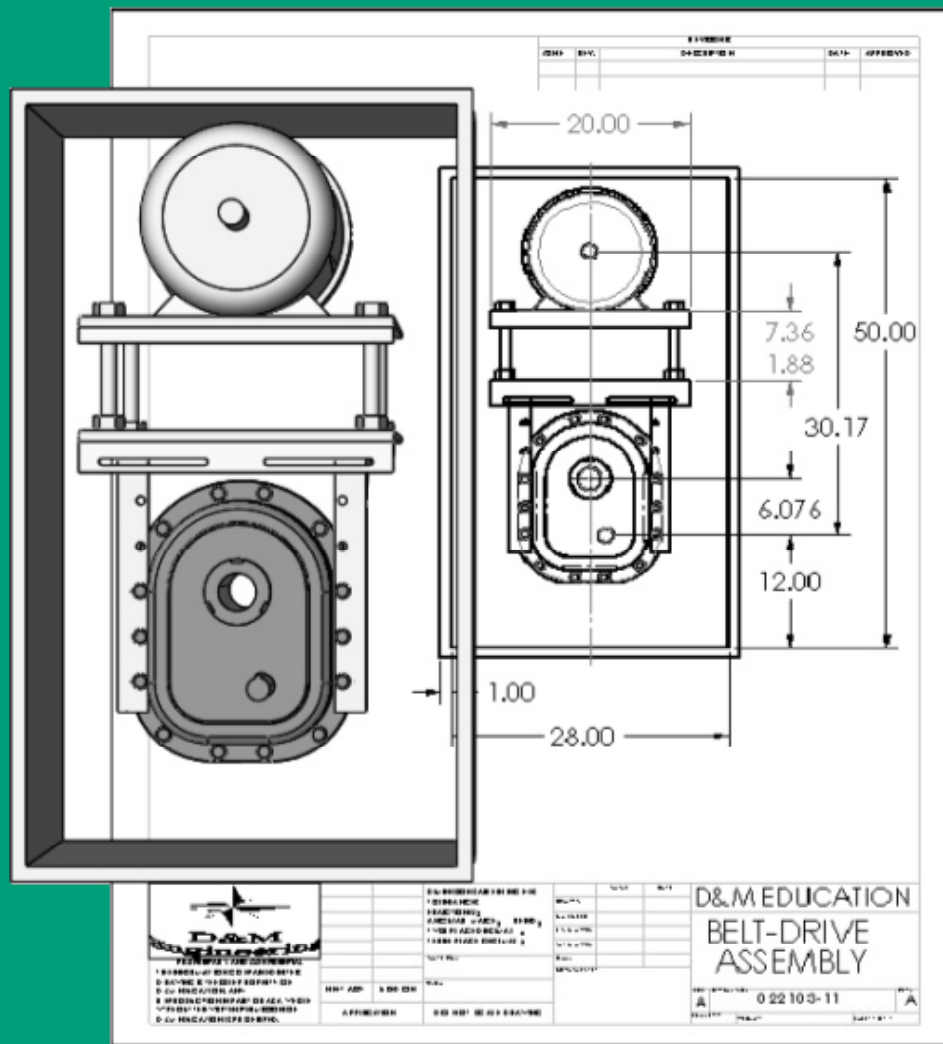


Drawing and Detailing with SolidWorks 2004

Referencing the ASME Y14 Engineering Drawing and
Related Documentation Practices

By David C. Planchard and Marie P. Planchard



SDC
PUBLICATIONS

Schroff Development Corporation

www.schroff.com

www.schroff-europe.com

Table of Contents

Introduction	I-1
About the Cover	I-1
Drawing and Detailing with SolidWorks	I-2
Trademarks, Disclaimer and Copyrighted Material	I-3
About the Authors	I-4
Acknowledgements	I-5
References	I-6
Table of Contents	I-7
What is SolidWorks?	I-10
Design Intent	I-15
Overview of Projects	I-19
SolidWorks Documents	I-21
Command Syntax	I-21
Windows Terminology	I-22
Windows Shortcuts	I-23
SolidWorks Keyboard Shortcuts	I-25
Learning Methods	I-26
Notes to Instructors	I-26
Project 1 – Drawing Template and Sheet Format	1-1
Project Objective	1-3
Project Overview	1-4
Engineering Drawing and Related Documentation Practices	1-5
File Management	1-6
Default Drawing Template, Sheet Format and Sheet Size	1-7
User Interface	1-11
Sheet Properties	1-17
Sheet Options	1-19
Document Properties	1-23
Detailing Document Properties	1-27
Annotations Font Document Properties	1-33
Dimensions options	1-35
Predefined Views	1-42
Save As	1-44
Sheet Format	1-47
Title Block Notes and Properties	1-54
System Properties, User defined Properties and Linked Notes	1-54
Size, Sheet and Scale Properties	1-59
Custom Property and Logo Picture	1-60
General Notes	1-66
Tables	1-67
Save Sheet Format and Save Drawing Template	1-70
A-size Drawing Template	1-72
Project Summary	1-74
Project Terminology	1-74
Questions and Exercises	1-76

Project 2 – Drawing View	2-1
Project Objective	2-3
Project Overview	2-4
Fundamentals of Orthographic Projection	2-8
Review the ROD part and configurations	2-11
ROD drawing: Sheet 1 Short Rod Configurations	2-17
ROD-Sheet2 Long Rod Configuration	2-22
ROD-Sheet3 Long Rod Configuration	2-25
Revolved Section	2-28
Broken Isometric view	2-31
Review the TUBE part	2-37
TUBE drawing	2-41
Section View and Detail View	2-44
Broken-out Section View, Auxiliary View and Crop View	2-47
Half Section Isometric (Cut-Away)	2-52
COVERPLATE drawing	2-58
