



# Planit Training Manual

First Class Training for World Class Software



**Essential Turning License  
(Incorporating Solid  
Loader Modules).**





## Copyright

Copyright © 2012 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.....	1
<b>Contents .....</b>	<b>3</b>
License Restrictions.....	6
Example Part Files.....	6
Conventions Used in this Guide.....	7
Terminology .....	7
Differentiating Between Solids and Wireframe.....	8
System Requirements for Edgecam and Part Modeler.....	9
Supported Operating Systems .....	9
Minimum Specifications .....	10
Pre-Requisites .....	12
Licensing Requirements .....	12
Before You Start .....	12
Setting Your Profile.....	12
Setting Your Defaults.....	12
Overview of the Lesson.....	13
What is Edgecam Solid Machinist?.....	14
Datum Position.....	15
Translate .....	15
Rotate .....	16
Scale .....	16
Exercise 1 – Transforming Solid Parts.....	17
Align Body for Turning Command .....	22
Exercise 2 – Aligning a Solid Body for Turning .....	23
Preparing Solid Models for Manufacture .....	25
Creating Features to Machine .....	25
Automatic Feature Finder (AFR) .....	25
Turn Features .....	27
Set Start The Start of a Turn feature is the 'highest Z' end.....	27
Min X.....	27
Max X.....	27
Centreline .....	27
Set End .....	27
None .....	27
Max X Start .....	27
Max X End .....	27
Termination Z .....	27
Bore Features .....	28
Set Start.....	28
Set End .....	28
None .....	28
Minimum X Start .....	28
Maximum X End .....	28
Termination Z .....	28
Blind Bore Ends At Drill Angle .....	28
Minimum Diameter.....	28
Include Bore Grooves .....	28
Threads.....	28
Groove Features .....	28
Maximum Width .....	28
Minimum Depth.....	28
Face Features .....	29
Face Features.....	29
Front Face End .....	29
Centreline .....	29



Minimum X .....	29
Back Face .....	29
Back Face Minimum.....	29
Include Face Grooves .....	29
<b>Exercise 3 – Automatic Feature Finding .....</b>	<b>30</b>
<b>Stock.....</b>	<b>34</b>
Automatic Stock: Box .....	35
Automatic Stock: Cylinder .....	35
Digitise: Solid or STL.....	35
Profile .....	35
Turn Billet .....	36
Repairing the Turn Billet Shape .....	36
<b>Exercise 4 – Stock Options .....</b>	<b>37</b>
Box Example – Not Automatic .....	37
Cylinder Example – Not Automatic .....	39
Box Example Automatic.....	40
Cylinder Example Automatic.....	41
<b>Profile Stock.....</b>	<b>42</b>
<b>Exercise 5 – Profile Stock.....</b>	<b>42</b>
<b>Exercise 6 – Tube Stock .....</b>	<b>45</b>
<b>Exercise 7 – CAD Stock .....</b>	<b>47</b>
<b>Exercise 8 – Stock From A Solid (Digitise) .....</b>	<b>50</b>
<b>Geometry Preparation .....</b>	<b>54</b>
Explode Command.....	54
<b>Exercise 9 – Exploding Features .....</b>	<b>55</b>
<b>Exercise 10 – Manual Feature Finding .....</b>	<b>60</b>
<b>Exercise 11 – Prepare For Manufacture .....</b>	<b>62</b>
<b>Exercise 12 – Prepare for Manufacture – Stock Creation .....</b>	<b>65</b>
<b>Introducing Manufacturing .....</b>	<b>67</b>
<b>Exercise 13 – Creating a Machining Sequence .....</b>	<b>67</b>
The Sequence Window .....	72
Turning Cycles & M Functions .....	72
Machining Preparations .....	74
Material Technology .....	75
<b>Creating CAM Instructions .....</b>	<b>76</b>
Manual.....	76
Manually Created Machining Instructions .....	77
Automatic .....	77
Automatically Created Machining Instructions .....	78
Machining Process for Spindle Locator .....	78
<b>Selecting Tools .....</b>	<b>79</b>
<b>Exercise 14 – Creating a New Turning Tool .....</b>	<b>80</b>
Machining the Component .....	83
<b>Machining in Edgecam .....</b>	<b>84</b>
Operation Preferences .....	84
<b>Exercise 15 – Rough Turning Operation - Facing .....</b>	<b>85</b>
<b>Exercise 16 – Rough Turning Operation - Turning .....</b>	<b>89</b>
<b>Simulator .....</b>	<b>93</b>
<b>Viewing the Toolpath in Edgecam .....</b>	<b>94</b>
<b>Editing Operations/Cycles .....</b>	<b>96</b>
<b>Exercise 17 – Viewing the Toolpaths.....</b>	<b>97</b>
<b>Exercise 18 – Finish Turning Operation.....</b>	<b>98</b>
<b>Setting Tool Radius Compensation .....</b>	<b>101</b>
<b>Exercise 19 – Editing the Finish Turning .....</b>	<b>102</b>
<b>Exercise 20 – Rough Grooving Operation .....</b>	<b>103</b>
<b>Exercise 21 – Finish Groove Operation.....</b>	<b>108</b>
<b>Exercise 22 – Threading Operation .....</b>	<b>111</b>
<b>Hole Operation.....</b>	<b>114</b>



Exercise 23 – Hole Operation For Turning.....	114
Associative Reloading of Solids .....	119
Reloading Manually .....	119
Automatic Reloading.....	120
Reload Preferences .....	120
Exercise 24 – Reloading a Modified Solid.....	121
Exercise 25 – Generating the CNC Program .....	123
Manipulating Machining Instructions .....	125
Moving/Copying & Inserting a Machining Instruction .....	125
Inserting a CAM Instruction .....	125
Trainee Notes .....	126
Edgecam Simulator.....	127
About Simulate Machining .....	127
Changing Playback Speed .....	128
Pausing the Simulator.....	128
Output Window .....	129
Machine Simulation and Graphics.....	130
Using STL Files .....	130
Using the STL File Model .....	130
Three Quarter Turn and Profile Turn Views .....	130
Full Machine Collision Checking.....	131
Recording AVI's .....	131
Exercise 26 - Workshop 1.....	133
Exercise 27 - Workshop 2.....	134
Tool Selection and Cycles.....	135
Toolstore Selection .....	135
Tools Created On The Fly .....	135
Toolchange Dialog Box.....	136
Hole Cycle.....	138
Exercise 28 – Hole Cycle.....	140
New Rough Turn Cycle .....	146
Exercise 29 – New Rough Turn Cycle .....	149
Other Turning Cycles .....	168
Straight Turn Cycle .....	168
Rough Profile Turning Cycle.....	169
Move Relative .....	170
Move Relative Two .....	171
Exercise 30 – Move Relative .....	172
Finish Turning Cycle .....	181
Exercise 31 – Finish Turning .....	183
Grooving Cycles.....	198
The Rough Groove Cycle .....	198
The Finish Groove Cycle .....	198
Exercise 32 – Grooving Cycles.....	199
Understanding Turning CPL's .....	208
Creating a Turning CPL.....	208
Exercise 33 – Creating CPL's .....	209
Exercise 34 – VTL Set up .....	213
Document Revision Control.....	215