaft v2:1
    - Short Rod v2:1
    - Connecting Rod v2:1
    - Gear Housing Cover v2:1
    - Gear Housing v3:1
    - Blade Guard v2:1
    - Motor v2:1
    - Small Spur Gear v2:1
    - Blade Guard Assembly v2:1
    - Blade Holder Assembly v2:1
    - Trigger v1:1



COMMENTS



# Photo-realistic images

## Rendering

### Benefits

- Sell a product before manufacturing it
- Leverage cloud to do the heavy lifting
- Automated updates on each save
- Short learning curves

### Capabilities

- Create stunning visuals
- Ideate on different appearances and finishes
- Marketing materials without developing a product





## RENDERING GALLERY

RENDER ON SAVE 

Drag and drop views here to enable rendering on save for future versions



# Prototyping

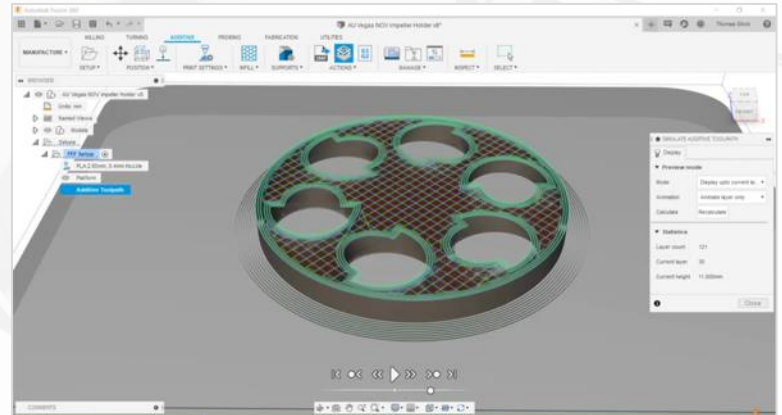
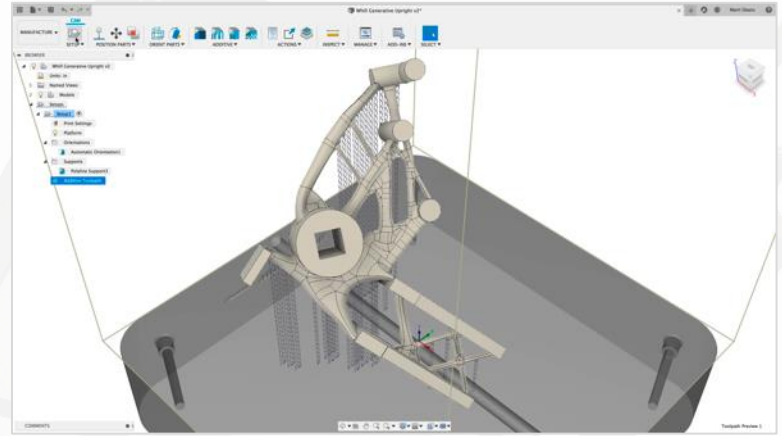
## Test form, fit, and function

### Benefits

- Flexible to changes
- Easily create controlled surfaces
- Fast learning curve
- Adaptable to most designs

### Capabilities

- Integrated printing workflow
- Automatic part orientation
- Printing simulation
- Support for plastic and metal printing machines



# Mechanical Engineer

## Top 5 differentiators from detailed analysis

- 1 History Free Direct Modeling
- 2 Parametric Surface & Solid Modeling
- 3 Sheet Metal Design Tools
- 4 Multi-Body or Distributed Assembly Design
- 5 All Add Up to a True Hybrid Design Application

“ I can have something from design stage to off the machine in one hour.

Quote Attribution

**MJK**  
PERFORMANCE  
PERFORMANCEBAGGER



# Parametric modeling

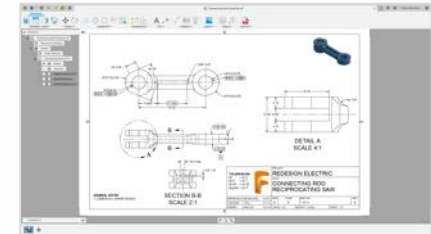
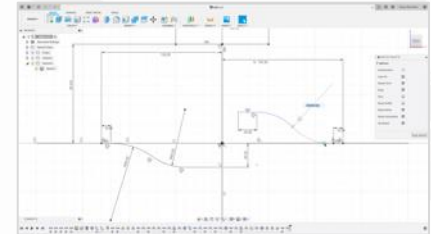
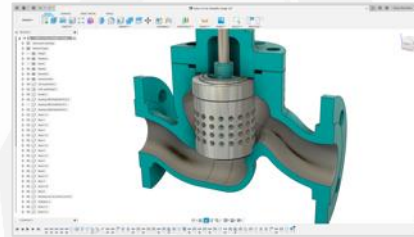
## History-Based

### Benefits

- Common Engineering methods
- Collaborative Product Development
- Easily track changes
- Capture design intent
- Re-use design data

### Capabilities

- 2D & 3D Sketching
- Part & Assembly Design
- Mechanism Design
- Sheet metal components
- Surface Modeling
- Drawing Creation



# Direct & mesh modeling

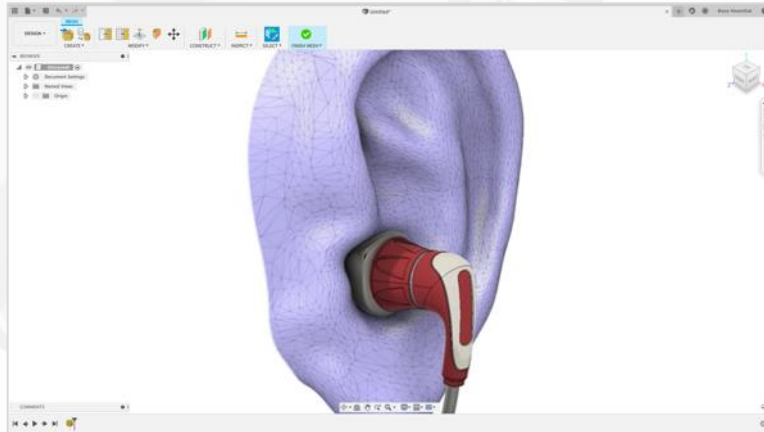
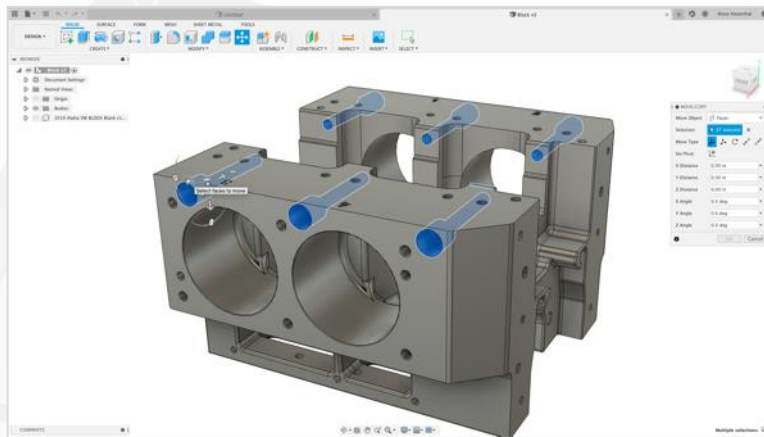
## Freeform modelling

### Benefits

- No features or constraints
- Instant translation
- Quickly heal imported models
- Easily edit non-native file formats
- Prepare models for 3D printing

### Capabilities

- Import 50+ file types
- Edit & repair imported geometry
- Import scans and mesh models



MODEL

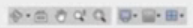
CREATE MODIFY ASSEMBLE SKETCH CONSTRUCT INSPECT INSERT SELECT



- BROWSER
- Pipe v1
    - Named Views
    - Units: in
    - Origin



ACTIVITY





# Analyze product performance

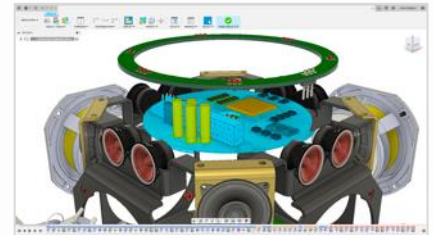
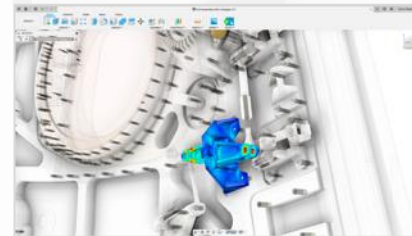
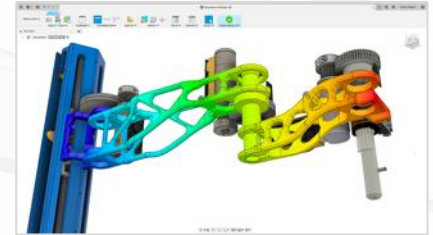
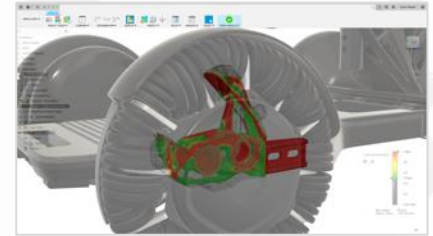
## Simulation

### Benefits

- Reduce cost of physical prototyping
- Early detection of design flaws
- Avoid product performance issues
- Compare benefits of design changes
- Simulate real world condition

