# SMC 2D/3D CAD Library

# <u>User's Guide</u>



SMC Corporation

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# 1. Program overview and basic operation.

In this chapter, we will give an overview of the program, including how to save 3D CAD files from the DVD-ROM.

Please, read carefully this few steps before using the program for the first time.

### Overview

"SMC 2D/3D CAD Library" is based on PARTsolutions (PARTdataManager program) by CADENAS, a three-dimensional CAD data collection. In addition of neutral CAD data formats, it is possible to generate native CAD format data, as described below.

Direct generation of native files.	Inventor 2014~2018
Each one of these CAD format can be	SolidWorks $2012 \sim 2017$
used if it is installed on your	Pro/Enginner Wildfire
environment, however, if Direct	(Creo Parametric 1.0-3.0, Creo Elements/Pro
generation is not available on your	5.0)
environment, please use the Macro	
export feature.	
Can be converted to native files.	CATIA V5
(Macro file export)	
Neutral format	STEP 3D
	IGES 3D
	SAT 3D
	DXF 3D
	DXF 2D

## 1.1. Operating environment

These are the computer requirements to run PARTsolutions.

```
OS (Operating System)
```

Windows7, Windows8, Windows10

CPU

Intel Pentium 800MHz or above.

Memory

700MB or above free memory, under the conditions CAD system running.

#### DVD-ROM drive

#### Graphic card

64MB video memory; OpenGL compatible; 3D hardware acceleration recommended

## 1.2. Basic operation

#### 1.2.1. 2 ways of using this DVD.

- (1) Directly from your DVD-ROM drive.
- (2) By copying the program to your PC.
- (1) Directly from your DVD-ROM drive.
  - 1 Insert the DVD into your computer's DVD-ROM drive.
  - 2 Upon first launch, english language will be displayed. You can choose other languages in the upper-right corner of the main window.

Language:	JP	GB	CN	KR
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3 Clicking the "PARTdataManager" item will then launch PARTdataManager program and three-dimensional CAD library.



Please proceed to "1.3.2 product selection and CAD data save".

The main menu consists in the following items.

- ■PARTdataManager  $\Rightarrow$ Launch main program.
- ■Legal informations  $\Rightarrow$  Please read before use.
- ■User's guide (PDF)  $\Rightarrow$ Display this manual.

(2) By copying the program to your PC.

This is the use we recommend, as it will greatly reduce the program's response time.

- 1 Insert the DVD into your computer's DVD-ROM drive
- 2 Create a folder (by example  $\underline{C: \$SMC}$ ) on your computer's hard drive and place the content of the DVD in this folder. Then, click on the start.bat file from the fodler you created.
  - data
    software
    autorun.inf
    cadenas.ico
    start.bat
- 3 Upon first launch, english language will be displayed. You can choose other languages in the upper-right corner of the main window.

				-	-
	Language:	JP	GB	CN	KH
-					

5 Clicking the "PARTdataManager" item will then launch PARTdataManager program and three-dimensional CAD library.



#### 1.2.2. Product selection and CAD data save

1 At startup, PARTdataManager will display the screen below.

PARTdataManager 11.00 - PARTsolutions by CADEN	NAS	Terrera .	a l'include	
Transfer to CAD 🔹 💾 DXF 2D 🔹	2D derivation			
Reyword(s) for full text search	▼ Search in 😂 all catalogs	▼ fo	or 🔁 parts and part families 👻	Version
Add search function: A=3 <u>Variables s</u>	earch			
🔍 Start search 👻				
Assistant 😂 Part selection 🗞	Part view Q Search results	+		
Structure 👻 🗆 🗙	Part selection		• 🗆	Filter Assistant 🔹 🗆 🗙
📚 🔶 🛗	😂 Catalogs 🕨		<b>111</b> 8=	
Catalogs	SMC Corporation			
▲	16/02/2018			
SMC Corporation	Ø SMC			
	<b>C</b>			
				Details 🔹 🗖 🗙
				Language: English
				User

2 This is PARTdataManager's selection screen. From the tree view on the left, or the illustration menu on the right, you can select a product by double-clicking on it. In the following we will use "CA2 Air Cylinder" from "Actuator / Standard Air Cylinder" folder as an example. First we select CA2-Z Cylinder.



3 The screen now changes to PARTdataManager's selection screen. In the red frame below, product parameters, such as Bore size, Mounting bracket and Stroke can be specified. When these options are changed, the 3D preview will be updated, and the corresponding three-dimensional CAD model will be displayed.



