



Starting A Wildfire Training Manual

Wildfire 4.0
Rev B

COPYRIGHT

COPYRIGHT © 2009 TRAINING FACTORE, INC. ALL RIGHTS RESERVED.

This *Starting A Wildfire: Wildfire 4.0* document may not be copied, reproduced, disclosed, transferred, or reduced to any form, including electronic medium or machine-readable form, or transmitted or publicly performed by any means, electronic or otherwise, unless Training FACTORE, Inc. (Training FACTORE) consents in writing in advance.

Information described in this manual is furnished for information only, is subject to change without notice, and should not be construed as a commitment by Training FACTORE. Training FACTORE assumes no responsibility or liability for any errors or inaccuracies that may appear in this manual.

Unauthorized use of this documentation can result in civil damages and criminal prosecution.

US GOVERNMENT RESTRICTED RIGHTS LEGEND

This Documentation is provided with RESTRICTED RIGHTS. Use, duplication, or 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-Restricted Rights at 48 CFR 52.227-19, as applicable. Training FACTORE, Inc., 3058 Hawk Ridge Road NW, Prior Lake, MN 55372, USA.

© 2009 Training FACTORE, Inc. Unpublished – all rights reserved under the copyright laws of the United States.

PRINTING HISTORY

<u>Document</u>	<u>Date</u>	<u>Description</u>
Rev A	1/1/2009	Initial Printing.
Rev B	4/2/2009	Edits after partner feedback.



Starting A Wildfire

Training Course Agenda

Day One

- The WILDFIRE User Interface
- Direct Features
- Sketch Features
- Reference Geometry
- The Pattern Tool
- Self Paced Project Lab

Day Two

- Managing Parent/Child Relationships
- Sweep and Blend Features
- Assembly Modeling
- Managing Model Display
- Self Paced Project Lab

Day Three

- Drawing Views
- Drawing Dimensions
- Drawing Annotations
- Assembly Drawings
- Self Paced Project Lab

TABLE OF CONTENTS

THE WILDFIRE USER INTERFACE	1-1
Objectives.....	1-1
SOLID MODELING WITH WILDFIRE	1-2
Feature Based	1-2
Parametric	1-3
Associative.....	1-3
GUIDING PHILOSOPHIES	1-5
Focus On The Model	1-5
Simple First.....	1-6
SCREEN LAYOUT	1-8
Menu Bar	1-8
Tool Bars	1-8
Message Area.....	1-9
Navigator.....	1-10
Browser.....	1-11
WORKING WITH MODELS	1-12
Opening Models	1-12
Setting the Working Directory	1-12
Model Orientation.....	1-12
Object Highlighting and Selection	1-13
Feature Modification	1-16
Edits Via the Dashboard	1-17
EXERCISE 1: Opening Models	1-19
EXERCISE 2: Object Selection and Manipulation	1-25
DIRECT FEATURES	2-1
Objectives.....	2-1
DIRECT FEATURES	2-2
Hole Tool	2-2
Draft Tool	2-6
Round Tool	2-9
Chamfer Tool.....	2-13
Shell Tool	2-14
EXERCISE 1: INTRODUCTION TO DIRECT MODELING	2-16
EXERCISE 2: CREATING HOLES	2-22
EXERCISE 3: Using AutoRound.....	2-28
EXERCISE 4: Shell & REORDER	2-30
EXERCISE 5 (OPTIONAL): ROUNDS	2-32
SKETCH FEATURES	3-1
Objectives.....	3-1
EXTRUDE TOOL	3-2
Solid vs. Thin	3-2
Depth Options	3-3
REVOLVE TOOL	3-3
Axis of Revolution	3-4

INTENT MANAGER BASICS	3-4
Getting Started	3-4
Setting Up The Sketch	3-4
Additional Sketch References	3-6
SKETCH REQUIREMENTS	3-6
Sketch Analysis Tools	3-9
Commonly Used Geometry	3-11
Dimensions	3-14
Constraints	3-16
Completing the Sketch	3-17
EXERCISE 1: WORKING WITH THE EXTRUDE TOOL	3-19
EXERCISE 2: REVOLVE FEATURE	3-26
EXERCISE 3: Using The Sketch Palette	3-32
REFERENCE GEOMETRY	4-1
Objectives	4-1
CREATING NEW PART MODELS	4-2
Why Begin With Three Planes?	4-2
DATUM FEATURES	4-3
Datum Planes	4-4
Datum Axes	4-9
PRESELECTING REFERENCES	4-11
GROUPING DATUMS WITH THE SOLID FEATURE	4-11
Pause & Resume	4-12
EXERCISE 1: CREATING DATUM FEATURES	4-13
EXERCISE 2: CREATING DATUMS "ON THE FLY"	4-30
THE PATTERN TOOL	5-1
Objectives	5-1
PATTERNS	5-2
Dimension Patterns	5-3
Direction Pattern	5-7
Axis Pattern	5-7
Fill Patterns	5-8
MIRRORING GEOMETRY	5-10
Mirror Individual Features	5-10
EXERCISE 1: Direction Patterns	5-11
EXERCISE 2: A Cool PATTERN TECHNIQUE	5-16
EXERCISE 3: AXIAL PATTERN	5-21
EXERCISE 4: FILL PATTERNS	5-27
MANAGING PARENT/CHILD RELATIONSHIPS	6-1
Objectives	6-1
PARENT/CHILD RELATIONSHIPS	6-2
Why Are Parent/Child Relationships Important?	6-2
How Are Parent/Child Relationships Created?	6-3
Best Practices	6-7
Investigating Parent/Child Relationships	6-8
Tools For Manipulating Parent/Child Relationships	6-9
FEATURE FAILURES	6-9
EXERCISE 1: EDITING FEATURES	6-13
EXERCISE 2: Deleting the PARENT and Keeping The Child	6-19
EXERCISE 3: RESOLVING FEATURE FAILURES	6-25

