

## **Solidwork 20command Guide Tutorial**

**Alejandro Reyes** 

#### **Solidwork 20command Guide Tutorial:**

Commands Guide Tutorial for SolidWorks 2012 David C. Planchard, Marie P. Planchard, 2011-12-18 The Commands Guide Tutorial for SolidWorks 2012 is a comprehensive reference book written to assist the beginner to intermediate user of SolidWorks 2012 SolidWorks is an immense software package and no one book can cover all topics for all users The book provides a centralized reference location to address many of the tools features and techniques of SolidWorks 2012 This book covers the following System and Document properties FeatureManagers PropertyManagers ConfigurationManagers RenderManagers 2D and 3D Sketch tools Sketch entities 3D Feature tools Motion Study Sheet Metal Motion Study Sustainability Sustainability Xpress FlowXpress PhotoView 360 Pack and Go Intelligent Modeling techniques and more Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SolidWorks 2012 software If you are completely new to SolidWorks you should read Chapter 1 in detail and complete Lesson 1 Lesson 2 and Lesson 3 in the SolidWorks Tutorials If you are familiar with an earlier release of SolidWorks you still might want to skim Chapter 1 to become acquainted with some of the commands menus and features that you have not used or you can simply jump to any section in any chapter Each chapter 18 total provides detail PropertyManager information on key topics with individual stand alone short tutorials to reinforce and demonstrate the functionality and ease of the SolidWorks tool or feature All models for the 240 plus tutorials are located on the enclosed book CD with their solution initial and final Learn by doing not just by reading Formulate the skills to create modify and edit sketches and solid features Learn the techniques to reuse features parts and assemblies through symmetry patterns copied components design tables configurations and more The book is design to compliment the Online Tutorials and Online Help contained in SolidWorks 2012 The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs. The authors developed the tutorials by combining their own industry experience with the knowledge of engineers department managers professors vendors and manufacturers These professionals are directly involved with SolidWorks everyday Their responsibilities go far beyond the creation of just a 3D model Beginner's Guide to SOLIDWORKS 2020 - Level I Alejandro Reyes, 2019-11 This book is intended to help new users learn the basic concepts of SOLIDWORKS and good solid modeling techniques in an easy to follow guide that includes video instruction It is a great starting point for those new to SOLIDWORKS or as a teaching aid in classroom training to become familiar with the software s interface basic commands and strategies as users complete a series of models while learning different ways to accomplish a particular task At the end of this book you will have a fairly good understanding of the SOLIDWORKS interface and the most commonly used commands for part modeling assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials The book focuses on the processes to complete the modeling of a part instead of focusing on individual software commands or operations which are generally simple enough to learn Throughout this book the author introduces you to new commands that are required to

pass the Certified SOLIDWORKS Associate exam as listed on the SOLIDWORKS website A dedicated chapter provides you with details about the exam as well as a practice test to help you prepare for the actual exam SOLIDWORKS is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before Most commands covered in this book have advanced options which may not be covered in this book This is meant to be a starting point to help new users to learn the basic and most frequently used commands 2020 Reference Guide David Planchard, 2019-12 A comprehensive reference book for SOLIDWORKS 2020 Contains 260 plus standalone tutorials Starts with a basic overview of SOLIDWORKS 2020 and its new features Tutorials are written for each topic with new and intermediate users in mind Includes access to each tutorial s initial and final state Contains a chapter introducing you to 3D printing The SOLIDWORKS 2020 Reference Guide is a comprehensive reference book written to assist the beginner to intermediate user of SOLIDWORKS 2020 SOLIDWORKS is an immense software package and no one book can cover all topics for all users This book provides a centralized reference location to address many of the tools features and techniques of SOLIDWORKS 2020 This book covers the following System and Document properties FeatureManagers PropertyManagers ConfigurationManagers RenderManagers 2D and 3D Sketch tools Sketch entities 3D Feature tools Motion Study Sheet Metal Motion Study SOLIDWORKS Simulation PhotoView 360 Pack and Go 3D PDFs Intelligent Modeling techniques 3D printing terminology and more Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SOLIDWORKS 2020 software If you are completely new to SOLIDWORKS you should read Chapter 1 in detail and complete Lesson 1 Lesson 2 and Lesson 3 in the SOLIDWORKS Tutorials If you are familiar with an earlier release of SOLIDWORKS you still might want to skim Chapter 1 to become acquainted with some of the commands menus and features that you have not used or you can simply jump to any section in any chapter Each chapter provides detailed PropertyManager information on key topics with individual stand alone short tutorials to reinforce and demonstrate the functionality and ease of the SOLIDWORKS tool or feature The book provides access to over 260 models their solutions and additional support materials Learn by doing not just by reading Formulate the skills to create modify and edit sketches and solid features Learn the techniques to reuse features parts and assemblies through symmetry patterns copied components design tables configurations and more The book is designed to complement the Online Tutorials and Online Help contained in SOLIDWORKS 2020 The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs The author developed the tutorials by combining his own industry experience with the knowledge of engineers department managers professors vendors and manufacturers He is directly involved with SOLIDWORKS every day and his responsibilities go far beyond the creation of just a 3D model Commands Guide Tutorial for SolidWorks 2013 David C. Planchard, Marie P. Planchard, 2012-12-27 The Commands Guide Tutorial for SolidWorks 2013 is a comprehensive reference book written to assist the beginner to intermediate user of SolidWorks 2013 SolidWorks is an immense software