### Capabilities

- Static & non-linear stresses
- Modal frequency
- Thermal & thermal stress
- Buckling & Event
- Cloud solve simultaneously



**SIMULATION**

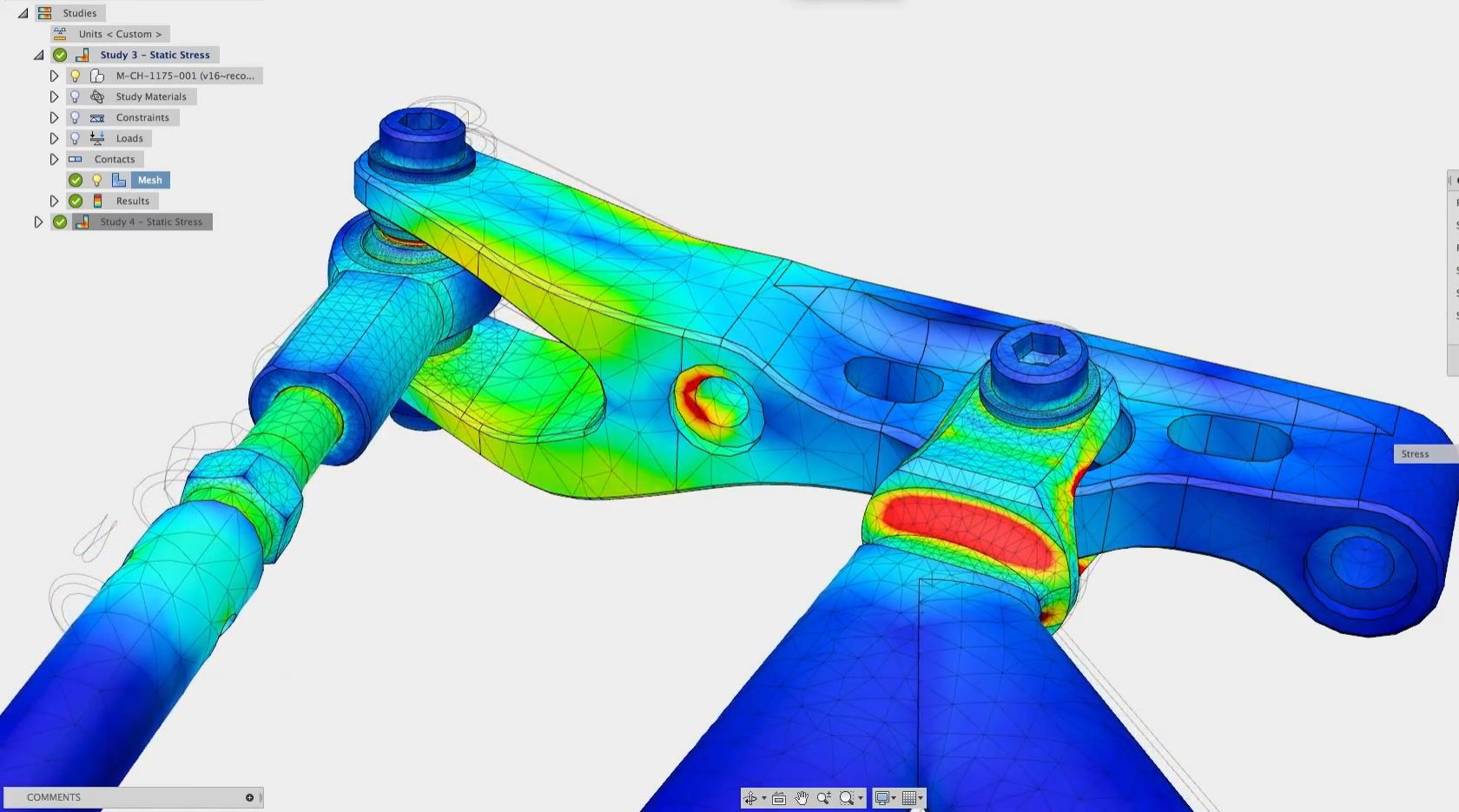
STUDY MATERIAL CONSTRAINT LOAD CONTACT DISPLAY SOLVE MANAGE RESULTS SELECT

BROWSER

Studies

Units < Custom >

- Study 3 - Static Stress
  - M-CH-1175-001 (v16--reco...
  - Study Materials
  - Constraints
  - Loads
  - Contacts
  - Mesh
  - Results
- Study 4 - Static Stress



**ANIMATE**

Pause

Stop

Record

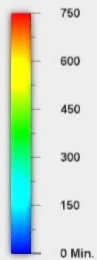
Speed Normal

Steps 50

Step 37

OK Cancel

Stress Von Mises psi



Nodes: 748,084  
Elements: 488,546  
Max.: 4821

# Documentation

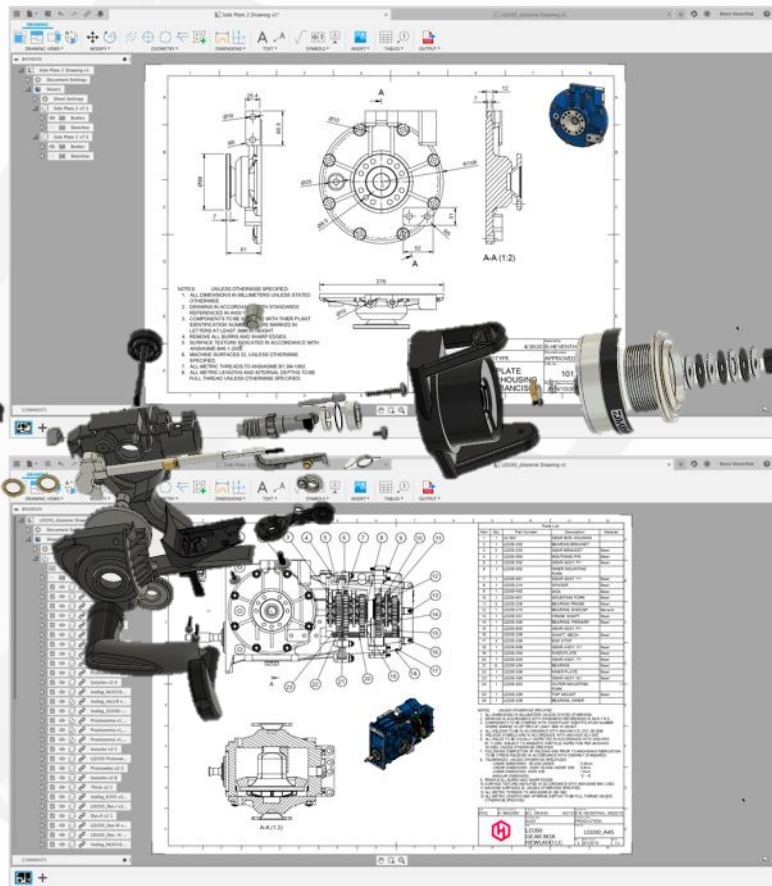
## 2D drawings & animations

### Benefits

- Drawing Views Automatically Update to Model Changes
- Smart Templates Reduce Time to Complete Detailed Drawings
- Export Native DWG Files to Share with Suppliers / Manufacturers

### Capabilities

- Smart Templates Automate the Creation of Drawing Views & Drawing Sheets
- Detailed Drawing Views, Parts Lists, & Annotations
- Export to DWG, DXF, & PDF



# Generative design

Explore multiple manufacturable outcomes

## Benefits

- Design inspiration
- Part consolidation
- Weight reduction
- Create custom work holding
- Manufacturing costs insights

