

SOLIDWORKS®

SOLIDWORKS Drawings - ISO

Dassault Systèmes SolidWorks Corporation
175 Wyman Street
Waltham, MA 02451 U.S.A.

© 1995-2021, Dassault Systemes SolidWorks Corporation, a Dassault Systèmes SE company, 175 Wyman Street, Waltham, Mass. 02451 USA. All Rights Reserved.

The information and the software discussed in this document are subject to change without notice and are not commitments by Dassault Systemes SolidWorks Corporation (DS SolidWorks).

No material may be reproduced or transmitted in any form or by any means, electronically or manually, for any purpose without the express written permission of DS SolidWorks.

The software discussed in this document is furnished under a license and may be used or copied only in accordance with the terms of the license. All warranties given by DS SolidWorks as to the software and documentation are set forth in the license agreement, and nothing stated in, or implied by, this document or its contents shall be considered or deemed a modification or amendment of any terms, including warranties, in the license agreement.

For a full list of the patents, trademarks, and third-party software contained in this release, please go to the Legal Notices in the SOLIDWORKS documentation.

Restricted Rights

This clause applies to all acquisitions of Dassault Systèmes Offerings by or for the United States federal government, or by any prime contractor or subcontractor (at any tier) under any contract, grant, cooperative agreement or other activity with the federal government. The software, documentation and any other technical data provided hereunder is commercial in nature and developed solely at private expense. The Software is delivered as "Commercial Computer Software" as defined in DFARS 252.227-7014 (June 1995) or as a "Commercial Item" as defined in FAR 2.101(a) and as such is provided with only such rights as are provided in Dassault Systèmes standard commercial end user license agreement. Technical data is provided with limited rights only as provided in DFAR 252.227-7015 (Nov. 1995) or FAR 52.227-14 (June 1987), whichever is applicable. The terms and conditions of the Dassault Systèmes standard commercial end user license agreement shall pertain to the United States government's use and disclosure of this software, and shall supersede any conflicting contractual terms and conditions. If the DS standard commercial license fails to meet the United States government's needs or is inconsistent in any respect with United States Federal law, the United States government agrees to return this software, unused, to DS. The following additional statement applies only to acquisitions governed by DFARS Subpart 227.4 (October 1988): "Restricted Rights - use, duplication and disclosure by the Government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252-227-7013 (Oct. 1988)."

In the event that you receive a request from any agency of the U.S. Government to provide Software with rights beyond those set forth above, you will notify DS SolidWorks of the scope of the request and DS SolidWorks will have five (5) business days to, in its sole discretion, accept or reject such request. Contractor/ Manufacturer: Dassault Systemes SolidWorks Corporation, 175 Wyman Street, Waltham, Massachusetts 02451 USA.

Contents

Introduction

About This Course	2
Prerequisites	2
Using this Book	2
About the Training Files	3
Training Templates	3
Accessing Training Templates in SOLIDWORKS	3
Conventions Used in this Book	4
Windows OS	5
Use of Color	5
More SOLIDWORKS Training Resources	5
Local User Groups	5

Lesson 1:

Review of the Basics

Review of Essentials	8
Drawing System Options	9
Beginning a New Drawing	10
View Palette and Model Views	11
Detailing Techniques	11
Importing Design Annotations	12
Using Model Items	13
Dimensions in Drawings	15
Section Views	18
Detail Views	20
Moving Drawing Views	21
View Alignment	21

Moving Dimensions	22
Center Marks & Centerlines	22
Assembly Drawing Review	25
Bill of Materials Tables	26
Adding Balloons	31
Adding Sheets	32
Standard 3 View	32
Exercise 1: Simple Part	34
Exercise 2: Drawing Views	40
Exercise 3: Section Cutting Line Options	48
Exercise 4: Removed Section Views	57
Exercise 5: Assembly Practice	59
Exercise 6: Adding Annotations	68

Lesson 2:

Understanding Drawing Templates

Structure of a Drawing Document	78
Drawing Document	78
Drawing Sheet	79
Sheet Properties	79
Sheet Format	80
Edit Sheet Format	80
Understanding Drawing Templates	80
Why are Drawings Structured this Way?	81
Sheet Format Features	83
Notes Linked to Properties	84
Annotation Link Errors	86
Drawing Template Design Strategy	88
Designing a Drawing Template	90
Understanding Document Properties	91
Display Settings in Templates	94
Sheet Properties in Templates	95
Custom Properties in Templates	96
Save as Template	96
Defining Template Locations	97
Model Templates	99
Creating a Sample Model and Drawing	100
Exercise 7: Defining Units	103
Exercise 8: Designing Model Templates	107
Exercise 9: Designing a Drawing Template	111

Lesson 3:

Customizing the Sheet Format

Customize the Sheet Format	114
Completing the Title Block Sketch	116
Completing the Title Block Notes	117
Tips for Locating Notes	119

