STEP vs. native Data:

The key role of data quality in modern manufacturing

Leon Jalowietzki
Key Account Manager eCATALOG 3Dfindit

Agenda

1. **Basics:**
   Definitions and characteristics of native CAD data and STEP data

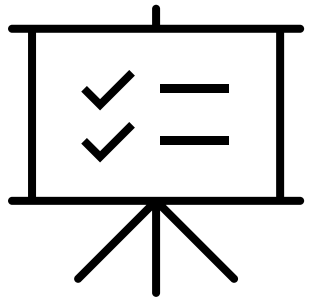
2. **Technical comparison:**
   Analysis of data scope, flexibility and integrity

3. **Added value for engineers:**
   Increased efficiency and error reduction through native CAD data

4. **Added value for manufacturers:**
   Optimizing processes and increasing competitiveness

5. **Examples from practice:**
   Specific application examples

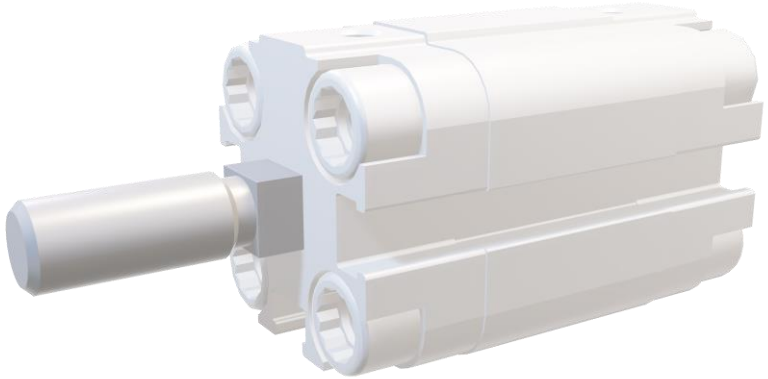
6. **Conclusion & recommendations:**
   Key messages, future trends and round of discussion



Basics: STEP data vs. native CAD data

STEP-Data:

- Standardized exchange format
- Suitable for cross-system data exchange
- Contains only greatly reduced model information



Native CAD-Data:

- Complete planning information
- Direct use in the design environment
- Higher data quality and editability

Native data model

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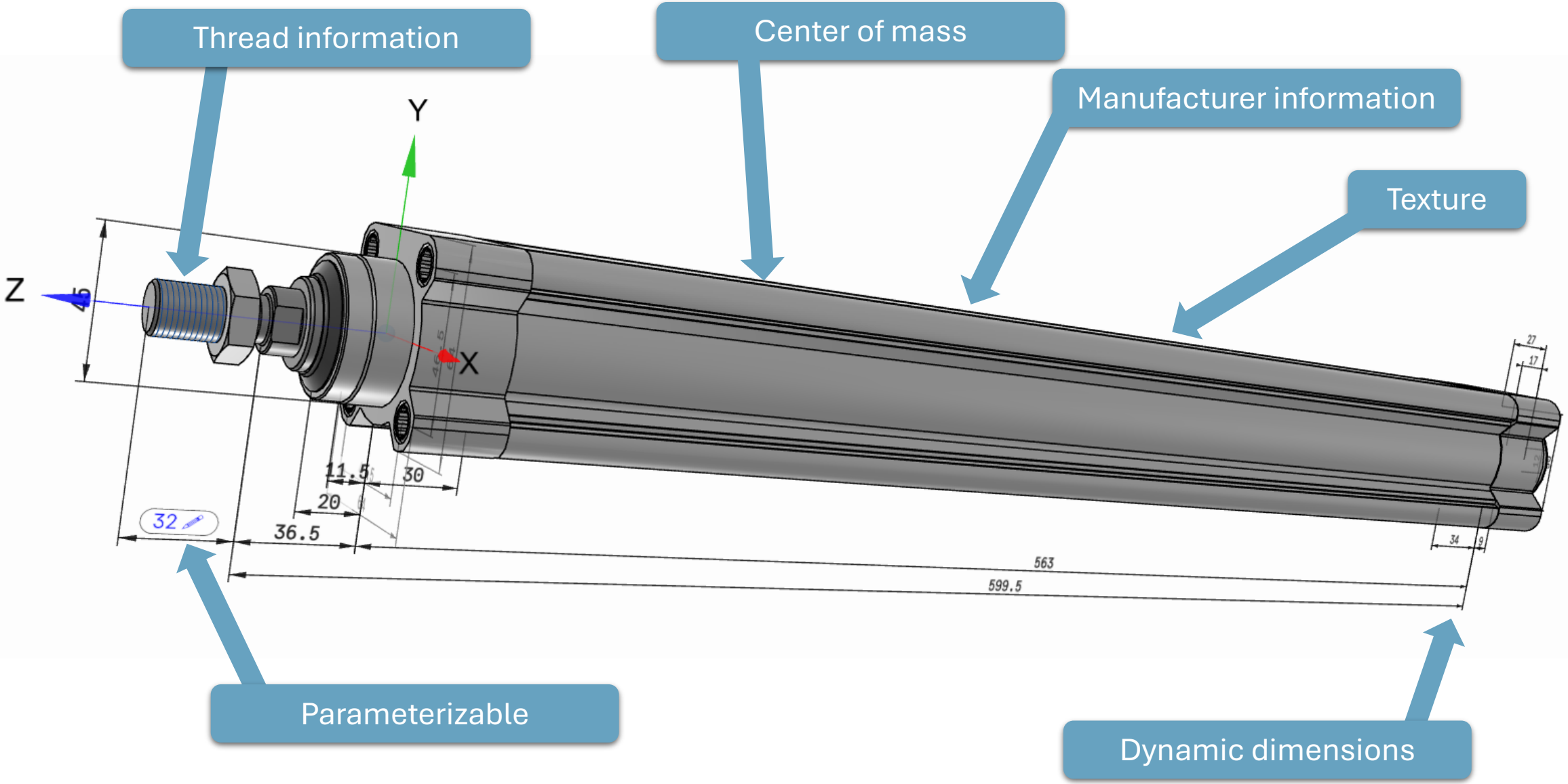

