planit
PROFESSIONAL SERVICE

Planit Training Manual

First Class Training for World Class Software

edgecam
EDGECAM.COM

Solid Machinist Turning

alphacam cabinet vision edgecam jobshop radan

Copyright

Copyright © 2011 Planit Software Ltd. All rights reserved.

Any copyright or other intellectual property right of whatever nature which subsists or may subsist in the presentation and/or content of the programs (including without limitation its look, feel, visual or other non-literal elements) remains the property of Planit Software Ltd or its licensor(s) absolutely.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system or translated into any language, in any form or by any means, electronic, mechanical, optical, chemical, manual or otherwise, without the express written permission of Planit Software Ltd.

Unauthorised reproduction or distribution of these programs or any part thereof is unlawful and may result in civil or criminal penalties.

Edgecam and the Edgecam Logo are trademarks of Planit Software Ltd.

Windows is a trademark of Microsoft Corporation.

All product names mentioned in this publication, and not listed above, are acknowledged as the trademarks of the respective manufacturers and producers of such products.

Planit Software Ltd makes no representations or warranties with respect to the contents hereof and specifically disclaim any implied warranties of satisfactory quality or fitness for any particular purpose. Further, Planit Software Ltd reserves the right to revise this publication and to make changes in the contents hereof without obligation to notify any person of such changes or revisions.

The information contained within this document is subject to change without notice and does not represent a commitment on the part of the vendor. The software described in this document is furnished under a licence agreement and may be used or copied only in accordance with the terms of the agreement.

Contents

Copyright 2
Contents 3
Conventions Used in this Guide 5
Recommended Operating Systems and Hardware for Edgecam 6
Supported Operating Systems 6
Minimum Specifications 7
Pre-Requisites 9
Licensing Requirements 9
Before You Start 9
Solids Toolbar & Turning Environment 9
Overview of the Lesson 10
What is Edgecam Solid Machinist? 11
Understanding Solid Models 12
Loading a Solid Body 12
Exercise 1 – Loading & Interrogating Solid Parts 12
Exercise 2 – Aligning a Solid body for Turning 14
Preparing Solid Models for Manufacture 16
Creating Features to Machine 16
Automatic Feature Finder (AFR) 16
Turn Features 18
Set Start The Start of a Turn feature is the 'highest Z' end. 18
Bore Features 19
Include Bore Grooves 19
Threads 19
Grooves 19
Face Features 20
Exercise 3 – Feature Finding 21
Defining Stock and Billets 24
Creating Stock 24
Stock Shape 25
Exercise 4 – Creating Cylindrical Stock 26
Creating Profile Stock 28
Exercise 5 – Profile Stock 28
Defining Stock as a Turn Billet 30
Repairing the Turn Billet Shape 30
Exercise 6 – Creating a Turn Billet from Wireframe Entities. 31
Exercise 7 – Using CAD Stock Features 32
Exercise 8 – Creating Stock with a Solid Body 34
Geometry Preparation 38
The Explode command 38
Exercise 9 – Exploding Features 38
Exercise 10 – Prepare For Manufacture 42
Exercise 11 – Prepare for Manufacture – Stock Creation 44
Introducing Manufacturing 46
Exercise 12 – Creating a Machining Sequence 46
The Sequence Window 51
Turning Cycles & M Functions 51
Machining Preparations 53
Material Technology 54
Creating CAM Instructions 55
Manual 55

Manually Created Machining Instructions 56
Automatic 56
Automatically Created Machining Instructions 57
Machining Process for Spindle Locator 57
Selecting Tools 58
Exercise 13 – Creating a New Turning Tool 59
Machining the Component 62
Machining in Edgecam 63
Operation Preferences 63
Exercise 14 – Rough Turning 64
Exercise 15 – Rough Turning 68
Simulator 71
Viewing the Toolpath 72
New Rough Turn Cycle 73
Editing Operations/Cycles 75
Exercise 16 – Editing the New Rough Turn Cycle 76
Exercise 17 – Viewing the Toolpaths 79
Other Turning Cycles 80
Straight Turn Cycle 80
Rough Profile Turning Cycle 81
Finish Turning Cycles 82
Exercise 18 – Finish Turn Operation 84
Exercise 19 – Editing the Finish Turn Cycle 87
Setting Tool Radius Compensation 91
Grooving Cycles 92
The Rough Groove Cycle 92
The Finish Groove Cycle 92
Exercise 20 – Rough Grooving Cycle 93
Select by Region and Profile Extensions 97
Exercise 21 – Finish the Groove 100
Hole Cycle Command 103
Exercise 22 – Hole Cycle 103
Exercise 23 – Generating the CNC Program 108
Edgecam Simulator 110
About Simulate Machining 110
Changing Playback Speed 111
Pausing the Simulator 111
Output Window 112
Machine Simulation and Graphics 112
Using STL Files 113
Using the STL File Model 113
Three Quarter Turn View 113
Recording AVI's 114
Associative Reloading of Solids 115
Reloading Manually 115
Automatic Reloading 116
Reload Preferences 116
Exercise 24 – Reloading a Modified Solid 117
Exercise 25 – Manual Feature Finding 119
Exercise 26 – Threading Operation 127
Understanding Turning CPL's 132
Creating a Turning CPL 132
Exercise 27 – Creating CPL's 133
Document Revision Control 138

Conventions Used in this Guide

To enable you to use the information in this guide effectively, you need to understand the used in the guide to represent different types of information.

- Buttons on the screen are represented as the button text in square brackets.
  For example: Click on **[OK].**
- Keys on the keyboard are represented as bold lettering in between **<>** characters.
  For example: Press **<Enter>**
- Menu options are represented as a path with the main menu in **Bold** UPPER case with sub menus Capitalised and separated with a vertical bar
  For example: Select **FILE | Open**
- Field names are represented as bold text. And the value to be entered will be represented by **Bold** Text.
  For example: Enter the value 50 in the Offset field. Or
  When prompted for the X, Y or Z values type **X100,Y50,Z0 <Enter>**

Denotes a Left Mouse Button Click

Denotes a Right Mouse Button Click

This is a note. It contains useful or additional information.

This is a reference. It directs you to another part of the user guide.

This is a thought box. It is generally used in exercises and contains a question for you to consider.

This is a warning, it contains information that you must not ignore.

This is a tip. It is generally used in exercises and offers further advice.

1. This is the first line of a number list item
2. This is the second item of the numbered instructions, which you must
3. Follow in sequence.

- This is a list
- of items, in which
- The order is not important.