Automatic preview generation can take a long time depending on the data complexity. It is possible to turn it off by pressing the "Recalculate 3-D geometry on/off" button below. It is recommended to use the "off" setting for complex data.

PARTdataMana	ager 11.0	0 - PARTSO	lutions by C/	ADENAS - D:¥U	eda_Offline¥o	ffline¥V11¥
<u>F</u> ile <u>E</u> xport	<u>V</u> iew	E <u>x</u> tras	<u>W</u> indow			
Transfer	<u>⊡</u> 2D	derivatio	n	Ctrl+2	D derivation	
	<u>//</u> Ass	sistant			Coardh in	; 💌 all a
ABC Re	🖌 <u>T</u> hr	reads on/	off	Ctrl+G	Search in	
🖸 Add o	🕅 Red	calc autor	matically			
• Start sea	arch	·				

4 After displaying the specified product, we can finally export the corresponding 3D CAD data by selecting the desired format from the "Export in file" menu, as shown below.

PARTdataManager 11.00 - P/	ARTsolutions by CADENAS - D:¥Ueo	la_Offline¥offline¥V11¥2018(	0219_OfflineV11sp2	p¥actuator¥standa	rd_air_cylinder¥c	caz
<u>F</u> ile <u>E</u> xport <u>V</u> iew E <u>x</u> t	ras <u>W</u> indow <u>?</u>					
Karansfer to CAD 🗸	🖶 DXF 2D 👻 📴 2D	derivation				
< 📝 ABC Keyword(s) for	2D system neutral	Search in 😂 all catalo	as		-	f
	3D CAD formats	岸 Autodesk Inventor	•			1
Add search functi	3D system neutral	🚔 CATIA	•			
🔍 Start search 👻		💾 Creo Elements	•			
		岸 Creo Parametric	•			
Assistant 😂 Parl	selection 😵 Part vie	Solidworks	🕨 📑 Solidv	vorks 2012		
CA2C50-25Z			📙 Solidv	vorks 2013		
Table Vortical			岸 Solidv	vorks 2014		
Tuble Vertical			Bolidv	vorks 2015		_
Enter a search term		< >	🛛 🖉 🚔 Solidv	vorks 2016	econdary	Vā
E	ORE MOUNT	MAGNET 💉	AUTOS 🚔 Solidv	vorks 2017 😓	ING 💉	
Bor	sia Mounting bypa	Duilt in reagnet	Auto avritale	Londmin	tumber ··· T	Tut
11 CA2G50-25Z	50 (G) Head side flange	(-) Without magnet	N/A	N/A	N/A	(-)

- 5 Specify the file name in the next dialog box.
- 6 Then press OK to generate the file.

Ë	Export using Solidworks 2017 format	8	×				
ſ	Filter						
	Geome	try					
	Convert drafts to sweeps						
	Split pattern						
	Convert holes						
	Add mesh data to single part						
	Add alternative format for part:						
	Additional info	ormation					
	Usage:	None -	·				
	3D view:	Always -	·				
	2D view:	Always 🗸	•				
	3D dynamic:	Always -	•				
	Resolution for images in pixels (width):	0					
	Resolution for images in pixels (height):	0					
	Open directory after export(once)						
	Destination directory: L:#Users#XXXX#Documents X						
		OK Cance	el				

(For more information, please refer to "2.2 CAD data export function".)

# 2. Individual features

## 2.1. Component selection

#### 2.1.1. Switching part views

There are 2 views available to specify the details and options of the selected products.

It is possible to switch between these views from the icons below.

Standard view (Table view of parameters)