STEP-based data model

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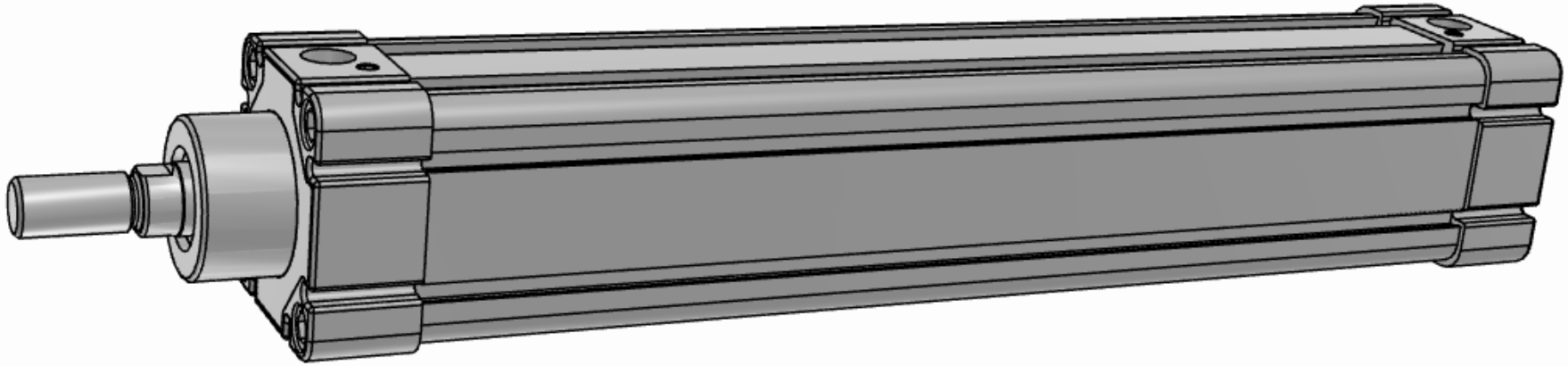
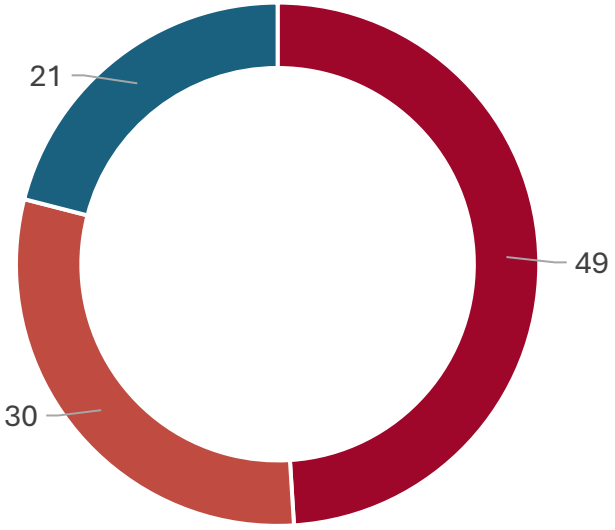


Market requirements

If you don't offer a digital twin, you will lose the target group of developers and designers.



79 %

look for alternatives instead of contacting manufacturers with inadequate CAD data

Which formats are in demand?

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CATIA

creo

Solid Edge.

