

SOLIDWORKS®

SOLIDWORKS CAM Professional

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

© 1995-2024, Dassault Systemes SolidWorks Corporation, a Dassault Systèmes 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
Course Design Philosophy	2
Using this Book	2
About the Training Files.....	3
Conventions Used in this Book	4
Windows 10	4
Use of Color	4
Graphics and Graphics Cards	5
More SOLIDWORKS Training Resources.....	5
Local User Groups	5

Lesson 1:

SOLIDWORKS CAM Configurations

SOLIDWORKS CAM Product Review	8
SOLIDWORKS CAM Configurations.....	9
Case Study: Using Configurations	11
Working With CAM Configurations	13
Exercise 1: Generate Toolpaths for Part Configurations	27

Lesson 2:**High Speed Machining (VoluMill™)**

VoluMill Overview	34
Case Study: Using VoluMill	38
VoluMill Settings	41
VoluMill Technology Expert	46
Exercise 2: Create VoluMill Toolpaths	49

Lesson 3:**Assembly Machining**

SOLIDWORKS CAM Assembly Mode	56
Case Study: Assembly Machining Using a Vise	58
Part Manager	59
Stock Manager	60
Setup Parameters	63
Case Study: Assembly Machining -Programming with Subroutines	69
Case Study: Assembly Machining - Multiple Parts	75
Case Study: Assembly Machining Split Instance	86
Import Part Data	87
Split Instance	88
Split Setup	92
Exercise 3: Assembly Mode Machining	99
Exercise 4: Assembly Mode Multi-vise Machining	104
Exercise 5: Assembly Mode Split Instance	110

Lesson 4:**3 Plus 2 Machining**

3 Plus 2 Machining (Indexing)	120
Case Study: 3 Plus 2 - Part Machining	120
Indexing	120
Case Study: Assembly Machining with a Tombstone	125
Exercise 6: 3 Plus 2 Machining	130

Lesson 5:**Turning Basics**

SOLIDWORKS CAM Turning	134
Process Overview	134
Case Study: Generate Toolpaths and NC Code	135
Setup	136
Chuck/Fixture	138
Stock	141
Machinable Features	146
Case Study: Interactive Features and Operations	155
New Turn Feature	155
Exercise 7: Basic Turning Process	165
Exercise 8: Interactive Turn Features	169

Lesson 6:**Chucks, ID Features and Operations**

Section Method	176
Case Study: Using Plane Section	176
Double Chucking	178
Case Study: Using Double Chucks.	178
Exercise 9: Chucks, ID and OD Features	186

Lesson 7:**Modifying Feature and Operation Parameters**

Case Study: Custom Chuck, OD and Thread Features.	194
Editing Toolpaths	214
Exercise 10: Modifying Features and Operations.	220

Lesson 8:**Probing**

Introduction to Probing.	228
Probe Operation	229
Case Study: Probing Operations - Part 1	232
Case Study: Probing Operations - Part 2	248
Case Study: Probing Operations - Part 3	253
Exercise 11: Using Probing Tools	257