PARTdataManager 1	1.00 - PARTsolutio	ons by CADENAS - D:¥Ueo	ta_Offline¥offline¥V11¥2018	0219_OfflineV11sp2p	¥actuator¥stan	dard_air_cylinde	r¥ca2¥ca2_z_asmtab.prj				
Eile Export Viev	v E <u>x</u> tras <u>W</u>	indow <u>2</u>									
Transfer to C	AD 👻 🛱 D	XF 2D 👻 💼 2D	derivation								
ABC Keywon	d(s) for full tex	t search 🔻	Search in 😂 all catalo	ogs			✓ for	rt families	•		Version
Add search	function: A=3	Variables search									
<ul> <li>Start search</li> </ul>	•										
		8									
Assistant	Part selection		Search re	sults +							
CA2C50-25Z											- 🗆
Table Verti	cal										
Entor a coarch to			<	> 🔽 🌄 Main vi	ariables 🔽	Secondar	y variables				*
	BORE	MOUNT	MAGNET 🧪	AUTOSWITCH 🖉	LEAD 🧭	SWSING 🖉	MATERIAL 💉	STROKE 🖉	POS 🜌	THREAD1 🖉	BOOT ^
	Bore siz…	Mounting type	Built-in magnet	Auto switch	Lead wir…	Number …	Tubing material	Stroke [···	Position …	Port thread	Rod boot
11 CA2G50-25Z	50	(G) Head side flange	(-) Without magnet	N/A	N/A	N/A	(-) Aluminum tube	25	0	(-) Rc	(-) Without boot
12 CA2C50-25Z	50	(C) Single clevis	(-) Without magnet 🜌	N/A 🕋	N/A 🕋	N/A 🕋	(-) Aluminum tube 🜌	25 🗾	0 🗾	(-) Rc 📝	(-) Without boot
13 CA2D50-25Z	50	(D) Double clevis	(-) Without magnet	N/A	N/A	N/A	(-) Aluminum tube	25	0	(-) Rc	(-) Without boot
14 CA2T50-25Z	50	(T) Center trunnion	(-) Without magnet	N/A	N/A	N/A	(-) Aluminum tube	25	0	(-) Rc	(-) Without boot
15 CA2B63-25Z	63	(B) Basic	(-) Without magnet	N/A	N/A	N/A	(-) Aluminum tube	25	0	(-) Rc	(-) Without boot +
t information T	analam inform	ation – E V	CA3CE0 3E7(0, 0, 0)	Technical details (7)	2D darius	ntion			to Accord	ah r	
	opology inform		CA2C30-232(0_0_0)	recrificar decails (7)	2D deriva		~		ds Asserii	ulter)	
Name		î			Y			Direc	cory (17 rest	nis)	¥
X-Dimens	lion				-	-		8	CA2-Z/C···	S CA2W-Z	
Y-Dimens	ion			<u></u>	100				094		inc in the second s
Z-Dimens	sion			44	La Carlo	×			2000	1	
•		•							- Alex	¥.	
Show features	s in 3D			♥♥₽₩₡				8	Discon	Co Discon	-
			2017/11	/15 #35							Jser

On the table, size etc. will be displayed. Select a row to activate it.

By selecting white cell information, like Bore, Mount, displayed for each product, the table can be easily narrowed.

Y	BORE	MOUNT	MAGNET 🧭	AUTOSWIT
	Bore siz…	Mounting type	Built-in magnet	Auto switch
		(C) Single clevis 🛛 🗴		
1 CA2C40-25Z	40	(C) Single clevis	(-) Without magnet	N/A
2 CA2C50-25Z		(C) Single c 📭 Co	py ((C) Single clevis)	N/A
3 CA2C63-25Z	63	(C) Single c Se	t filter ((C) Single clevis)	N/A
4 CA2C80-25Z	80	(C) Single clevis	(-) Without magnet	N/A
5 CA2C100-25Z	100	(C) Single clevis	(-) Without magnet	N/A

A yellow cell, like Stroke, Autoswitch, indicates a selection can be edited by clicking into it.

7	BORE	MOUNT	MAGNET 💉
	Bore siz…	Mounting type	Built-in magnet
		(C) Single clevis 🛛 🗴	
1 CA2C40-25Z	40	(C) Single clevis	(-) Without magnet
2 CA2C50-25Z	50	(C) Single clevis	(-) Without magnet 💉
3 CA2C63-25Z	63	(C) Single clevis	(-) Without magnet
4 CA2C80-25Z	80	(C) Single clevis	(D) With magnet
5 CA2C100-25Z	100	(C) Single clevis	
•			
t information Top	ology informa	ation 🝷 🗆 🗙	× ×

By selecting the value 63 as the Inner Diameter of the tube below, it is possible to narrow the choices that can be specified for the Stroke.