AutoCAD

Inventor

SIEMENS AUTOMATION DESIGNER

NX

SOLIDWORKS

TopSolid

GRAPHISOFT Archicad

E3 series

ePLAN

.SLDPRT

.RVT

.CATPart

.PSM

.IAM

.3DXML

.IPT

.PAR

.PRT

.ASM

.PRT

.DXF

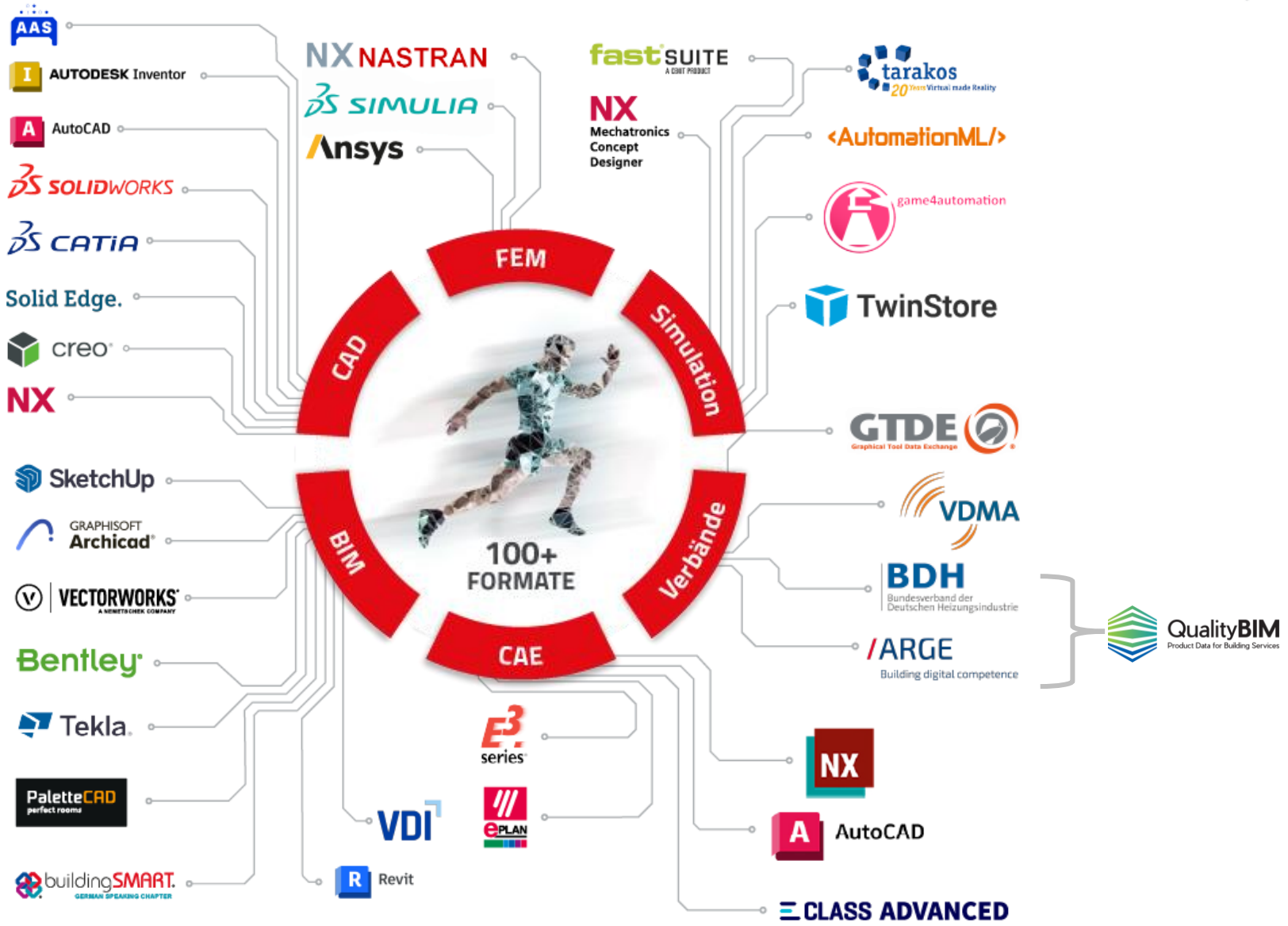
.AWL

.SLDPRT

.TIA

.DWG

CADENAS MultiCAD Technology



Advantages for engineers

Advantages for engineers

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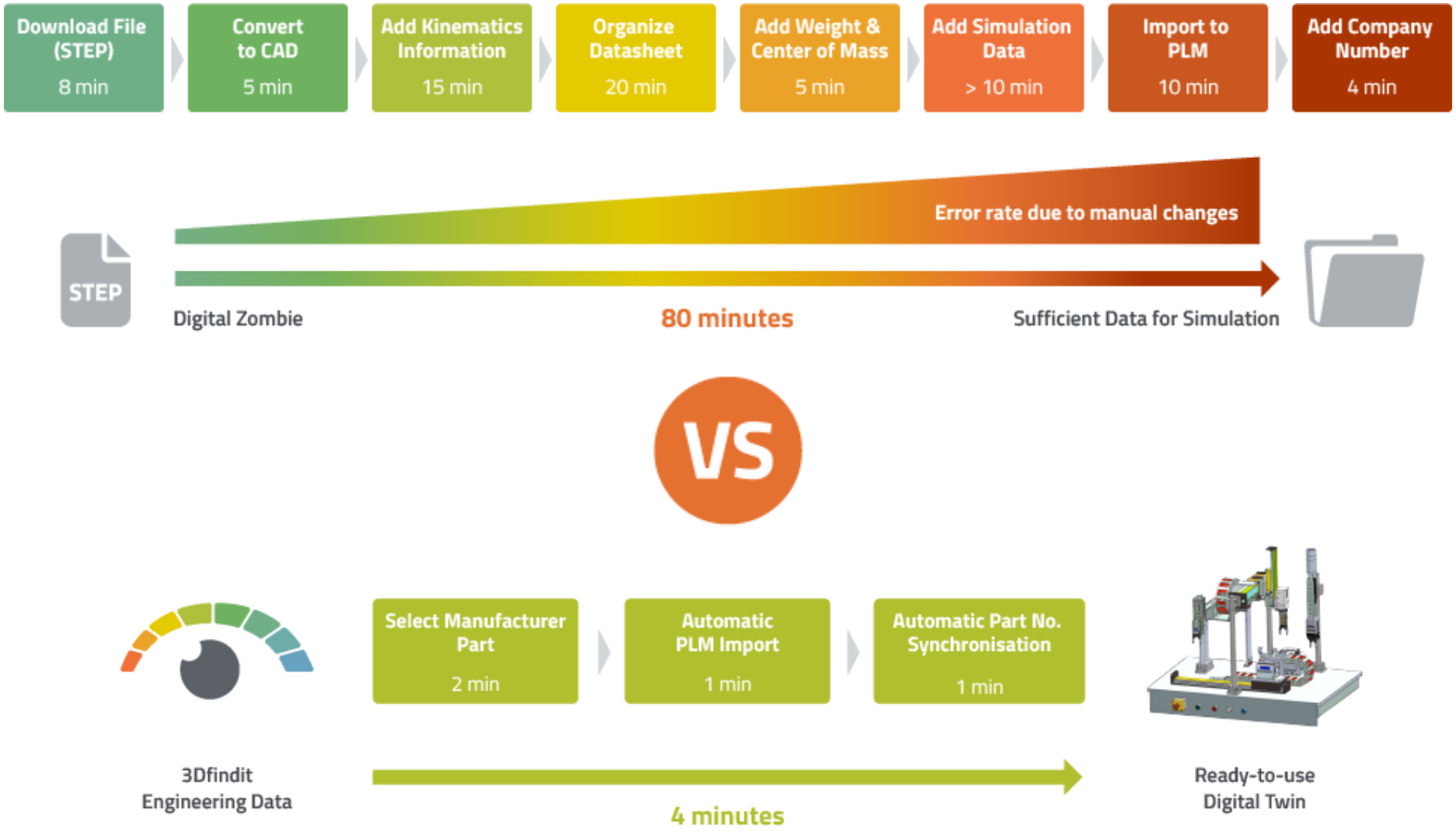

Advantages for engineers

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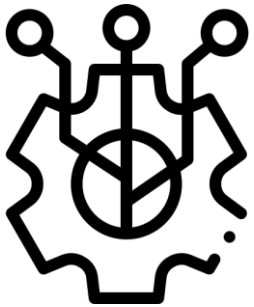
Digital commissioning