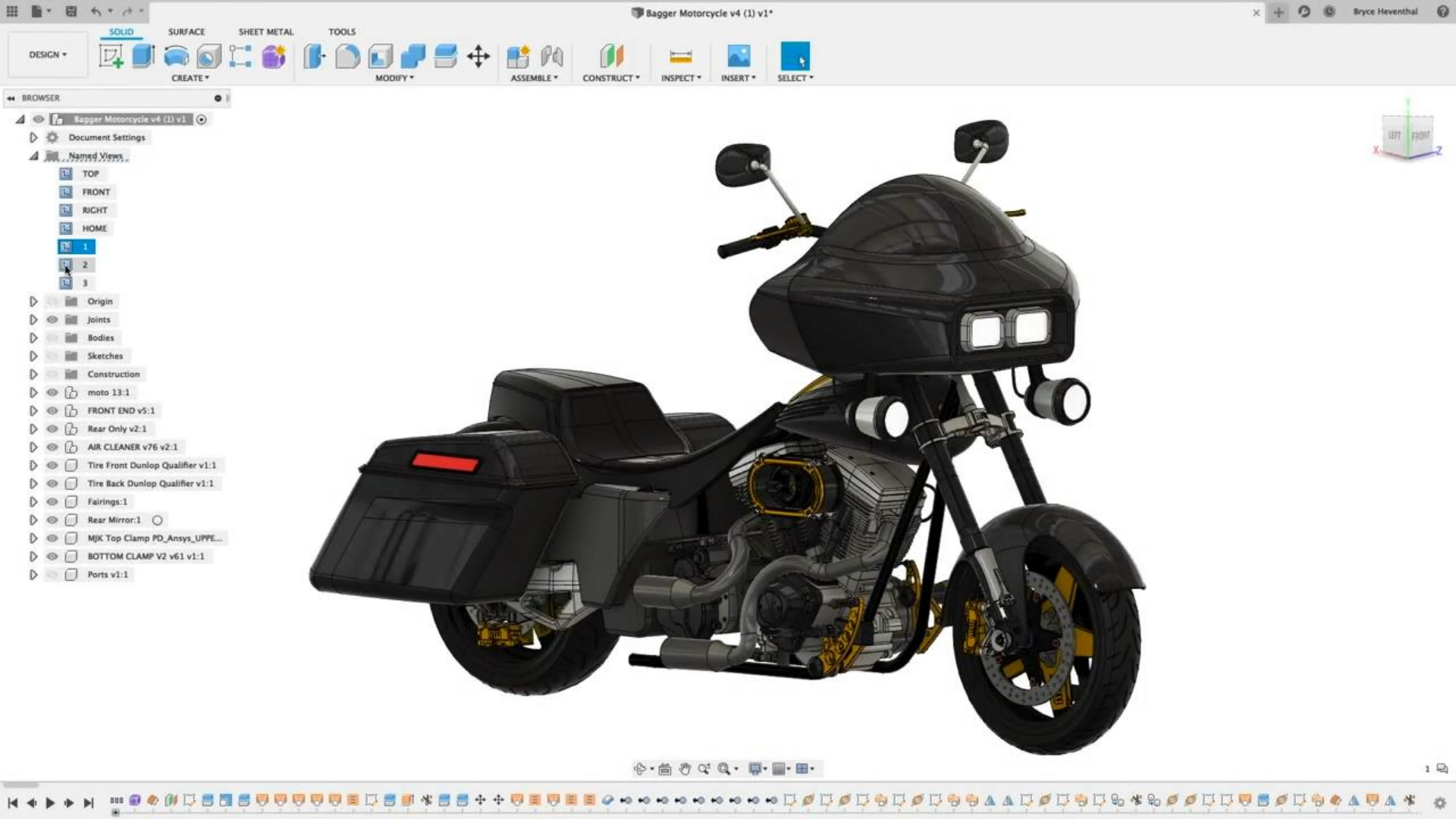
## Capabilities

- Specify design requirements
- Identify constraints, materials, and manufacturing options
- Cloud solve
- Export editable files



AUTODESK





# Electronics Engineer

## Connect Electrical and Mechanical Engineers

- 1 Integrated ECAD-MCAD-CAE-MFG
- 2 Complete comprehensive PCB Toolset
- 3 Cloud Libraries
- 4 Performance Insights

“ Fusion 360 had allowed our mechanical engineers and electrical engineers to work together in a collaborative way, to fit everything into the small space of our bottle.”

**Elizabeth Hubler**  
Engineering Product Manager



# Electronics

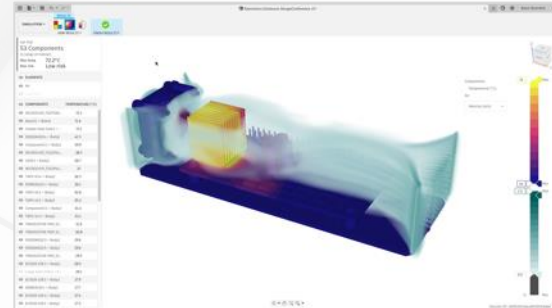
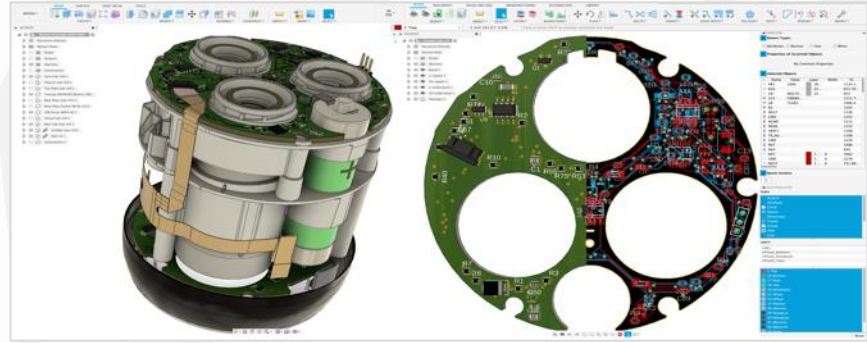
## Integrate smart products

### Benefits

- Add electronic intelligence
- Ensure PCB fit
- Ready to use PCB library
- Analyze accuracy and heat conditions

### Capabilities

- Schematic design
- PCB layout & routing
- PCB integration
- SPICE simulation
- Electronics Cooling (CFD)
- PCB manufacturing



# Electronics

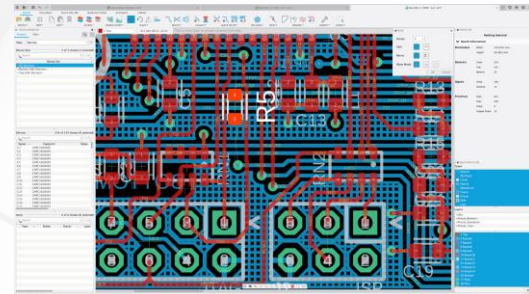
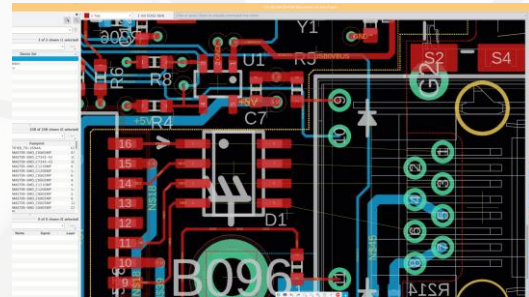
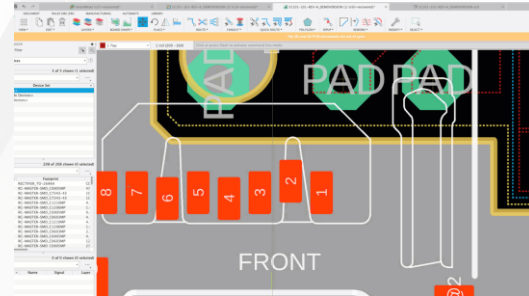
## PCB editor

### Benefits

- Real Time Design Rule checks
- Guided and Quick routing for single and multiple signals
- Time saving routing modification features
- Productive environment for optimal parts placing
- Never lose design work & easily revert to older versions

### Capabilities

- Constraint based design
- Advanced Interactive and manual routing
- Push and Shove route placement
- Always active Selection, Move and Rotate
- Automatic versioning and Milestone version creation





# Electronics

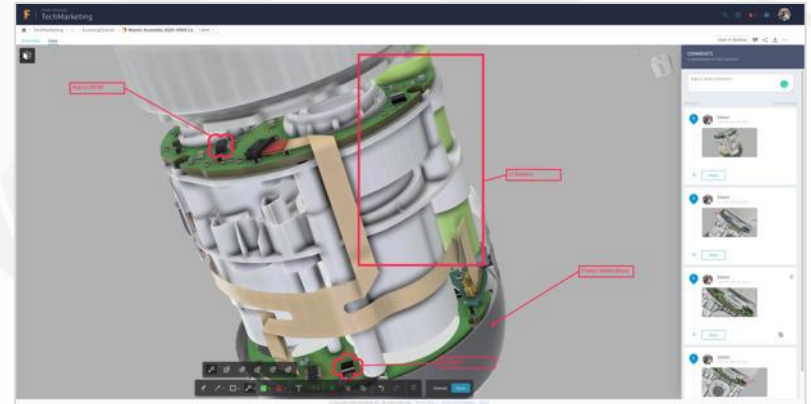
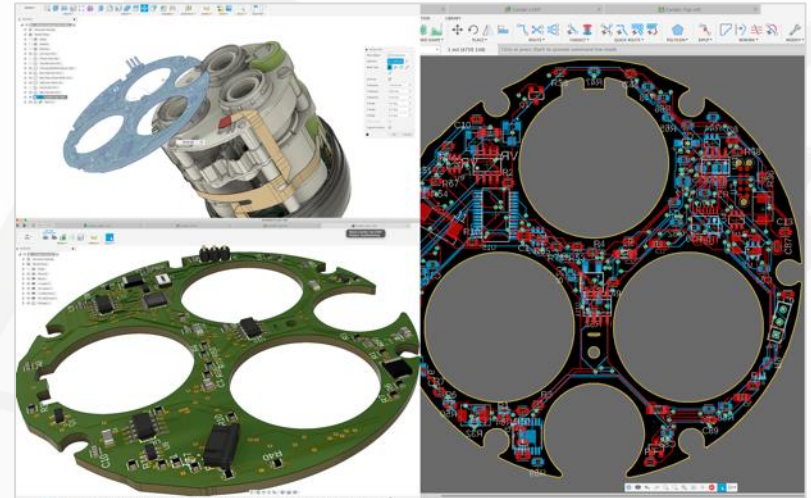
## ECAD / MCAD

### Benefits

- One tool, one dataset for both PCB & MCAD design aspects
- Real Time design collaboration
- Automatic PCB update with MCAD push
- Design form, fit, & function evaluation
- MCAD driven PCB outline with Complex geometry

### Capabilities

- Unified environment for ECAD and MCAD
- ECAD or MCAD can initiate, drive and pass design changes
- Bidirectional ECAD/MCAD Co-Design & collaboration
- Stateless and concurrent design process