SWEEP & BLEND FEATURES	7-1
Objectives.....	7-1
SWEEP FEATURE	7-2
Geometry and Feature Characteristics.....	7-2
BLEND FEATURE	7-3
Requirements.....	7-4
General Blend.....	7-6
EXERCISE 1: SWEPT CUT.....	7-8
EXERCISE 2: SWEPT PROTRUSION.....	7-10
EXERCISE 3: ADD INNER FACES SWEEP.....	7-13
EXERCISE 4: BLENDED AND SWEPT PROTRUSIONS.....	7-16
EXERCISE 5: SELECTING BLEND SECTIONS.....	7-27
ASSEMBLY MODELING	8-1
Objectives.....	8-1
NEW ASSEMBLIES	8-2
Adding the First Component.....	8-2
ADDING COMPONENTS	8-3
Constraints.....	8-3
Automatic Constraint.....	8-6
TIPS & TECHNIQUES	8-6
Moving Components During Assembly.....	8-6
Partially Constrained.....	8-7
EXERCISE 1: BASIC COMPONENT ASSEMBLY.....	8-8
EXERCISE 2: USING THE ANGLE ASSEMBLY CONSTRAINT.....	8-21
MANAGING MODEL DISPLAY	9-1
Objectives.....	9-1
MANAGING FEATURE VISIBILITY	9-2
Hiding Features & Components.....	9-3
Layers.....	9-4
Suppressing Features & Components.....	9-7
Summary.....	9-8
CHANGING MODEL COLOR	9-8
Assigning Colors.....	9-9
EXERCISE 1: PART LAYERS.....	9-11
EXERCISE 2: MANAGING ASSEMBLY LAYERS.....	9-16
EXERCISE 3: SEARCHING FOR COMPONENTS TO HIDE.....	9-23
DRAWING VIEWS	10-1
Objectives.....	10-1
GETTING STARTED WITH DRAWINGS	10-2
Associativity.....	10-2
Creating a New Drawing.....	10-3
Templates.....	10-4
Formats.....	10-4
Adding Views.....	10-5
Changing View Properties.....	10-8
DRAWING USER INTERFACE	10-9
Icons.....	10-9
Menus.....	10-10
RMB.....	10-10
Sheet Shortcuts.....	10-11

EXERCISE 1: Starting A New Drawing	10-12
EXERCISE 2: AUXILIARY VIEWS	10-18
EXERCISE 3: DETAILED VIEW	10-26
EXERCISE 4: CROSS SECTION VIEWS	10-31
EXERCISE 5: BROKEN VIEWS	10-38
EXERCISE 6: PARTIAL VIEWS	10-43
WORKING WITH DIMENSIONS	11-1
Objectives	11-1
ADDING DIMENSIONS	11-2
Showing Model Dimensions	11-2
Creating Dimensions	11-6
Ordinate Dimensions	11-7
Hole Table	11-8
MANIPIULATING DIMENSIONS	11-9
Erasing Dimensions	11-9
Moving Dimensions	11-10
Breaks	11-12
Jogs	11-13
Dimension Properties	11-13
EXERCISE 1: Auto Dimensioning	11-16
EXERCISE 2: Showing Non-Dimensional Elements	11-21
EXERCISE 3: Creating Dimensions	11-28
EXERCISE 4: Creating a Hole Chart	11-35
ADDITIONAL ANNOTATIONS	12-1
Objectives	12-1
NOTES	12-2
SYMBOLS	12-7
Symbol Palette	12-7
Custom Symbols	12-8
TOLERANCES	12-11
Displaying Tolerances	12-11
Geometric Tolerances	12-12
EXERCISE 1: Annotating a Drawing	12-14
ASSEMBLY DRAWINGS	13-1
Objectives	13-1
PREPARING THE ASSEMBLY	13-2
View Manager	13-2
ASSEMBLY DRAWINGS	13-6
Bill Of Material	13-9
MULTI-MODEL DRAWINGS	13-11
EXERCISE 1: EXPLODING AN ASSEMBLY	13-13
EXERCISE 2: ASSEMBLY DRAWINGS	13-20
PROJECT LAB	14-1
Objectives	14-1
PROJECT OVERVIEW	14-2
Design Intent	14-3
Best Practices	14-3
ADDITIONAL COURSE TOPICS	14-3
EXERCISE 1: PART MODELING	14-4

EXERCISE 2: ASSEMBLY MODELING	14-13
EXERCISE 3: DRAWING CREATION	14-17

ADDITIONAL EXERCISES

A-1

Objectives.....	A-1
EXERCISE 1: External Sketches	A-2
EXERCISE 2: Creating Sketches	A-8
EXERCISE 3: Creating Datum Axes	A-15
EXERCISE 4: Creating Datum Planes.....	A-22
EXERCISE 5: Creating Datum Coordinate Systems.....	A-28
EXERCISE 6: Creating Datum Points	A-31