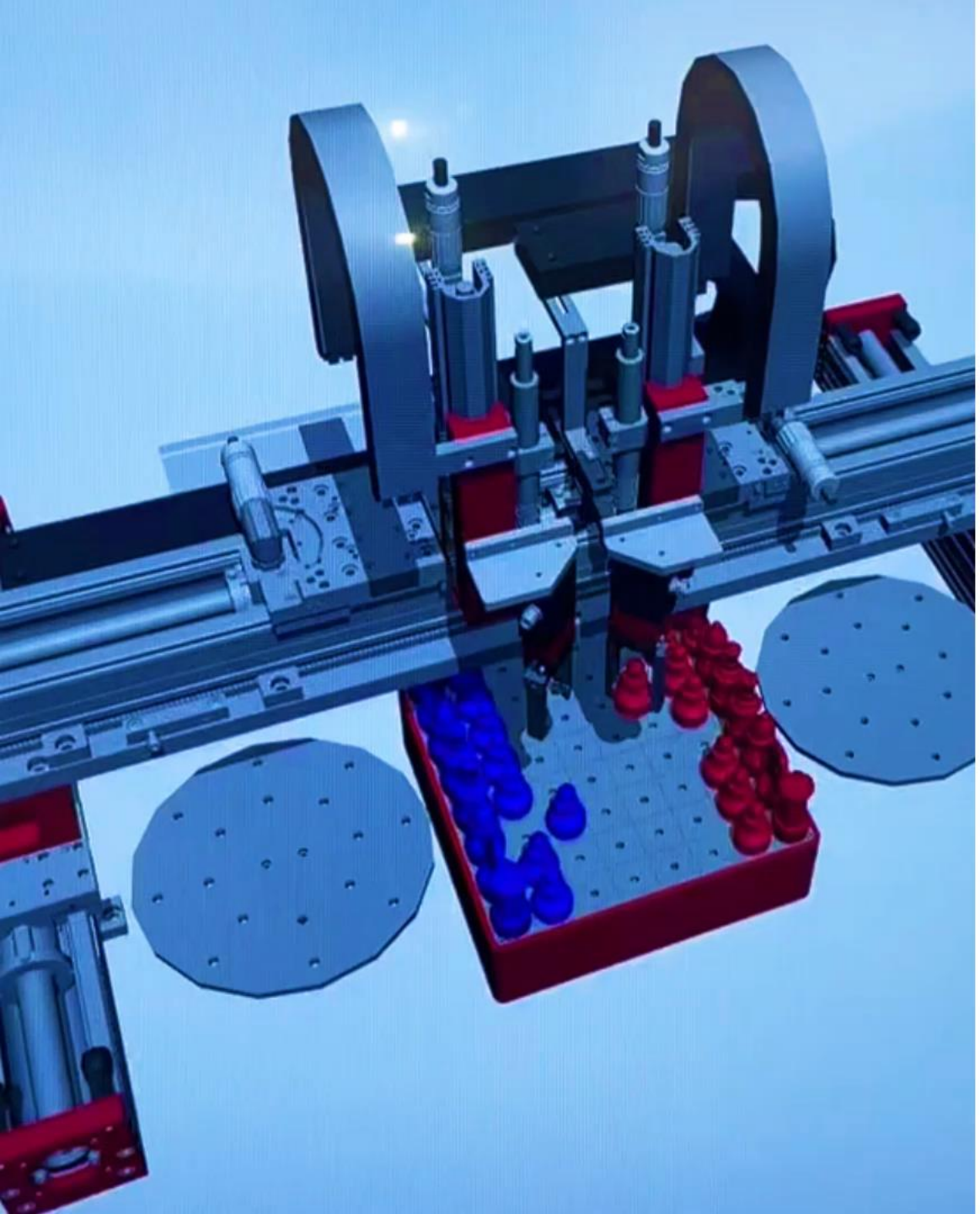


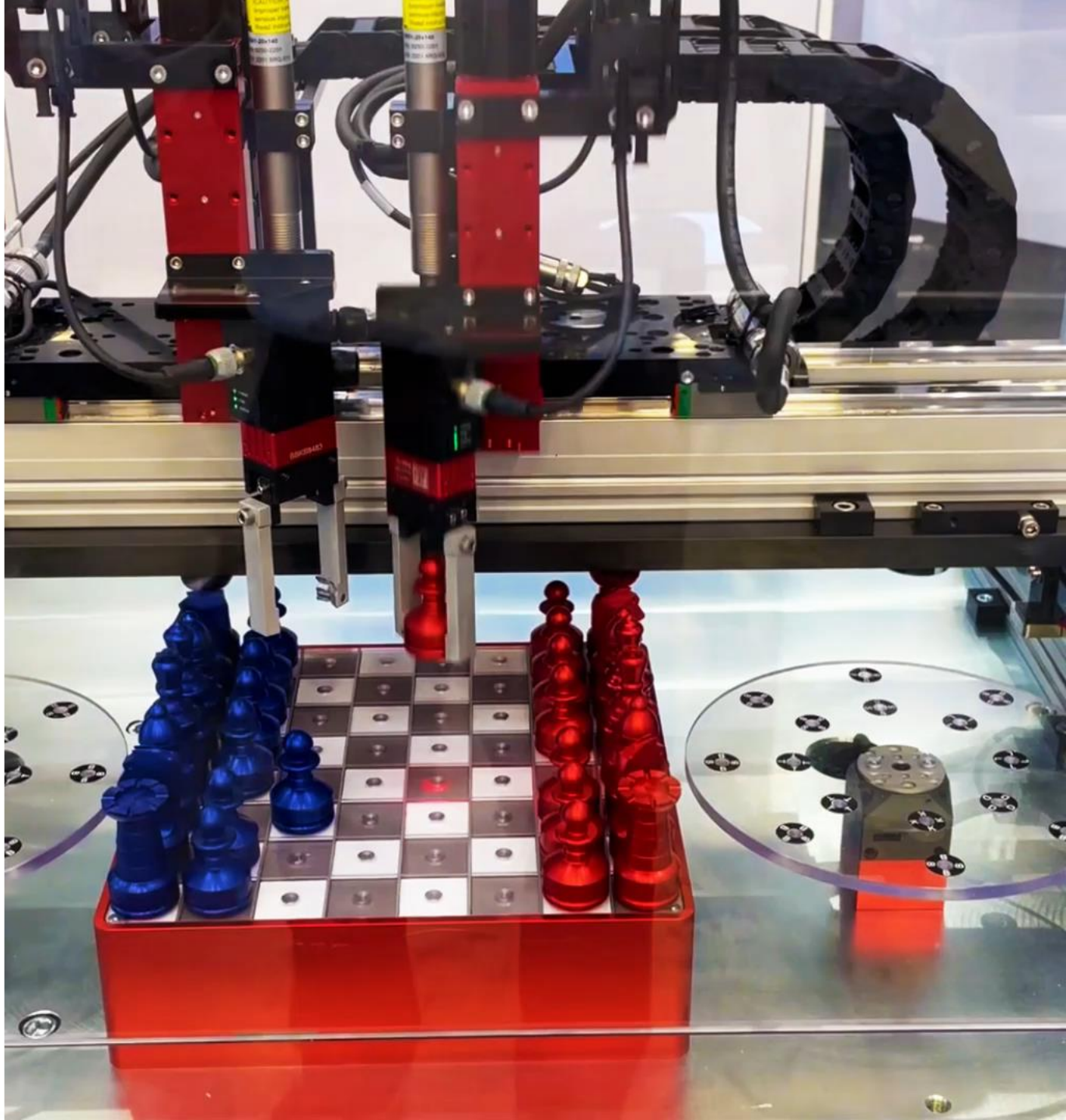
Kinematics:

