

PARTsolutions

ACTION
ENGINEERING

Model-Based Enterprise Summit 2018

April 2-5

Track 2 Design Recommended Practice and Model-based Definition

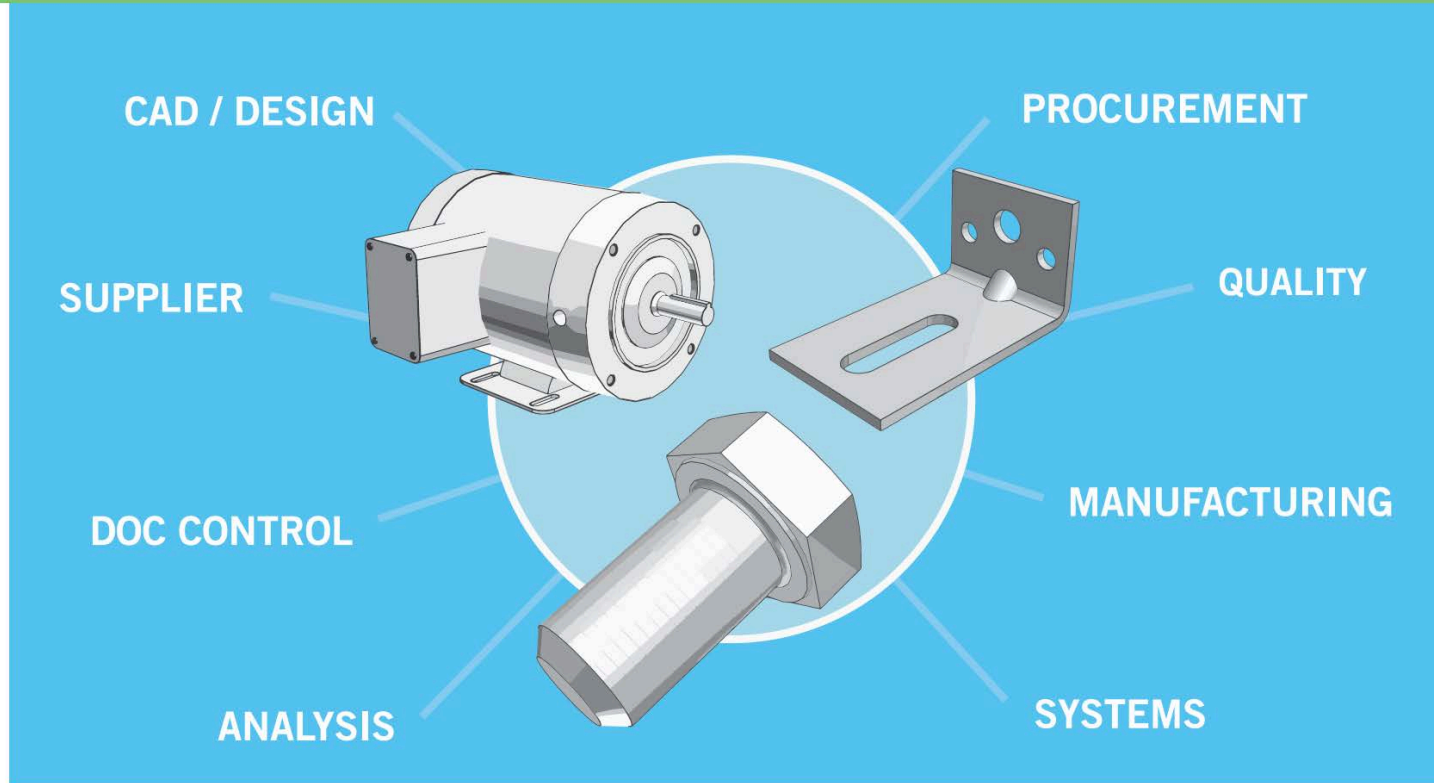
In today's design environment, designers are integrating data that has, over the years, become untraceable to its source information. This continued proliferation of rogue data will bring an Enterprise to its knees. The Department of Defense (DOD) requires traceable source authority data when delivering a TDR and this also applies to standard parts.

In this presentation, you will learn a strategy to mitigate risks in an Enterprise created by the lack of standard part traceability and certification. By exploring the handoff of information between component creator (component manufacturer) and component consumer or integrator (OEMs), we will describe the minimum information needed through that transfer.