# Electronics

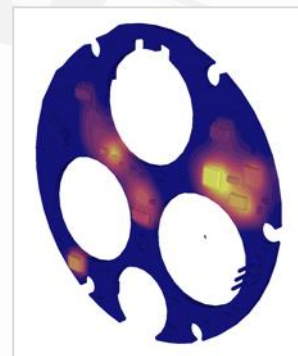
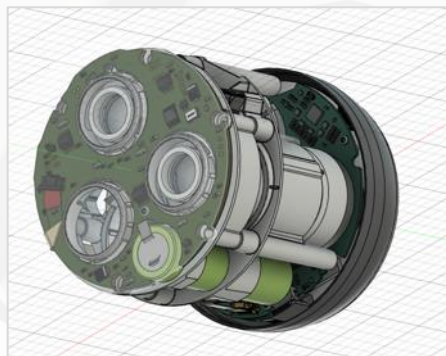
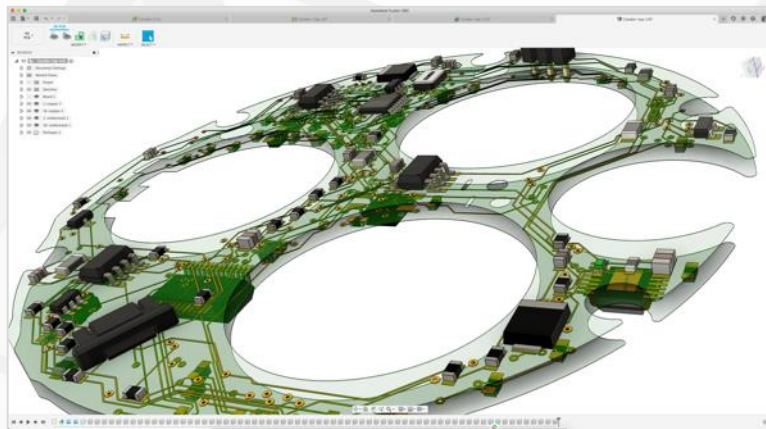
## 3D PCB

### Benefits

- Make PCB design changes in 3D with 2D PCB automatic update
- Evaluate real PCB properties performance (such as heat load)
- Real-time Collision and interference check

### Capabilities

- Functional True 3D PCB design
- PCB data properties setup (Copper, FR4, Core material, etc.)
- Easy to use cloud-based powerful design Simulation



# Manufacturing Engineer/ CAM Programmer

Extend to Manufacturing and  
Production Engineers

- 1 Integrated Manufacturing Platform
- 2 Collaborative Environment
- 3 Accessible Technology



“On our very first project using Fusion 360, we saved over \$14,000 by reducing cycle time by 9 minutes with no additional tool wear. That has a direct impact on our bottom line”

**Daniel Colbert,**  
Colbert Manufacturing



# Model for Manufacture

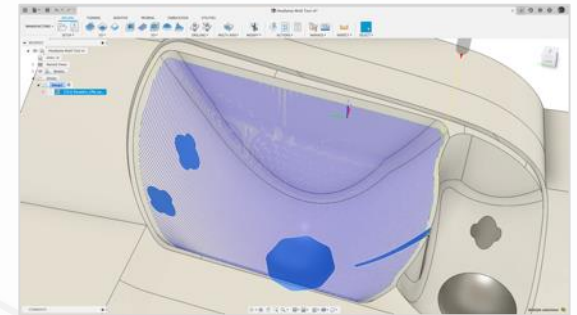
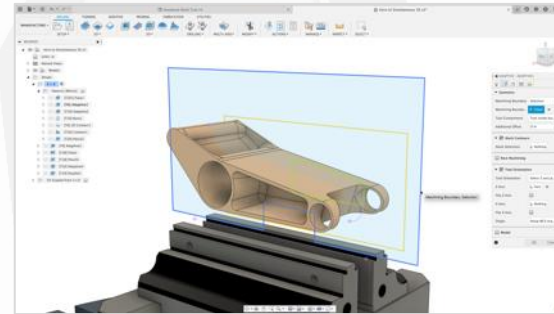
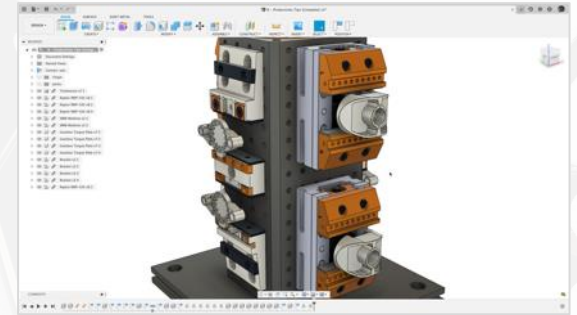
Flexible and powerful

## Benefits

- Quick edits to native or imported geometry
- Simple patch workflows
- Accurate manufacturing assemblies
- Build quality surfaces for quality toolpaths

## Capabilities

- Import and Translation of native & generic files
- 2D & 3D Sketching
- Assembly Modeling
- Surface Modeling
- Analysis tools



# Manufacturing

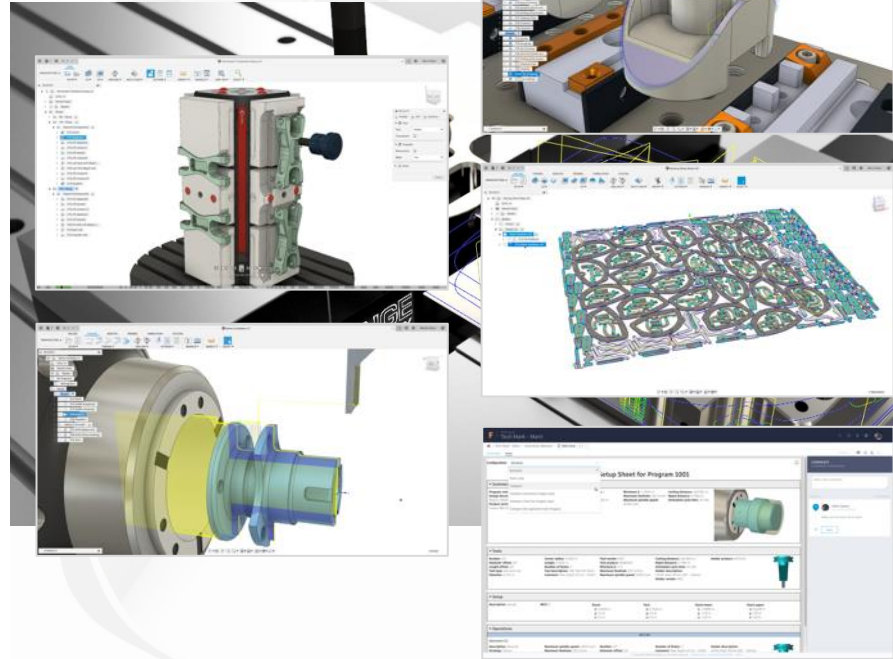
## Design to manufacture, fast

### Benefits

- Easy transition from existing software
- Fast, intelligent programming workflows
- Seamless collaboration across teams and locations
- Stay connected, up to date, and on the right version – every time

### Capabilities

- Intuitive and easy to install, learn, and use
- Save templates and defaults
- Access anywhere with cloud libraries & sharing
- Real-time collaboration

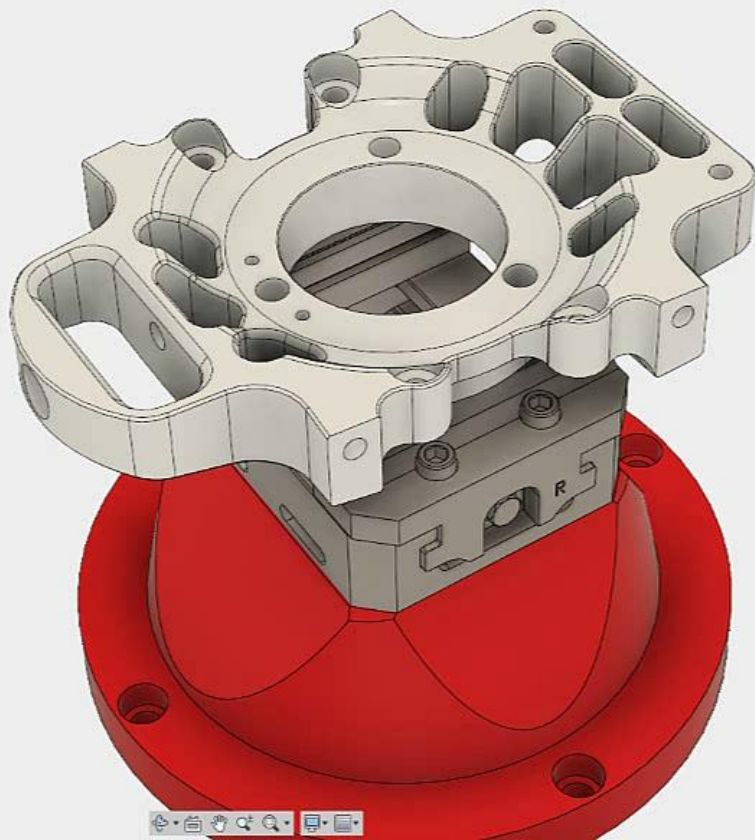


M-FS-1004 v4



BROWSER

- M-FS-1004 v4
  - Units: mm
  - M-FS-1004 v4.1
    - Setup1
      - [1] Face1
      - [3] 2D Adaptive2
      - [3] Adaptive1
      - [6] Bore1
      - [6] 2D Adaptive6
      - [6] 2D Contour1
      - [4] Spiral1
      - [7] 2D Contour2
      - [6] 2D Contour3
      - [8] Dr#3 [Chip breaking]
      - [8] Dr#2 [Chip breaking]
      - [7] 2D Contour4
      - [7] 2D Contour5
      - [15] 2D Contour6