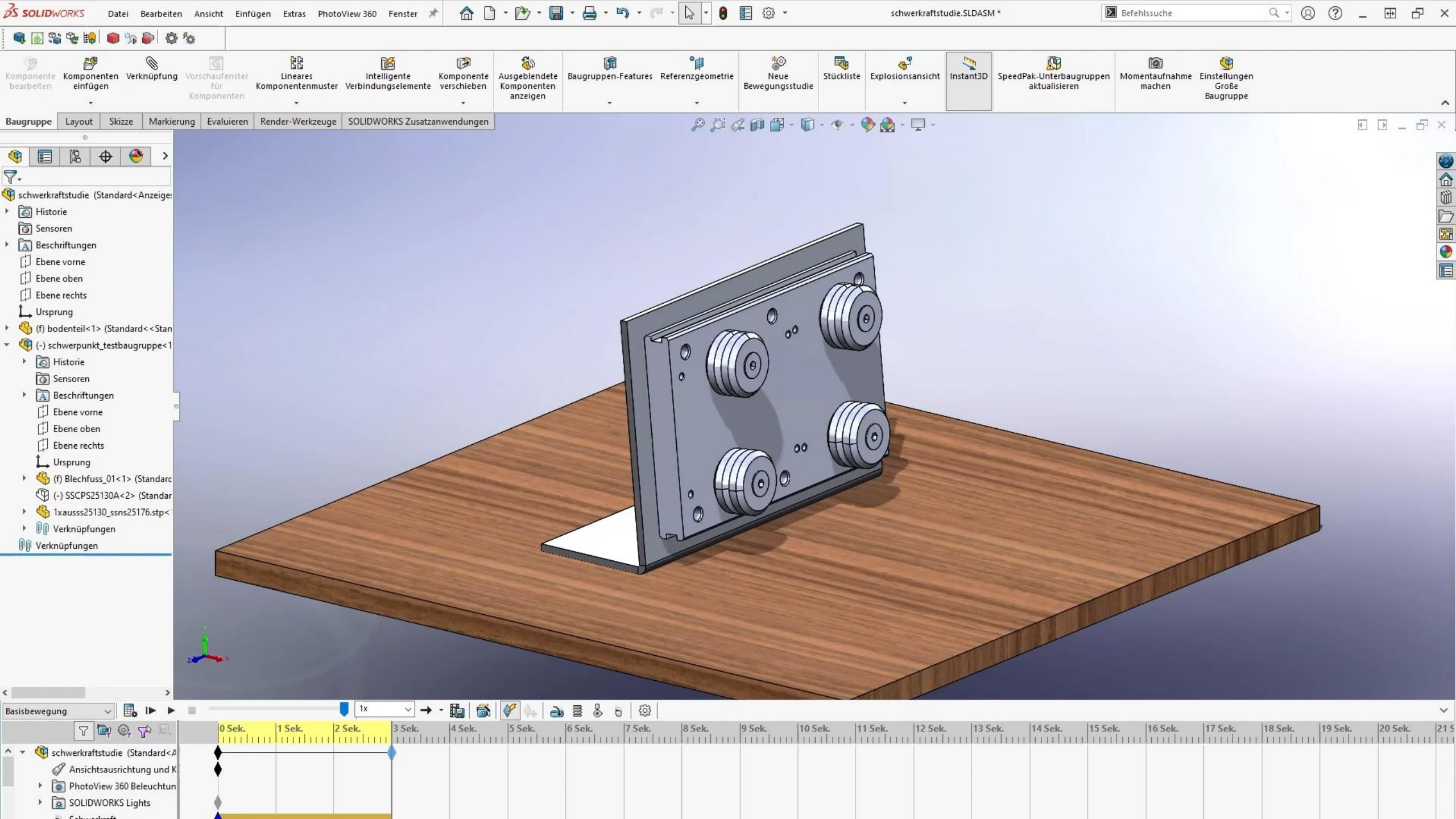
- Detects collisions & interfering contours at an early stage
- Checking of joints & movement
- Optimization of drives & mechanisms

Center of mass:

- Reduces unwanted vibrations and increases the service life of machines
- Optimizes energy consumption through correct placement of drives
- Prevents instabilities & uncontrolled movements






SOLIDWORKS
Datei
Bearbeiten
Ansicht
Einfügen
Extras
PhotoView 360
Fenster
schwerkraftstudie.SLDASM *
Befehlssuche
Komponente bearbeiten
Komponenten einfügen
Verknüpfung
Vorschaufenster für Komponenten
Lineares Komponentenmuster
Intelligente Verbindungselemente
Komponente verschieben
Ausgeblendete Komponenten anzeigen
Baugruppen-Features
Referenzgeometrie
Neue Bewegungsstudie
Stückliste
Explosionsansicht
Instant3D
SpeedPak-Unterbaugruppen aktualisieren
Momentaufnahme machen
Einstellungen Große Baugruppe
Baugruppe
Layout
Skizze
Markierung
Evaluieren
Render-Werkzeuge
SOLIDWORKS Zusatzanwendungen
schwerkraftstudie (Standard<Anzeige
Historie
Sensoren
Beschriftungen
Ebene vorne
Ebene oben
Ebene rechts
Ursprung
(f) bodenteil<1> (Standard<<Stan
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Historie
Sensoren
Beschriftungen
Ebene vorne
Ebene oben
Ebene rechts
Ursprung
(f) Blechfuss_01<1> (Standarc
(-) SSCPS25130A<2> (Standar
1xausss25130_ssns25176.stp<
Verknüpfungen
Verknüpfungen
Basisbewegung
1x
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1 Sek.
2 Sek.
3 Sek.
4 Sek.
5 Sek.
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20 Sek.
schwerkraftstudie (Standard<A
Ansichtsausrichtung und K
PhotoView 360 Beleuchtun
SOLIDWORKS Lights

Advantages for engineers

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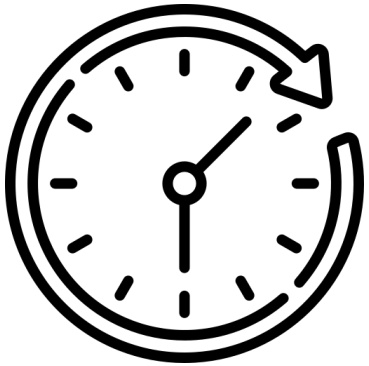
Reduced loading time