Adding a Company Logo	120
Defining the Border	122
Setting Anchors.	125
Exit Edit Sheet Format Mode	126
Title Block Fields	127
Exercise 10: Customizing a Sheet Format	130
Lesson 4:	
Saving and Testing the Sheet Format File	
Understanding Sheet Format Properties	132
Understanding Sheet Format Behavior.	134
Saving the Sheet Format.	135
Reload Sheet Format.	136
Defining Sheet Format Locations.	138
Testing the Sheet Format	138
Testing Sheet Format Properties	141
Testing Default Values	143
Exercise 11: Saving and Testing a Sheet Format	146
Lesson 5:	
Creating Additional Sheet Formats and Templates	
Creating Additional Sheet Formats.	148
Drawing Templates with Sheet Formats.	152
Other Drawing Template Items.	153
Property Tab Builder.	154
The Property Tab Builder UI	155
Defining Property Tab Template Locations	158
Additional Property Tab Options	159
Properties.txt File	161
Using Edit List	163
Exercise 12: Create a New Sheet Format Size	164
Exercise 13: Drawing Templates with Sheet Formats	165
Exercise 14: Predefined Views.	166
Exercise 15: Property Tab Templates and Properties.txt	172
Lesson 6:	
Advanced Options for Drawing Views	
Advanced Drawing Views	174
Showing Hidden Edges.	176
Drawing View Properties Dialog	176
Broken-out Section View	179
Editing Broken-out Section Views	180
Auxiliary View	180
Rotating Views	182
Crop View	182

Understanding View Focus	183
Editing Crop Views	184
Advanced Views for Assemblies	186
Section Scope	186
Alternate Position View	189
Editing Alternate Position Views	191
Using Configurations	192
Using Display States	193
Custom View Orientations	195
New View	196
Relative View	197
3D Drawing Views	198
Exercise 16: View Practice	200
Exercise 17: Auxiliary Views	205
Exercise 18: Broken Views	209
Exercise 19: Heater Assembly	216
Exercise 20: Pivot Conveyor	219
Exercise 21: Housing	225

Lesson 7:**Understanding Annotation Views**

Understanding Annotation Views	234
Understanding Annotation Behavior	236
What are Annotation Views?	236
Annotations Folder	236
Default Annotation Views	237
Annotations View Visibility	238
Insert Annotation View	239
Editing Annotation Views	241
Annotation Update	244
Annotations Folder in Drawings	245
Exercise 22: Editing Annotation Views	246

Lesson 8:**Advanced Detailing Tools**

Detailing Tools	252
Annotation Views vs. Model Items	252
Using Annotation Views in Existing Drawing Views	254
Combining Annotation Views and Model Items	257
Parametric Notes	259
Dimension Types	261
Chamfer Dimension	262
Ordinate Dimensions	263
Ordinate Dimension Options	265
Baseline Dimensions	266
Chain Dimensions	266
Baseline Dimension Alignment	269
Autodimension	269

Arranging Dimensions	270
Aligning Linear Diameter Dimensions.	272
Location Labels.	274
Exercise 23: Detailing Practice.	276
Exercise 24: Dimension Types	280
Exercise 25: Chain Dimensions	287
Exercise 26: Arranging Dimensions.	291
Lesson 9:	
Using Layers, Styles and the Design Library	
Using Layers.	296
Layer Properties Dialog	297
Automating Layers	299
Reusing Dimension Properties	301
Format Painter.	301
Dimension Styles	302
Recent Options in the Dimension Palette	303
Annotations in the Design Library	305
Design Library Shortcuts	307
Adding Notes to the Design Library.	309
Building a Custom Note Block.	310
Flag Note Bank.	312
Exercise 27: Using Layers	315
Exercise 28: Dimension Styles	320
Exercise 29: Annotations and the Design Library	323
Lesson 10:	
Advanced Options for BOM Tables	
Tables in SOLIDWORKS.	332
Bill of Materials Properties.	332
Displaying the BOM Assembly Structure	336
Modifying a Table.	340
Saving a Table Template.	342
Properties in BOM Tables.	343
BOM Quantity	344
BOM Part Numbers	344
Exclude from BOM	347
Child Component Display	348
BOM Component Options	349
Balloon Indicator	349
Exercise 30: Bill of Materials.	351
Exercise 31: Magnetic Lines.	365
Lesson 11:	
Additional SOLIDWORKS Tables	
Additional SOLIDWORKS Tables.	372
Inserting a Hole Table.	372
Adjusting Hole Table Settings	374
Splitting a Table	377

Using a Revision Table	378
Markup	378
Adding a Revision	380
Leader Annotation Options	382
Design Tables in Drawings	384
Exercise 32: Hole Table	385
Exercise 33: Revision and Design Tables	389

Lesson 12:**Additional Drawing Tools**

Reusing Drawings	400
Replace Model	402
Another Technique	403
Open with a New Reference	403
Save As with References	407
Pack and Go	410
DrawCompare	410
DrawCompare Options	411
Compare Documents	413
SOLIDWORKS Design Checker	413
SOLIDWORKS Task Scheduler	413
Updating Custom Properties	414
Exercise 34: Open with New Reference	417
Exercise 35: Save As with References	422
Exercise 36: Pack and Go	426
Exercise 37: SOLIDWORKS Task Scheduler	431
Exercise 38: SOLIDWORKS Design Checker	433

Lesson 13:**Managing Performance**

Managing Performance	442
Performance Evaluation	442
Open Progress Indicator	443
Detailing Practices	447
System Options & Document Properties	450
Open Options	452
Open Modes	452
Selecting Sheets	453
Explore Lightweight Mode Functions	456
Explore Detailing Mode Functions	459
Understanding Detailing Mode Settings	460
Out of Date Views	463
Opening Drawings with Missing References	465
Detached Drawings	468
Hardware and Performance	468
Additional Considerations	469
Quick Reference Guide	471