#### Vertical view

PARTdataManager 11.00 - PARTsolutions by CADENAS - D:WUeda_O	ffline¥offline¥V11¥20180219_OfflineV11sp2p¥actuator¥standard_air_cylinder¥ca2¥ca2_z_asmtab.prj	
<u>Eile Export View Extras W</u> indow <u>?</u>		
🦧 Transfer to CAD 👻 💐 Solidworks 2017 🔹 📑	a 2D derivation	
Reyword(s) for full text search S	iearch in 🗐 all catalogs 🔹 🗸 for 🔁 parts and part families 👻	Version
Add search function: A=3 <u>Variables search</u>		
• Start search 👻		
Assistant 😂 Part selection 🇞 Part view	Q Search results +	
CA2F63-125Z -	CA2F63-125Z(0_0_0) Technical details (7) 2D derivation -	ion Topology information 👻 🗆 🗙
Table Vertical		Name
BORE Bore size [mm] 63 40 MOUNT Mounting type 50		X-Dimension Y-Dimension Z-Dimension Major Dimension
MAGNET 80 Built-in magnet 100	Y	Minor Dimension
Auto switch N/A		Show features in 3D
LEAD N/A	Z	Links Assembly - X
SWSING Number of auto switc N/A		Directory (17 results)
MATERIAL Tubing material (-) Aluminum tul -		CA2-Z/C··· CA2W-Z···
STROKE Stroke [mm]		i 🙀 🚳
Postion [mm] 0 V	Ť	☆ [Discon…
Recalculate 3D geometry on/off	₂┶┷┵⊟∎∎₫€€₩₽₽₩₽₽₽₽₽	
	2017/11/15 #7	User

When Vertical view is selected, the optional selection (size or switches) can be configured one by one.

### 2.1.2. Screw thread

It is possible to turn on and off the display of the screw threads in the preview.

As shown below, when the screw thread preview is set to off, the model will show empty screw holes.

PARTdataManager 11.00 - PARTsolutions by CADENAS - D	:vUeda_OfflinevofflinevV11v20180219_OfflineV11sp2pVactuatorVstandard_air_cvlinderVca2Vca2_z_asmtab.prj	
<u>File Export View Extras Window ?</u>		
Transfer to CAD 👻 💐 Solidworks 2017	▼ 😰 2D derivation	
Reyword(s) for full text search	Search in 🗃 all catalogs 🔹 for 🔁 parts and part families 🔹	Version
• Add search function: A=3 <u>Variables search</u>		
• Start search 👻		
Assistant 😂 Part selection 🏠 Pa	rt view 🔍 Search results 🔹	
CA2F63-125Z	CA2F63-125Z(0_0_0) Technical details (7) 2D derivation	on Topology information - X
Table Vertical		Name
		d General
Position [mm]		X-Dimension
THREAD1 Port thread (-) Rc V		Z-Dimension
BOOT		Major Dimension
Rod boot		Medium Dimension
CUSHION Cushion (-) Air cushion V		< III >
Stope Standard stroke 👻		Show features in 3D
сом		Links Assembly - X
Comment		Directory (17 results) 👻
Pivot bracket N/A		🏠 CA2-Z/C··· 🍄 CA2W-Z···
RODB Rod end bracket (-) Without		09K 09K
OMSC (-) Without orde V		
THREAD on off		Sa (Diccon
	- ABCE 201 MODELE ORGOODE	
	2017/11/15 #7	User



## 2.2. CAD data export function (2D - 3D)

Export conditions depend on the selected format.

For intermediate formats such as STEP and DXF, and CAD macro files, it is possible to export data even if the corresponding CAD system is not installed on your environment. However, in order to export native CAD formats, the corresponding CAD system must be installed.

### 2.2.1. Caution

Export using STEP	format		?
Filter			
	Geometr	rv l	
🔲 Convert drafts to s	weeps		
🔲 Split pattern			
Convert holes			
-			
Destination file: caden	as¥My Documer	nts¥CA2F63-25Z_0_0_(	)stp 🛄
Version: STEP	AP 203		-

On the 3D export data dialog box, you will have choice between 3 options.

In case the exported data differs from the preview displayed in PARTsolutions, you can use one of these options to resolve this issue.



(Left: Original model / Right: data exported in Solidworks)

In the above example, the original model has been created using pattern array feature, but the CAD exported result hasn't been properly created.

Such problem can be avoided by choosing the "Split pattern" option. Although we fully understand this might be troublesome in some cases, we kindly ask you to use this geometry option when you encounter such a problem.

Note : if you don't check any geometry option, the CAD exported model will be created using pattern array feature. In most cases, this feature doesn't lead to any problem. However, there are some rare cases where the CAD data can't be exported properly using pattern array feature. By using this option, the CAD data will be exported without pattern array. In this case, each feature of the pattern will be generated separately, leading to a slightly longer generation time. The number of features will be greater, but the model will be accurately generated.

Similarly, if in some very rare occasions, the hole positions are not accurately modelized in the generated data, please use the "Convert holes" option. In this case, CAD model will be exported without holes feature.