STEP:

- Geometry must be reinterpreted
- Feature information is missing - no parametrics
- Data volume often unnecessarily large

Native STEP-Data:

- Optimized internal data structure
- Feature and assembly information is retained
- Direct use in CAD system without reinterpretation

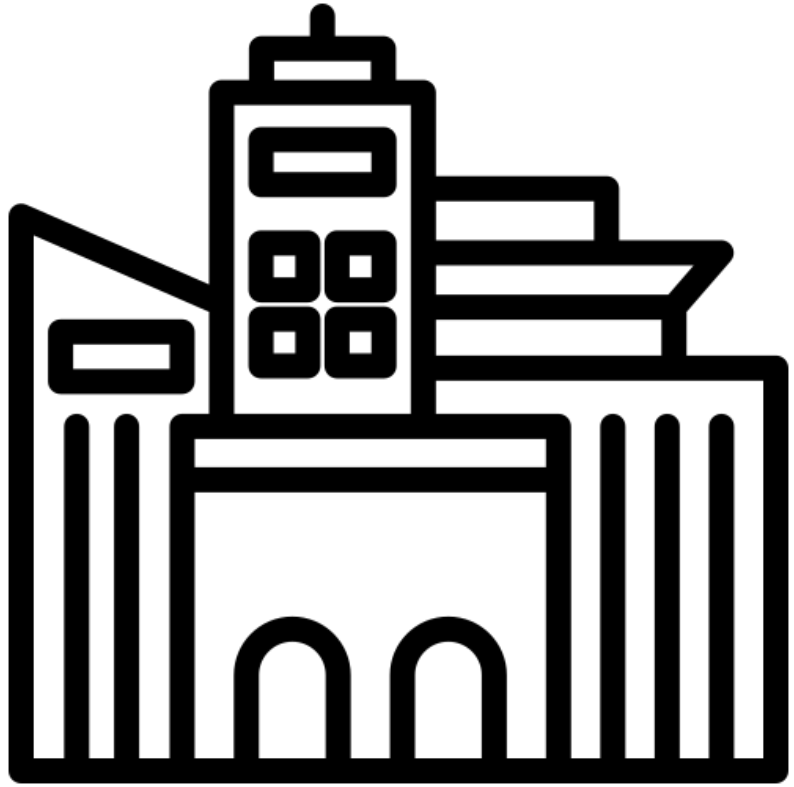
Advantages for engineers

3Dfindit powered by CADENAS

Reduced loading time 

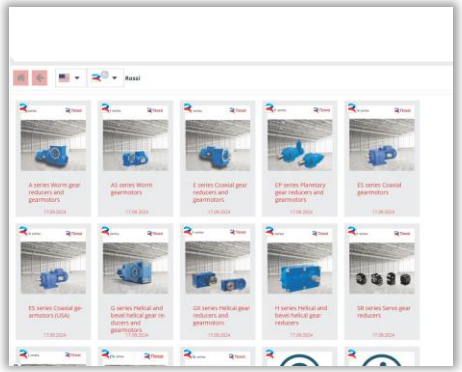
Model size	STEP file loading time	Native CAD-Data loading time
Individual part (single) (e.g. screw, flange, bracket)	~5-10 Seconds	< 2 Seconds
Individual part (complex) (e.g. housing with many contours, milled components)	~30-60 Seconds	5-15 Seconds
Middle assembly (e.g. pneumatic cylinder, gear unit, linear system)	~2-5 Minutes	30-60 Seconds
Large assembly (e.g. machine module, robot arm, complex conveyor technology)	~10-30 Minutes or more	2-5 Minutes
Very large assembly (e.g. machine tool, automation system)	Not practical, extremely long loading times	5-10 Minutes

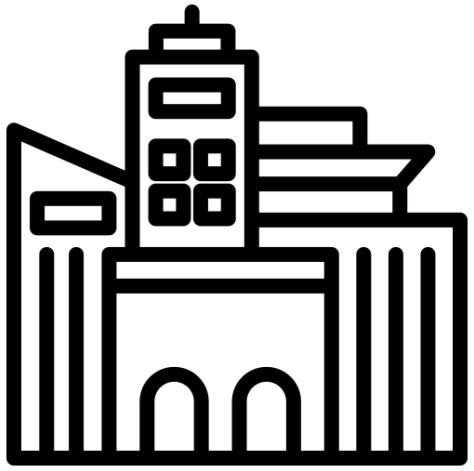
Advantages for manufacturers



Advantages for manufacturers

Reduced effort through the use of a CAD product catalog





Product information

Configurator

CAD formats

Technical product information / filter options

3D/2D Viewer + CAD download in 150+ native formats

Mein Zugang L.Jalowietzki@cadenas.de

CAD Modelle

Geben Sie Sc… …textsuche ein

Janatics Pneumatic › Air Cylinders › Air cylinder (Square type)

Powered by 3Dfindit

Zum Teilevergleich hinzufügen

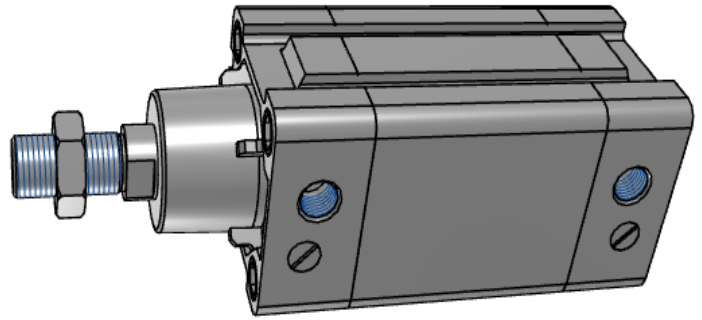
Auswählbare Produkte: 6

Company	Janatics Pneumatic		
Description	Series A23, A24 - Double Acting Cylinder (Square type) Ø32 - 100 mm		
Bill of material	A23 050 025		
BORE Diametar	50	mm	
MODEL Model	Magnetic cylinder		
STROKE	25.000	mm	
POS Position	0 … 25, 0	mm	
MOUN Mountings	None		
KK	M16x1.5		
AM	32	mm	
MM	20	mm	
SW2	16	mm	
12	8.0	mm	