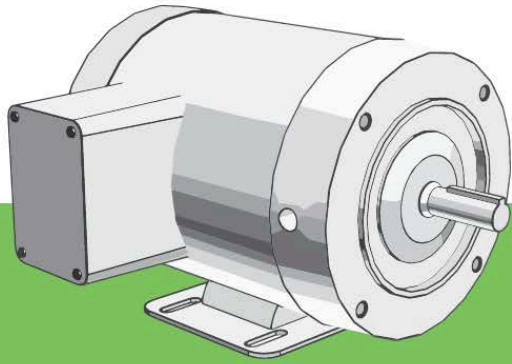
Manufacturers (creators) who are producing physical components and assemblies often have unique challenges as compared to challenges the consumers (OEMs) of those same components face. While creators are most concerned with fidelity, accuracy and how well the part will integrate into the consumer's engineering systems, consumers may be most concerned with cost-reduction, CAD format interoperability and product revision history. The area where these common interests intersect, from a Supply Chain perspective, is where Model Based Definition (MBD) as part of a larger Model Based Enterprise (MBE) comes to fruition. Learn the minimum amount of information in the model needed to leverage standard parts within MBD assemblies.



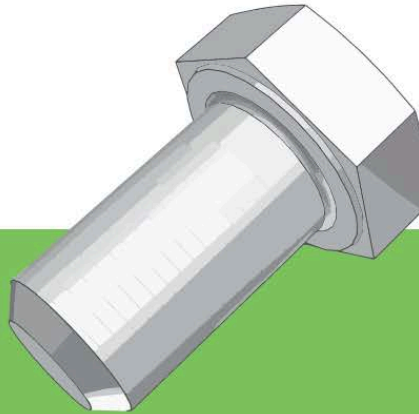
How MBE Powers Your Whole Organization



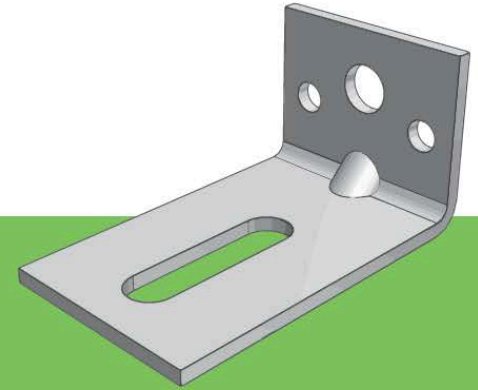
The MBD Inventory



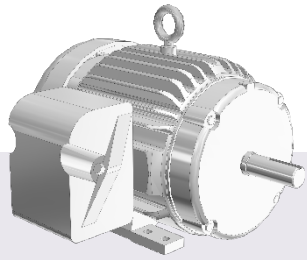
COMMERCIAL STANDARD PARTS



INDUSTRY STANDARD PARTS



COMPANY STANDARD PARTS



The MBD Inventory

Commercial Parts

H01540-10-21-7x0.25

Table Vertical

Enter a search term...

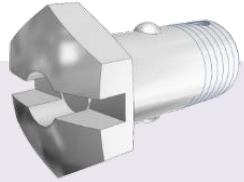
ERP variables
 Main variables
 Secondary variables
 Topology variables

CT	MT	BORE	SAE	RD	CD	RS	STROKE	ER	LER	ERD	ERDL	
Cylinder Type	Mounting Style	Bore (INCH)		Rod Diam...	Cylinder ...	Rod End Style	Stroke (IN...	Extended Rod	Extended ...	Extended ...	Extended ...	
5	Single Rod End	10 Tie-Rods Extended Both Ends (MX1)	4	#12	1 3/4	H01540	Standard Male (KK2)	0.25	Without Extended Rod	0	N/A	0
6	Single Rod End	10 Tie-Rods Extended Both Ends (MX1)	5	#12	2	H01550	Standard Male (KK2)	0.25	Without Extended Rod	0	N/A	0
7	Single Rod End	10 Tie-Rods Extended Both Ends (MX1)	6	#16	2 1/2	H01560	Standard Male (KK2)	0.25	Without Extended Rod	0	N/A	0
8	Single Rod End	10 Tie-Rods Extended Both Ends (MX1)	7	#20	3	H01570	Standard Male (KK2)	0.25	Without Extended Rod	0	N/A	0

Part information | Topology information | H01540-10-21-7x0.25-PIP1NN1-00... | Technical details (19) | 2D derivation

Language: English

Standard number: Series H
Description: Heavy Duty Hydraulic Cylinders
Company: Milwaukee Cylinder
Last changed: 8/29/2014 1:54:40 AM
Unit: INCH
Path: C:\cadenas\data\23d-lib\milwaukee\cylinder\h...
Project type: Assembly table



Industry Standard Parts

The MBD Inventory

NA0037-100006

Table Vertical

Enter a search term...