COMMENTS



# Manufacturing

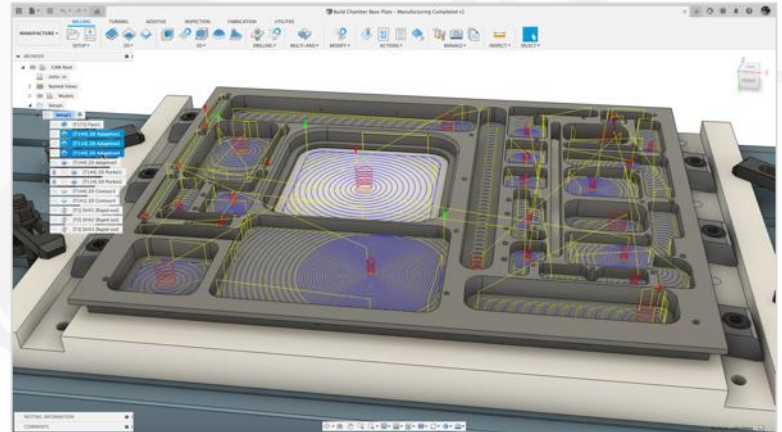
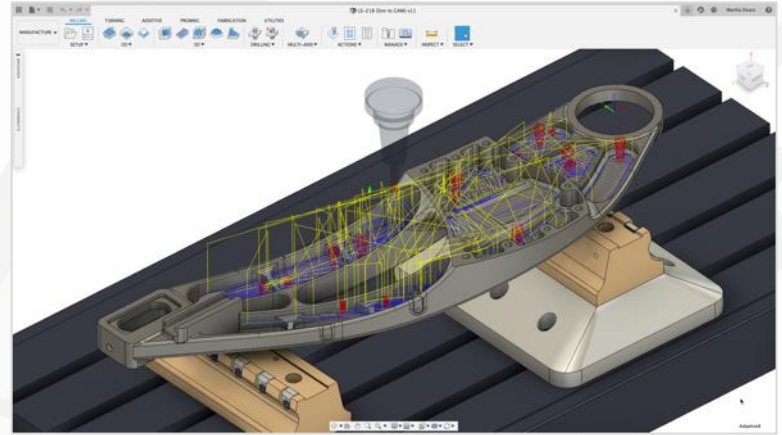
Generate toolpaths in minutes

## Benefits

- Increase productivity and throughput
- Increase capacity for iteration and innovation
- Reduce quote turnaround to win more business

## Capabilities

- Multi-threading for generation of multiple toolpaths
- Toolpath generation doesn't lock up your computer
- Generate toolpaths on laptops & Macs



# Manufacturing

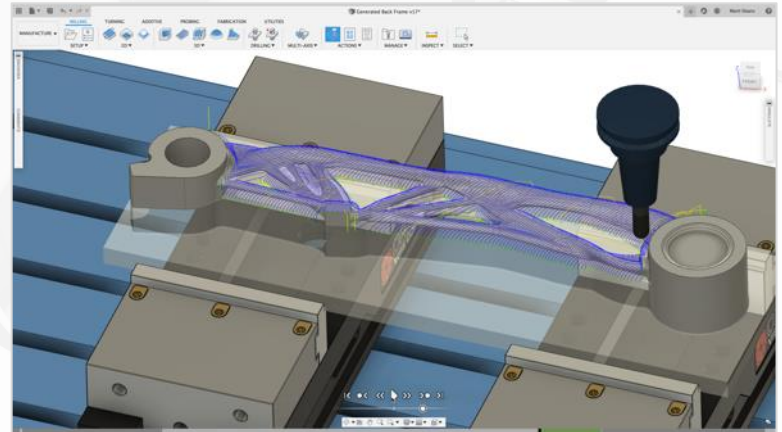
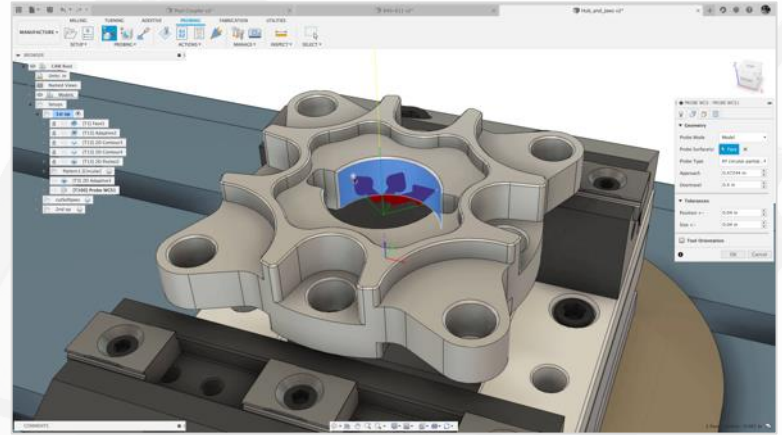
## CAD/CAM at a Fraction of the cost

### Benefits

- Increase productivity with more programmers
- Reduce risk of errors at the machine
- Run toolpaths confidently at all levels

### Capabilities

- Access your data from any computer by simply installing and logging in
- Fully integrated full suite of CAD tools to model workholding
- Verify with full stock simulation





### HAAS ST-10

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 1795  
Preconfigured HAAS ST-10 post with support for mill-turn  
[Recent changes](#)



### DMG Mori NLX Mill/Turn

[Download](#) / [Share](#) / [RSS](#)

**DMG MORI**  
Purpose Mill / Turn  
Version 42310  
Changed: 26 days ago  
Extension: nc  
Downloads: 2  
DMG Mori NLX post with support for mill-turn and a CELLOS control with MAPPS  
[Recent changes](#)

### HAAS ST-20Y

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42309  
Changed: 20 days ago  
Extension: nc  
Downloads: 1398  
Preconfigured HAAS ST-20Y post with support for mill-turn  
[Recent changes](#)



### DMG Mori CMX with FANUC control

[Download](#) / [Share](#) / [RSS](#)

**DMG MORI**  
Purpose Milling  
Version 42358  
Changed: 52 days ago  
Extension: nc  
DMG Mori CMX series horizontal machining center with optional rotary table and a FANUC  
[Recent changes](#)

### HAAS ST-20

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**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 1213  
Preconfigured HAAS ST-20 post with support for mill-turn  
[Recent changes](#)



### FANUC

[Download](#) / [Share](#) / [RSS](#)

**Fanuc**  
Purpose Milling  
Version 42307  
Changed: 4 days ago  
Extension: nc  
Downloads: 10  
Generic post for Fanuc  
[Recent changes](#)

### FANUC Turning

[Download](#) / [Share](#) / [RSS](#)

**Fanuc**  
Purpose Turning  
Version 42333  
Changed: 59 days ago  
Extension: nc  
Downloads: 2  
Generic turning post for FANUC. Use the property 'type' to switch the FANUC mode A, B, and C. Use the OCTUP on X-Post, Turned stop for Gang Tooling on X-Post, Turned stop for Gang Tooling on X-Post for X-Post  
[Recent changes](#)



### HAAS ST-30

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 517  
Preconfigured HAAS ST-30 post with support for mill-turn. You can fix  
[Recent changes](#)



### HURCO

[Download](#) / [Share](#) / [RSS](#)

**HURCO**  
Purpose Milling  
Version 42285  
Changed: 86 days ago  
Extension: trnc  
Downloads: 3  
Generic post for HURCO. Note that this post supports both ISNC ISO NC model and DNC II properly. Also note that you can turn on 3D axis by enabling the 'allowDnc' property so  
[Recent changes](#)

### HAAS ST-30Y

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 648  
Preconfigured HAAS ST-30Y post with support for mill-turn. You  
[Recent changes](#)

### HAAS ST-15

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 384  
Preconfigured HAAS ST-15 post with support for mill-turn. You  
[Recent changes](#)



### HURCO 3D

[Download](#) / [Share](#) / [RSS](#)

**HURCO**  
Purpose Milling  
Version 42285  
Changed: 86 days ago  
Extension: trnc  
Downloads: 1  
Generic post for older 3-axis HURCOs. Note that this post supports both ISNC ISO NC model disabling the 'linc' property.  
[Recent changes](#)



### HAAS ST-35

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 259  
Preconfigured HAAS ST-35 post with support for mill-turn. You can force  
[Recent changes](#)



### HAAS ST-25

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 226  
Preconfigured HAAS ST-25 post with support for mill-turn. You can force  
[Recent changes](#)



### HAAS DS-30Y

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 345  
Preconfigured HAAS DS-30Y post with support for mill-turn. You can  
[Recent changes](#)



### HAAS ST-35Y

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42300  
Changed: 30 days ago  
Extension: nc  
Downloads: 299  
Preconfigured HAAS ST-35Y post with support for mill-turn  
[Recent changes](#)



### HAAS ST-25Y

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 213  
Preconfigured HAAS ST-25Y post with support for mill-turn  
[Recent changes](#)



### HAAS DS-30SSY

[Download](#) / [Sample](#) / [Share](#) / [RSS](#)

**Haas Automation**  
Purpose Mill / Turn  
Version 42302  
Changed: 30 days ago  
Extension: nc  
Downloads: 405  
Preconfigured HAAS DS-30SSY post with support for mill-turn  
[Recent changes](#)