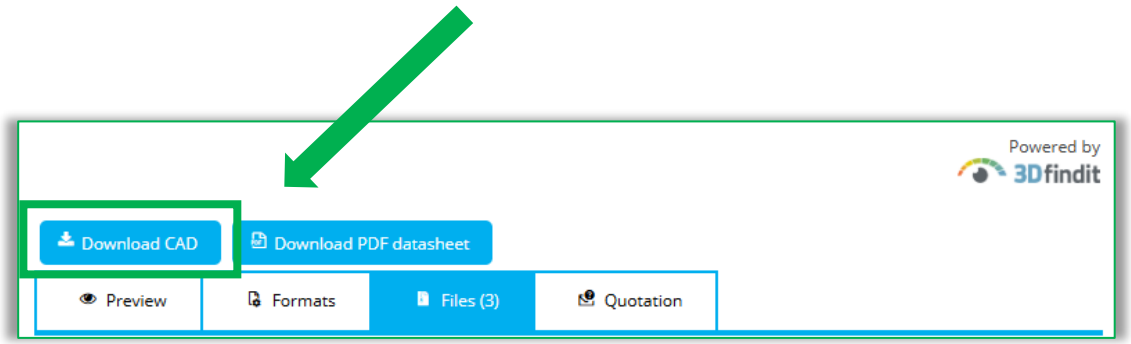
Download CAD MODELL | Generiere PDF-Datenblatt

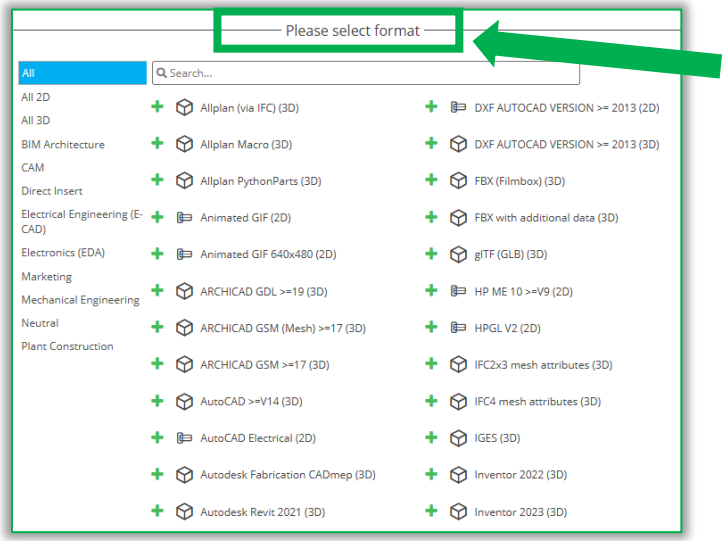
Vorschau | Formate | Dateien | Angebot

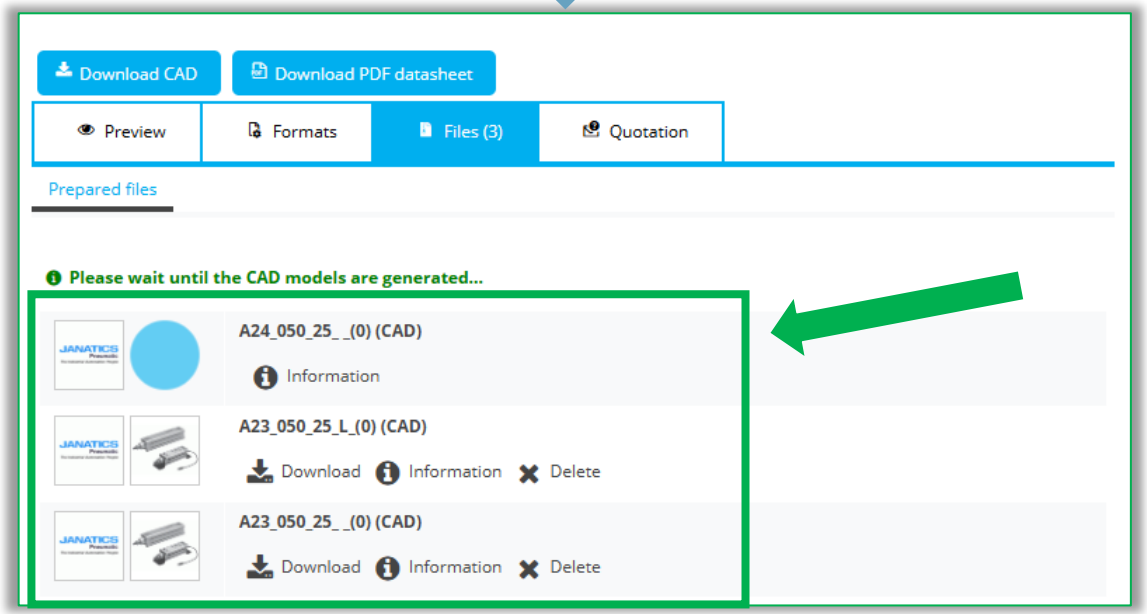
3D | Bemaßung | 2D

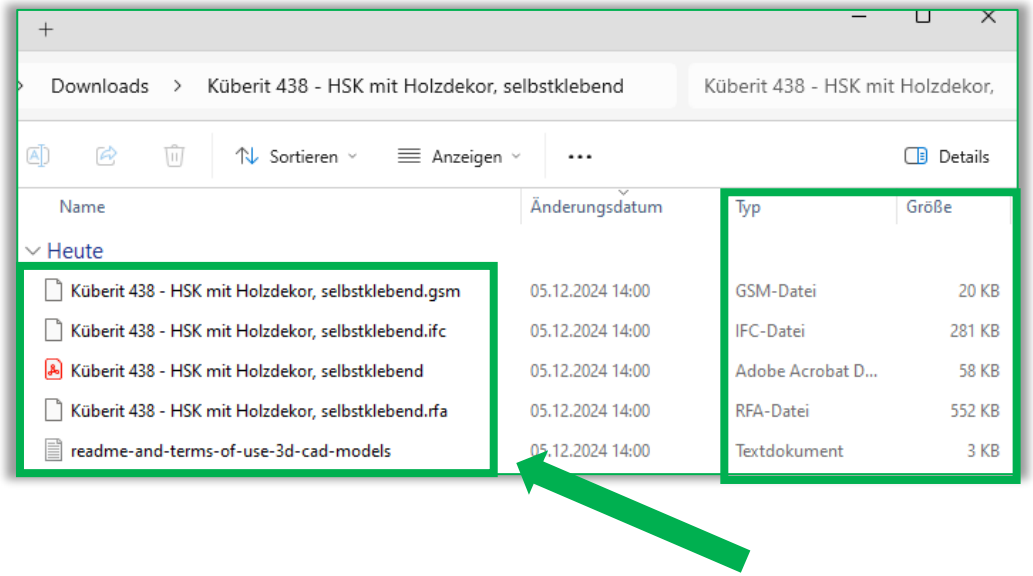


CAD download in 150+ native data formats









Advantages for manufacturers

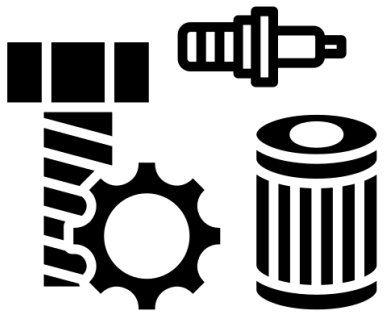
More sales through manufacturer information in the BOM