### 2.2.2. 2D - DXF



When "2-D derivation" is selected, a 2D projection of the current selection will be displayed alongside the 3D preview.

As shown below, the 3 surfaces of the model are now visible.

PARTdataManager 11.	.00 - PARTsolutions by CA	DENAS	- D:¥	Jeda_Offline¥offline¥V11¥20180219_OfflineV11sp2p	¥actuator¥standard_air_cyl	inder¥ca2¥ca2_z_asmtab.prj	1.19	
<u>F</u> ile <u>E</u> xport <u>V</u> iew	E <u>x</u> tras <u>W</u> indow	2						
🥰 Transfer to CA	D 👻 💐 Solidworl	ks 201	7 -	2D derivation				
ABC Keyword	(s) for full text search	1		Search in 😂 all catalogs		✓ for	•	Version
Add search     Start search     Assistant	function: A=3 <u>Variable</u>	es sea	<u>rch</u> Part	view Q Search results +				
CA2F63-125Z		•		CA2F63-125Z(0_0_1) Technical details (7)	2D derivation	- 0	× Ion	Topology information 🔻 🗆 🗙
Table Vertica	(-) RC 💌		*	Single view of part, Dimensioning possible. Front +Z Back -Z Right +X				Aame General X-Dimension Y-Dimension Z-Dimension Mater Dimension
BOOT Rod boot CUSHION Cushion STOP	(-) Without bo + (-) Air cushion + Standard strol +	2	-	Combination views Multiple views on one page, partially with border. Fast shaded views possible. 3 projection views (EU)			2	Medium Dimension Minor Dimension
COM Comment	-			3 projection views (US)			L	inks Assembly
BRACKET Pivot bracket	N/A			Paper size:	-			ዮ CA2-Z/C··· ዮ CA2W-Z···
RODB Rod end bracket	(-) Without	Ø	=	No scale Optimize drawing view on				
OMSC Made to order	(-) Without ord 👻	Z		paper size				
THREAD Thread on/off	on off	Z		Settings / visibility			c	🗞 [Discon…
Recalcul	late 3D geometry on/	/off			•			One One -
				2017/11/15 #7				User

Now we run the 2D – DFX export command.

PARTdataManager 11.00 - PA	RTsolutions by CADE	NAS - D:¥Ueda	_Offline¥offlin	e¥V11¥20:
<u>F</u> ile <u>E</u> xport <u>V</u> iew E <u>x</u> tr	as <u>W</u> indow <u>?</u>			
🥰 Transfer to CAD 🛛	DXF 2D 🗸	💼 2D d	lerivation	
ABC Keyword(s) for	2D system nei	utral 🕨 🕨	💾 DXF 2D	、 ta
	3D CAD forma	ts 🕨 🕨		3
Add search functio	3D system nei	utral 💦 🕨 🕨		
Start coarch			-	

The actual export of the DXF file is done in the following dialog box.

Select write to DXF in the output view source. (From the "source" drop-down list, choose "Selected views", then select the view you want to export by clicking its corresponding checkbox.)

iews Filter	Layers Export Options
	Source
Selection	
🔺 🔳 All View	\$
a 📝 Wind	vok
V \	Vindow (2D-View)
4 📄 2D c	lerivation
2	D derivation (Front - +Z)
2	D derivation (BackZ)
. 2	D derivation (Right - +X)
2	D derivation (LeftX)
2	D derivation (Top - +Y)
2	D derivation (BottomY)
	D derivation (Isometric)
2	D derivation (current view)
	D derivation (3 views + isometric drawing in frame (JIS))
2	D derivation (3 projection views (EU))
	D derivation (5 projection views (05))
	D derivation (c views + isolitecia di awing in rialite (3.5)) D derivation (c views + isolitecia di awing in rialite (3.5))
	D derivation (c) projection views (LC))
	D derivation (S views + isometric drawing in frame (ANST))
	D derivation (2 views + bill of material in frame (ANSI))
2	D derivation (3 views + isometric drawing in frame (DIN))
E 2	D derivation (3 views + bill of material in frame (DIN))
📃 Open directo	ry after export(once)
Destination file:	C:¥Users¥xxxxx¥Documents¥CA2F63-125Z_0_1dxf x
Version:	2004