Offset Section view and Aligned Section view	2-63
Additional View Options and View Properties	2-67
Multi-view Drawings	2-70
Project Summary	2-76
Project Terminology	2-76
Questions and Exercises	2-78
Project 3 – Fundamentals of Detailing	3-1
Project Objective	3-3
Project Overview	3-4
Detailing the TUBE drawings	3-10
Detailing the Section view, Top view and Detail view	3-16
Detailing the Detail view and Front view	3-26
Detailing the Right view, Back view and Holes	3-31
Adding Dimensions	3-39
Detailing Tips	3-43
Detailing the COVERPLATE drawing	3-46
Modifying Features	3-57
Dimension PropertyManager and Dimensioning Features	3-59
Additional Information – Hide, Dimension Schemes, Foreshorten Radii, Display	3-62
Location of Features, Baseline and Ordinate	3-67
Project Summary	3-70
Project Terminology	3-71
Questions and Exercises	3-72

Project 4 – Assembly Drawing	4-1
Project Objective	4-3
Project Overview	4-4
Exploded view	4-7
Create the Assembly Drawing and Insert Balloons	4-11
Bill of Materials – Part 1	4-15
Materials Editor and Mass Properties	4-19
Properties	4-22
Design Table	4-31
Bill of Materials – Part 2	4-38
CYLINDER Design Table	4-43
Multiple Configurations in a Drawing	4-48
Additional Information	4-57
Section View and Broken Out View	4-58
Hide Behind Plane	4-59
Large Assembly Mode	4-60
eDrawings	4-61
Export	4-61
Project Summary	4-62
Project Terminology	4-62
Questions and Exercises	4-64
Project 5 – Applied Geometric Tolerancing and Other Symbols	5-1
Project Objective	5-3
Project Overview	5-4
Create a New Drawing Template	5-6
Review the VALVEPLATE Part	5-7
Create the VALVEPLATE Drawing	5-10
Datum Features, Geometric Tolerance and Surface Finish Annotations	5-19
eDrawing	5-27
Y14.41 Digital Product Definition Data Practices	5-29
PLATE-TUBE Assembly Drawing and Weld Symbols	5-34
PLATE-CATALOG Drawing, Design Table and EXCEL Formatting	5-42
Blocks	5-57
Additional Information	5-61
Project Summary	5-63
Project Terminology	5-64
Questions and Exercises	5-65
Appendix -	
Steps to download components from SMC Corporation of America	A1
ECO Form	A4
Cursor Feedback	A5
Online URLs for additional SolidWorks assistance	A10

INDEX