### Mitsubishi

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**Mitsubishi**  
Purpose Milling  
Version 42285  
Changed: 86 days ago  
Extension: nc  
Downloads: 2  
Generic milling post for Mitsubishi  
[Recent changes](#)



### Mitsubishi Turning

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**Mitsubishi**  
Purpose Turning  
Version 42207  
Changed: 219 days ago  
Extension: nc  
Downloads: 1  
Generic turning post for Mitsubishi control. Use the property 'type' to switch the Mitsubishi. Turned stop for OCTUP on X-Post, Turned stop for Gang Tooling on X-Post, Turned stop for Gang T  
[Recent changes](#)



### Fadal

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**Fadal**  
Purpose Milling  
Version 42285  
Changed: 86 days ago  
Extension: nc  
Generic milling post for Fadal.  
[Recent changes](#)

### Siemens Turning

[Download](#) / [Share](#) / [RSS](#)

**Siemens**  
Purpose Turning  
Version 42300  
Changed: 28 days ago  
Extension: mpf  
Downloads: 1  
Generic lathe post for Siemens. Use Turned or Positional Turned. Turned stop for OCTUP on X-Post  
[Recent changes](#)



### Siemens Mill-Turn

[Download](#) / [Share](#) / [RSS](#)

**Siemens**  
Purpose Mill / Turn  
Version 42310  
Changed: 35 days ago  
Extension: mpf  
Downloads: 0  
Generic Siemens mill-turn post. This post must be customized for the particular capabilities  
[Recent changes](#)



### Siemens SINUMERIK 810D

[Download](#) / [Share](#) / [RSS](#)

**Siemens**  
Purpose Milling  
Version 42303  
Changed: 2 days ago  
Extension: mpf  
Downloads: 2  
Generic post for Siemens SINUMERIK 810D  
[Recent changes](#)



### Mazak

[Download](#) / [Share](#) / [RSS](#)

**Mazak**  
Purpose Milling  
Version 42285  
Changed: 86 days ago  
Extension: vnc  
Downloads: 1  
Generic milling post for Mazak  
[Recent changes](#)

### Mazak Laser

[Download](#) / [Share](#) / [RSS](#)

**Mazak**  
Purpose: Waterjet / Laser / Plasma  
Version 42135  
Changed: 254 days ago  
Extension: ncc  
Generic post for Mazak laser cutting  
[Recent changes](#)



### Mazak Mill with rotary table

[Download](#) / [Share](#) / [RSS](#)

**Mazak**  
Purpose Milling  
Version 42135  
Changed: 29 days ago  
Extension: vnc  
Downloads: 1  
Generic milling post for Mazak with a rotary table  
[Recent changes](#)



### Siemens SINUMERIK 840C

[Download](#) / [Share](#) / [RSS](#)

**Siemens**  
Purpose Milling  
Version 42303  
Changed: 2 days ago  
Extension: mpf  
Downloads: 1  
Generic post for Siemens 840C. Note that the post will use Dr-Drive  
[Recent changes](#)



### Siemens SINUMERIK 802D

[Download](#) / [Share](#) / [RSS](#)

**Siemens**  
Purpose Milling  
Version 42308  
Changed: 28 days ago  
Extension: mpf  
Generic post for Siemens SINUMERIK 802D  
[Recent changes](#)



### Siemens SINUMERIK 840D Inspection

[Download](#) / [Share](#) / [RSS](#)

**Siemens**  
Purpose Milling  
Version 42303  
Changed: 2 days ago  
Extension: mpf  
Downloads: 2  
Generic post for Siemens 840D with inspection capabilities. Note  
[Recent changes](#)

# Machining extension

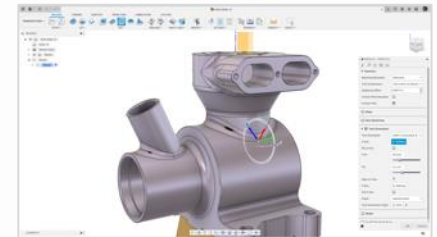
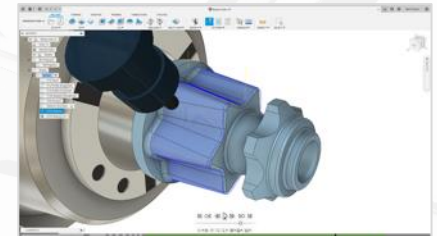
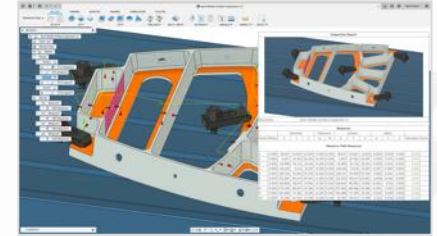
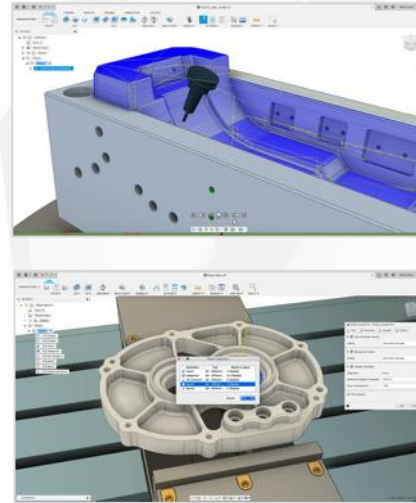
## Advanced manufacturing

### Benefits

- Fast and easy generation of complex strategies
- Effectively use machine capabilities
- Automate and streamline verification
- Reduce setup time and human error

### Capabilities

- Part alignment and on-machine verification
- Toolpath optimization
- Automatic collision avoidance for 5-axis toolpaths
- Advanced tool axis control
- Rotary milling





# Product Design extension

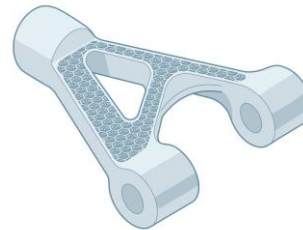
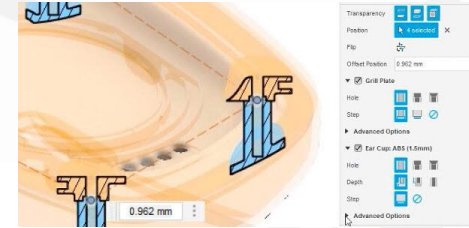
## Advanced industrial design and engineering

### Benefits

- Complex modelling capabilities
- Specialized toolsets for your industry
- Manufacturing aware design strategies

### Capabilities

- Plastic product design tools
- Advanced geometric patterning
- Lattice generation
- Plastic product design rules
- Trimesh to BREP



- BROWSER
- Sketch57
- Sketch58
- Sketch59
- Sketch60
- Sketch62
- CENTRAL BODY:1
  - Plastic Rule: ABS (1.5mm)
  - Origin
  - Bodies
  - Canvases
  - Sketches
  - TOP CORNER:1
  - LOWER FRONT:1
  - TOP HANDLE:1
  - SMALL BUTTON:1
  - POWER BUTTON:1
  - LOWER REAR (1):1
  - BOTTOM PANEL (1):1
  - EYECUP:1
  - SCREWS (2):1
  - RUBBER FEET:1
  - TOP SCREWS:1
- OUTER BODY:1
  - Origin
  - Bodies
  - Sketches
  - left side:1
    - Plastic Rule: ABS (1.5mm)
    - Origin
    - Bodies
    - Canvases
    - Sketches
    - SCREWS (1):1
    - NEW HANDLE:1
    - BACKPLATE:1
    - SIDE BUTTON:1
    - Small screws:1
    - Slot head screw:1
  - right side:1
    - Plastic Rule: ABS (1.5mm)
    - Origin
    - Joints
    - Bodies
    - Canvases
    - Sketches
    - FLIP SCREEN:1
    - HINGE:1
    - BUTTONS (1):1
    - SCROLL WHEEL:1
    - screen buttons:1
    - Knob-Dial:1



# Nesting & fabrication extension

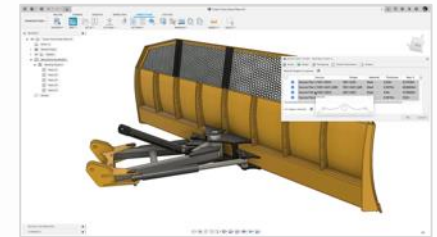
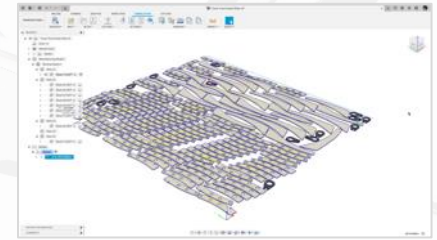
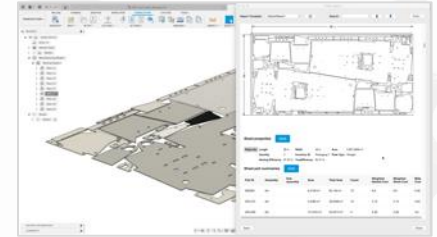
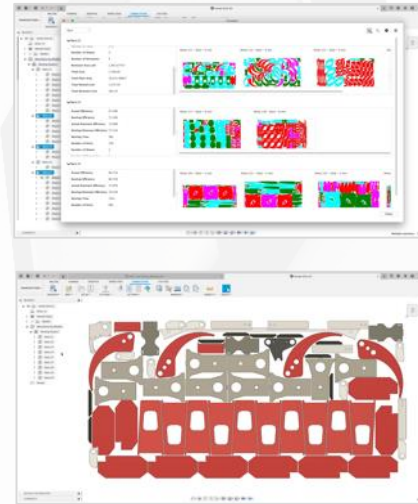
## Advanced manufacturing