ERP variables Main variables Secondary variables Topol

	PN	THD	MAT	HT	FIN	GRIP	LG	SIZE	HEAD	SHANK	B	C	DMAX	DMIN
	Part Number	Thread Si...	Material	Heat Trea...	Finish	Grip +0.2/...	Length +...	Shank Size	Head Undrilled/...	Shank Undrilled/Dri...	B Diamet...	C - Min. [...]	D Diamet...	D Diamet...
● 3	NA0037-080004	MJ8 x 1	Titanium Alloy	1100 MPa	None	4	15.5	Standard Shank	Undrilled Head	Undrilled Threads	12.2	14.3	7.987	7.962
● 4	NA0037-100006	MJ10 x 1.25	Titanium Alloy	1100 MPa	None	6	20.5	Standard Shank	Undrilled Head	Undrilled Threads	16.0	18.9	9.987	9.962
● 5	NA0037-120006	MJ12 x 1.25	Titanium Alloy	1100 MPa	None	6	22.0	Standard Shank	Undrilled Head	Undrilled Threads	18.0	21.1	11.984	11.959
● 6	NA0037-140008	MJ14 x 1.5	Titanium Alloy	1100 MPa	None	8	27.0	Standard Shank	Undrilled Head	Undrilled Threads	21.0	24.5	13.984	13.959

Part information Topology information

Language: English

Standard number: NA0037

Description: Bolt, Tension, Close Tolerance, Hexagon Head, Titanium Alloy, 1100 MPa Ft_u, Metric