VON EINEM AUTODESK-SCHULUNGSPRODUKT ERSTELLT

Stückliste

POSNR	BEZEICHNUNG	ANZAHL	ABMESSUNG	ARTIKELNUMMER	DRUCKSTUFE	DURCHMESSER	DIN-NR	HERSTELLER	BEMERKUNG
1	Schachtabdeckung	1	1000/1000	9544-10	---	---	---	Hailo	Bauseits anpassen
2	Hailo Einstiegshilfe	1	1600/50	---	---	---	---	Hailo	Lagerware
3	Hailo Führungshülse	1	1600/50	9699-09	---	---	---	Hailo	---
4	Hailo Schachtleiter	1	2240/300	9633-08	---	---	---	Hailo	---
5	E-Stück Tyton	2	L=600mm	---	PN 16	DN 150	---	---	---
6	Absperrschieber	1	L=190mm	---	PN 16	DN 100	---	---	---
7	T-Stück	1	L=440/210	---	PN 16	DN 150/100	---	---	---
8	X-Stück	1	---	---	PN 16	DN 100	---	---	---

Detail Schachtabdeckung M 1:10



SOLIDWORKS Datei Bearbeiten Ansicht Einfügen Extras PhotoView 360 Fenster

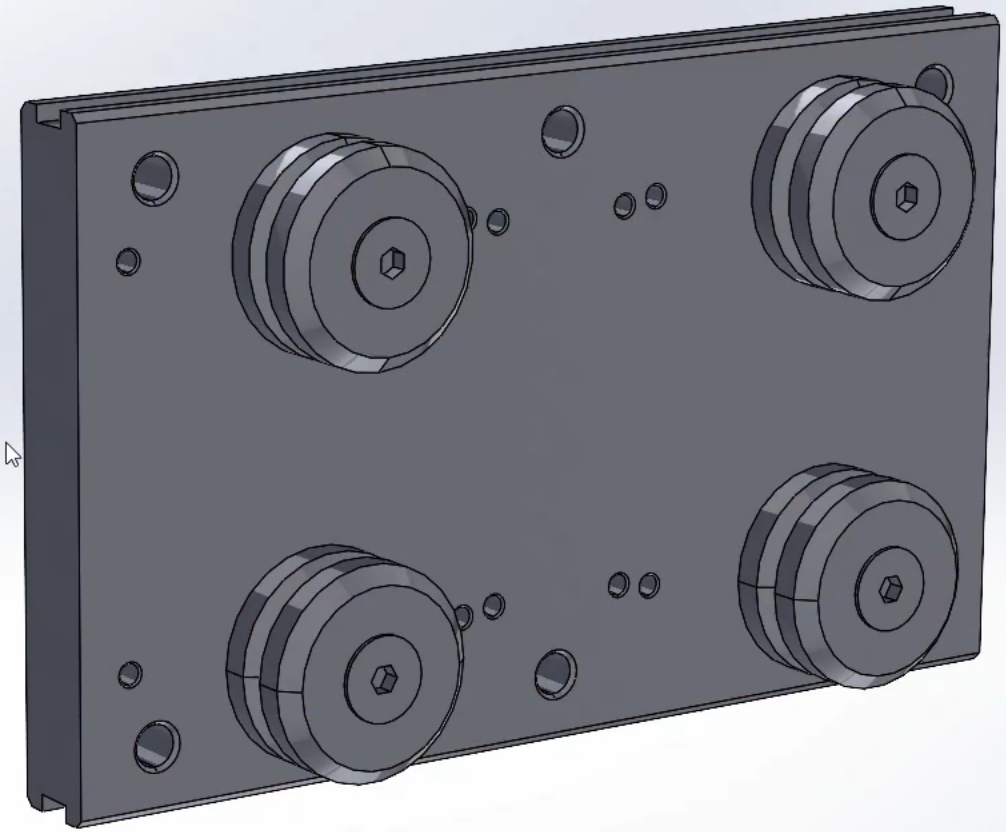
1xausss25130_ssns25176.SLDPRT *

Befehlssuche

Fläche verschieben | Körper verschieben/kopieren | Verrundung | Fase | Lineares Muster | Körper löschen/beibehalten | Fläche löschen | Abspalten | Kombinieren

Features | Skizze | Oberflächen | Blech | Direktbearbeitung | Markierung | Evaluieren | Render-Werkzeuge | SOLIDWORKS Zusatzanwendungen

1xausss25130_ssns25176 (Standard<<
- Historie
- Sensoren
- Beschriftungen
- Volumenkörper(1)
- Material <nicht festgelegt>
- Ebene vorne
- Ebene oben
- Ebene rechts
- Ursprung
- 1xausss25130_ssns25176.stp<1> -
- data



Advantages for manufacturers

91 %

of all products used in the planning are purchased

Conclusion & recommendations

Conclusion:

- **Native CAD data** offers decisive advantages over STEP data
- Native data enables **greater efficiency**, **fewer errors** and **optimized digital processes**
- Manufacturers can gain a **competitive advantage** with high-quality CAD data

Recommendation:

- **Provide native CAD formats** - Increases acceptance among engineers and improves digital processes
- **Use automated CAD data provision** - avoids manual conversion & saves resources

Our offer: CADENAS supports you!

- **Data analysis & optimization:** We check your current CAD data
- **Creation of a central CAD** database for your customers
- **Maximum reach & benefits** through professional CAD data provision

Questions

Farewell

Thank you for your attention!

Leon Jalowietzki
Key Account Manager eCATALOG 3Dfindit