### Benefits

- Seamless updates with associative nesting
- Integrated CAM for simplified toolpath generation and machine programming
- Predict material usage and optimize yield
- Quickly and easily create toolpaths
- Flexible setup for beginners or experts

### Capabilities

- Fast and easy multi-sheet nest generation
- Process material management and optimization
- Quick comparisons for easy quoting
- Thorough nesting reports



DESIGN ▾

SOLID

SURFACE

SHEET METAL

TOOLS

CREATE ▾

MODIFY ▾

ASSEMBLE ▾

CONSTRUCT ▾

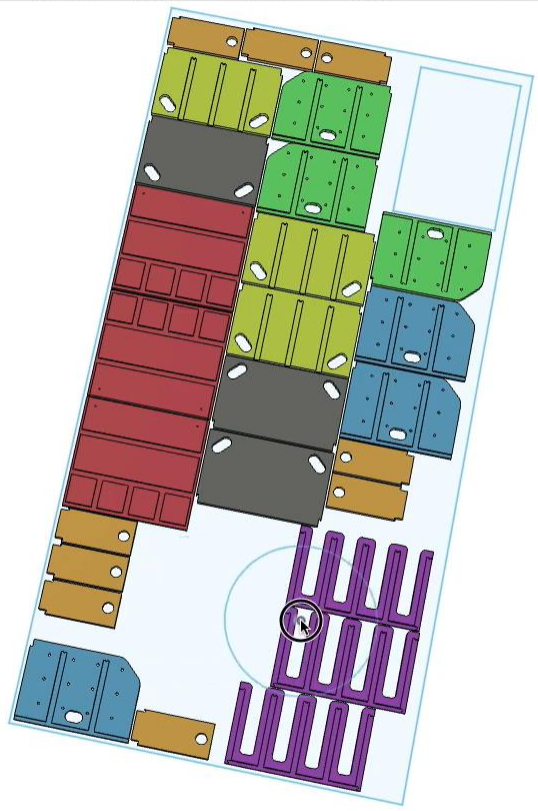
INSPECT ▾

INSERT ▾

SELECT ▾

BROWSER

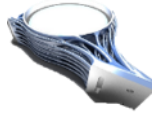
- Drill Holder v5
- Document Settings
- Named Views
- Origin
- Sketches
  - BACK
  - SIDE
  - TOP CORD SLOT
  - Sketch7
- LEFT:1
- BTM HANGER:1
  - Origin
  - Bodies
    - Body1
  - LOWER SHELF:1
  - TOP SHELF:1
  - DIVIDER:1
  - DIVIDER:2
  - DIVIDER:3
  - BACK:1
  - RIGHT:1
  - LEFT:2
  - TOP SHELF:2
  - LOWER SHELF:2
  - DIVIDER:5
  - BACK:2
  - DIVIDER:6
  - DIVIDER:4
  - RIGHT:2
  - BTM HANGER:2
  - LEFT:3
  - TOP SHELF:3
  - LOWER SHELF:3
  - DIVIDER:9
  - BACK:3



Sketch Point | X: 48.471 Y: 21.511 Z: 0.00 in



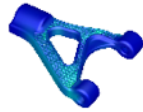
# Integration of industry leading tech



Generative Design



Design Optimisation



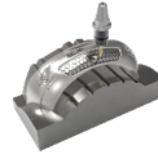
Simulation / Analysis



Additive



Molding



CNC



Metrology



Composites / Fabrication



Prototyping



Metal AM



Jigs & Fixtures



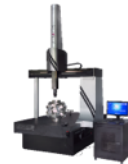
Tooling



DED



CMMs



Fabrication



Robots





# Supply Chain Collaboration

## Drive Organizational and Supply Chain Collaboration

- 1 Connected Digital Platform
- 2 Manage Users Access to your proprietary Data
- 3 Collaborate both inside and outside the firewall
- 4 Extend to local manufacturing
- 5 Make more informed decisions



We are looking forward to using Fusion as a collaboration platform to improve the efficiency of communication between several teams, starting from equipment design until maintenance with our colleagues who are running the chemical plant.



# Collaboration

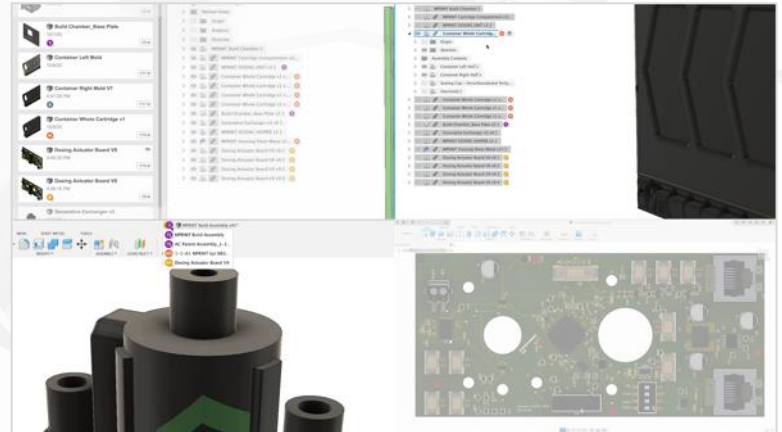
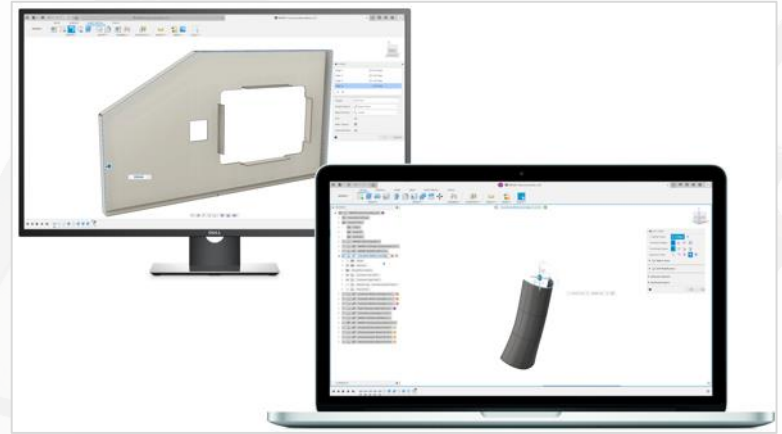
Highlight, revise, and ship

## Benefits

- Browser based collaboration
- Real time editing
- Release management
- See who's doing what and where

## Capabilities

- Full product lifecycle workflow
- Multi role interoperability
- Milestone management
- Multi-platform accessibility



Data People

Upload

New Folder ⚙️

🏠 &gt; Transitioning to Fusion 360

Color Palette

Generative Design

🛡️ Assembly

5/14/21

V1 ▾

🛡️ Bracket Assembly

5/12/21

V24 ▾

📄 Bracket Assembly Drawing

5/6/21

V4 ▾

🛡️ Clevis

5/4/21

V2 ▾

🛡️ Clevis - Mold Cavity

5/5/21

V2 ▾

🛡️ Half Bracket Gen Des

5/6/21

V1 ▾

🛡️ T-Spline

5/12/21

DESIGN ▾

SOLID



SURFACE



PARAMESH



SHEET METAL



TOOLS



MANAGE



CREATE ▾

MODIFY ▾

ASSEMBLY ▾

CONSTRUCT ▾

INSPECT ▾

INSERT ▾

SELECT ▾

BROWSER

🔍 🗨️ 🗑️ (Unsaved) 🕒

⏪ ⚙️ Document Settings

⏪ 📄 Named Views

⏪ 📁 Origin

COMMENTS



# Manage extension

## Data management

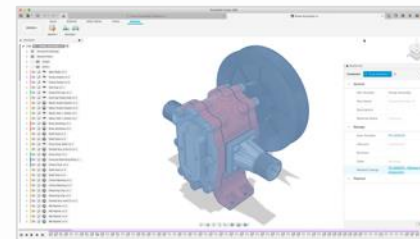
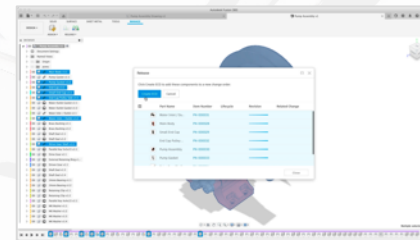
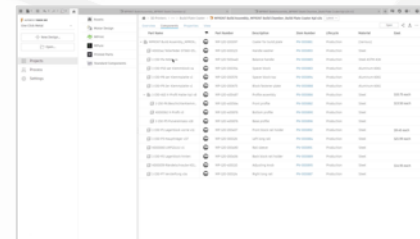
### Benefits

- Instant on, data management capabilities
- Pre-configured workflows for easy setup
- Capture, notify, and approve design changes
- Digital approval records
- Release control for manufacturing