Company: AIA NAS

Last changed: 10/1/2015 12:47:26 AM

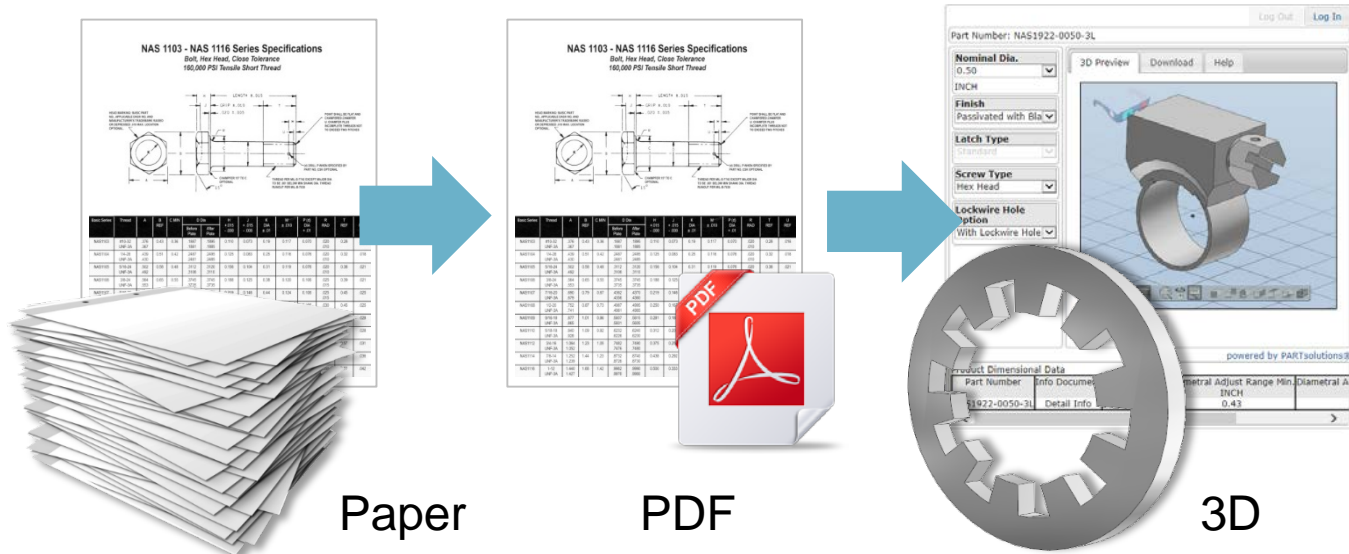
Unit: mm

Path: <C:\cadenas\data\23d-libs\aianas\prj\bolts\na0037>

Project type: 3D project

NA0037-100006 Technical details (1) 2D derivation

Evolution of Industry Standards



The MBD Inventory



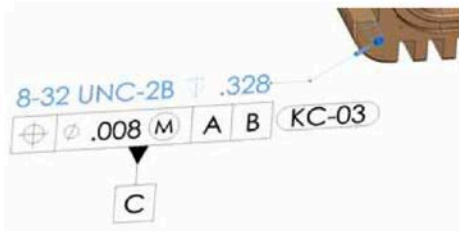
Company Parts



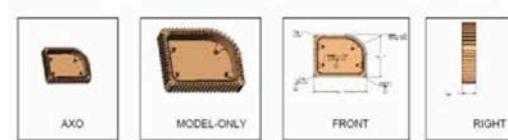
Geometry:
The 3D shape of a product.



Attributes:
The “hidden information” such as metadata. e.g. part number, description, and revision. This information is not visible (or displayed, but is available upon interrogation of the annotated model).

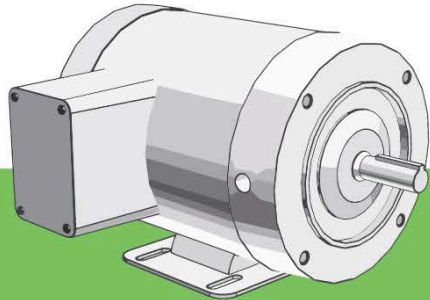


Annotations:
Visible dimensions, tolerances or notes about a design. Priority on machine readable geometric tolerances is preferred, over humanly readable basic dimensions.

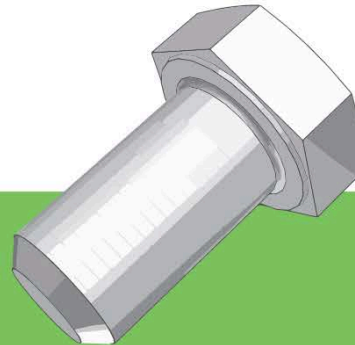


Presentation:
A combination of saved views (snapshot of orientation and zoom) of the model and groupings of selected annotations (displayed tolerances and notes).

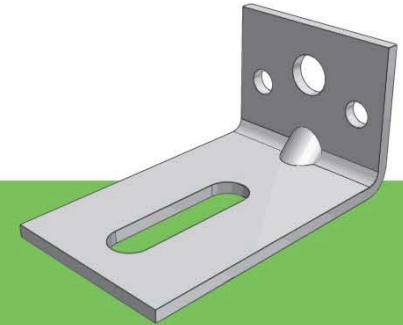
MBD/MBE Inventory Summarized



COMMERCIAL STANDARD PARTS



INDUSTRY STANDARD PARTS



COMPANY STANDARD PARTS

GEOMETRY



ANNOTATIONS

LIMITED USE

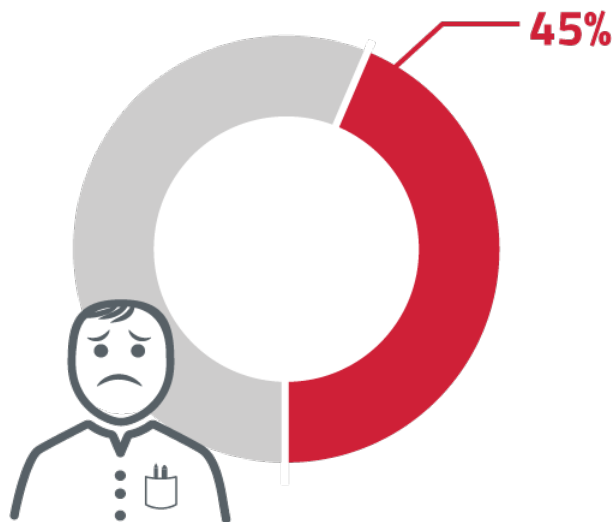


ATTRIBUTES



PRESENTATION





45% of engineering time is wasted
searching for or redrawing parts

that's non-value added time

- Aberdeen Group

Thank You



eBook
How Engineering
Teams Achieve MBD
Using Parts
Management Tools

<http://go.partsolutions.com/parts-management-301-mbe-mbd-for-manufacturers>

Jennifer Herron



jennifer@action-engineering.com

action-engineering.com

Tim Thomas



tim.thomas@partsolutions.com

partsolutions.com