port using DXF 2D	format								8
iews Filter	Layers Expo	rt Options							
Thi	ck Lines	Thin L	ines	Hidden l	Lines	Cente	rlines	Bold C	enterlines
画層(半角英数の)	א): AM_0	画層(半角英数のみ):	AM_4	画層(半角英数のみ):	AM_9	画層(半角英数のみ)	: AM_7	画層(半角英数の)	ን: AM_10
線分:	continuous 👻	線分:	continuous 👻	線分:	dashed 👻	線分:	Dash-dot	▼ 線分:	Dash-dot 🔹
カラー:	white 👻	カラー:	green 🔻	カラー:	magenta 👻	カラー:	white	→ カラー:	white
1 <b>8</b> :	0.50 mm 👻	9 <b>2</b> :	0.25 mm 👻	9番:	0.25 mm 👻	9 <b>2</b> :	0.25 mm	▼ 幅:	0.50 mm
Visible		Visible		Visible		Visible		Visible	
TÌ	nreads	Dimen	sions	Light eo	iges	Attrit	utes		latch
画層(半角英数の)	æ): AM_5	画層(半角英数のみ):	AM_5	画層(半角英数のみ):	AM_4	画層(半角英数のみ)	: AM_6	画層(半角英数の2	₩): AM_11
線分:	continuous 👻	線分:	continuous 👻	線分:	continuous 👻	線分:	continuous	▼ 線分:	continuous •
カラー:	green 👻	カラー:	green 👻	カラー:	green 👻	カラー:	yellow	<ul> <li>カラー:</li> </ul>	green •
12:	0.25 mm 👻	9 <b>8</b> :	0.25 mm 🔻	9冊:	0.25 mm 👻	9 <b>2</b> :	0.35 mm	▼ #≣:	0.25 mm
Visible		Visible		Visible		📰 Visible		Visible	
Connec	ction points								
画層(半角英数の)	⇒): nectionPoints								
線分:	continuous 👻								
カラー:	white 👻								
唱:	0.50 mm 👻								
Visible									
Open distate	nu ofter expert/								
Open directo Destination file:	C:XUcoreXxxxxkD	ocumente¥CA2E62-12	57 0 0 1 dvf						
version:	2004	ocumento+CA2P03-12	52_0_0_10Xi	\					
	2001		ı	2					

In the Export options tab, it is possible to set the origin, attribute and layer.

### 2.2.3. 2D - DXF for use in AutoCAD

Choose the appropriate view for 2D - DXF Example :

Selected views	
is: 🔽 2-D derivation (6 projection views (EU) - )	
2-D derivation (6 projection views (US) - )	
2-D derivation (3 views + isometric drawing in frame A (ANSI) - A)	
2-D derivation (3 views + isometric drawing in frame B (ANSI) - B)	
2-D derivation (3 views + isometric drawing in frame C (ANSI) - C)	
2-D derivation (3 views + isometric drawing in frame D (ANSI) - D)	
🗖 2-D derivation (3 views + isometric drawing in frame E (ANSI) - E)	
2-D derivation (3 views + bill of material in frame A (ANSI) - A)	
2-D derivation (3 views + bill of material in frame B (ANSI) - B)	
2-D derivation (3 views + bill of material in frame B (ANSI) - C)	
2 -D derivation (3 views + bill of material in frame D (ANSI) - D)	
2-D derivation (3 views + bill of material in frame E (ANSI) = E)	

As shown below, when you open a DXF file in AutoCAD, the layer and color code for each type of line will be conform to the option selected in the export options dialog box.



It is also possible to hide unwanted lines in the layer settings.



#### 2.2.4. Solidworks 2017 - (Direct)

In order to use 3D data, the most efficient way is to export CAD data through direct driver.

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As pictured in the illustration, after the product selection, start Solidworks 2017 in background, and select "Solidworks 2017" (or the version that matches your CAD system) from the export menu.

After confirming the export directory, press the "OK" button, then the model will be drawn in the background Solidworks window. (In case of a multiple-parts data assembly, this process may take some time)

The illustration below shows the completed model in Solidworks.



Since the data will be modeled completely on Solidworks, you can see on the illustration above that the model is created with all matching features (bound), and other features such as screw, therefore making it a native data.

## 2.3. Dimensions measurement feature

#### 2.3.1. Measuring on the 3D preview screen.

You can access the measuring command via the right-click menu on the 3D preview screen.



As shown below, in measurement mode, you will be able to see the model's size, like distance between two surfaces.



#### 2.3.2. Measuring on 2D view

You can access the dimensioning command via the right-click menu on the 2D view screen.



As shown in the illustration, the dimensioning mode will allow you to check the model size via the dimensioning menu.