### Capabilities

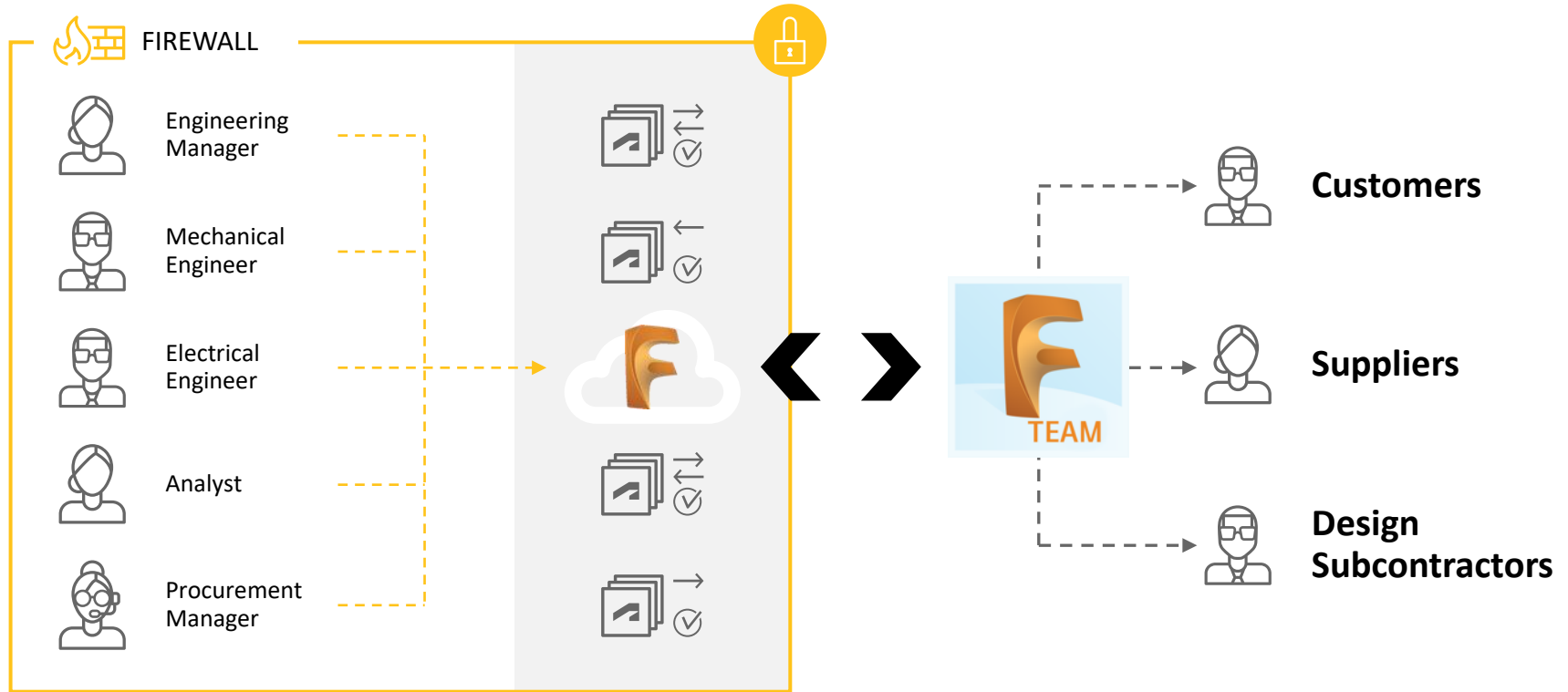
- Automated item number assignment
- Release process management
- Engineering Change Orders (ECOs)
- Workflow state diagram
- Email notifications

## **AUTODESK** Fusion 360 Manage Extension

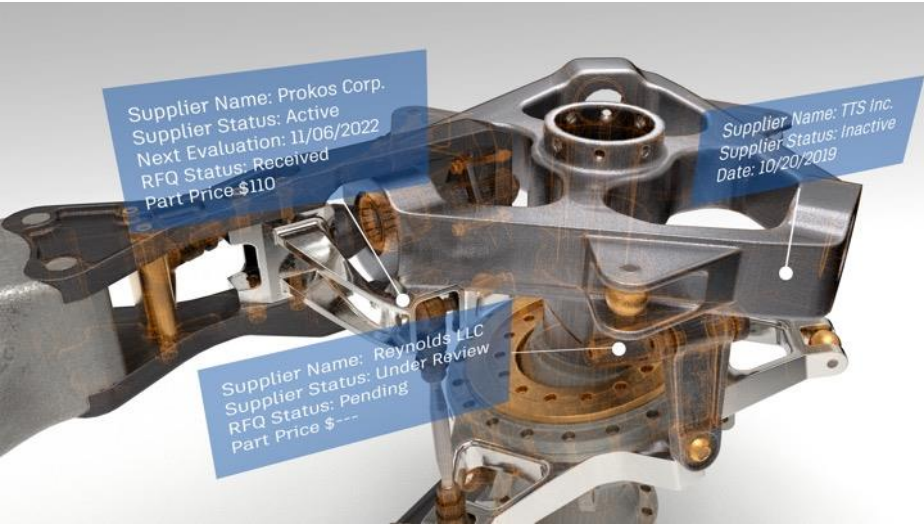




# Collaborate

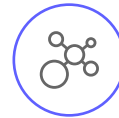


# Supplier collaboration



Connecting you to your  
global supply chain 24/7

**Anytime, anywhere access to the information your extended organization needs for quoting, procurement, and supplier management.**



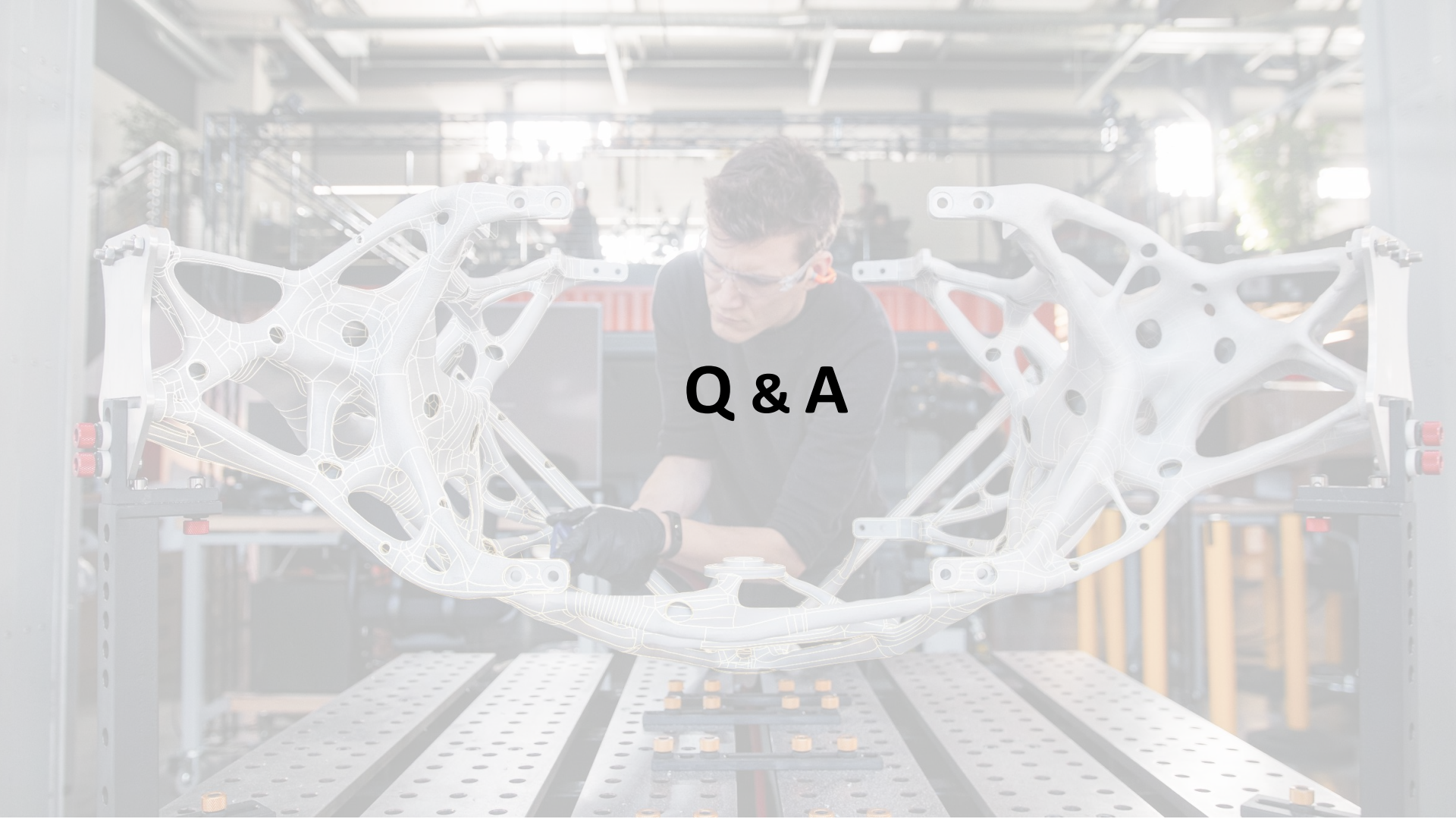
**We know which suppliers to use.**

Rather than relying on tribal knowledge or digging through emails for preferred suppliers, find up-to-date information in a centralized system when you need it.



**Manage compliance more easily.**

Link suppliers to your bill of materials to ensure compliance standards are followed.

A worker wearing safety glasses and gloves is working on a car chassis in a factory. The chassis is shown with a white wireframe overlay, highlighting its complex structure. The worker is focused on the task, and the background shows a typical industrial setting with various equipment and lighting.

**Q & A**





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