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230 plus tutorials are located on the enclosed CD with their solution initial and final Learn by doing not just by reading Formulate the skills to create modify and edit sketches and solid features Learn the techniques to reuse features parts and assemblies through symmetry patterns copied components design tables configurations and more The book is designed to compliment the Online Tutorials and Online Help contained in SolidWorks 2010 The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs. The authors developed the tutorials by combining their own industry experience with the knowledge of engineers department managers vendors and manufacturers These professionals are directly involved with SolidWorks everyday Their responsibilities go far beyond the creation of just a 3D Beginner's Guide to SolidWorks 2014 - Level I Alejandro Reyes, 2014-02-26 This book is intended to help new model users learn the basic concepts of SolidWorks and good solid modeling techniques in an easy to follow guide that includes video instruction It is a great starting point for those new to SolidWorks or as a teaching aid in classroom training to become familiar with the software s interface basic commands and strategies as the user completes a series of models while learning different ways to accomplish a particular task At the end of this book you will have a fairly good understanding of the SolidWorks interface and the most commonly used commands for part modeling assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials The book focuses on the processes to complete the modeling of a part instead of focusing on individual software commands or operations which are generally simple enough to learn The author strived hard to include the commands required in the Certified SolidWorks Associate test as listed on the SolidWorks website as well as several more SolidWorks is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before Most commands covered in this book have advanced options which may not be covered in this book This is meant to be a starting point to help new users to learn the basic and most frequently used commands A Commands Guide Tutorial for SolidWorks 2007 David C. Planchard, Marie P. Planchard. 2007 Beginner's Guide to SolidWorks 2014 - Level II Alejandro Reyes, 2014-02-26 Beginner s Guide to SolidWorks 2014 Level II starts where Beginner's Guide Level I ends following the same easy to read style and companion video instruction but this time covering advanced topics and techniques The purpose of this book is to teach advanced techniques including sheet metal surfacing how to create components in the context of an assembly and reference other components Top down design propagate design changes with SolidWorks parametric capabilities mold design welded structures and more while explaining the basic concepts of each trade to allow you to understand the how and why of each operation The author uses simple examples to allow you to better understand each command and environment as well as to make it easier to explain the purpose of each step maximizing the learning time by focusing on one task at a time This book is focused on the processes to complete the modeling of a part instead of focusing on individual software commands or operations which are generally simple enough to learn At the end of this book you will have acquired enough skills to be

highly competitive when it comes to designing with SolidWorks and while there are many less frequently used commands and options available that will not be covered in this book rest assured that those covered are most of the commands used every day by SolidWorks designers The author strived hard to include the commands required in the Certified SolidWorks Associate test as listed on the SolidWorks website and some as well as several more Commands Guide Tutorial for SolidWorks 2011 David C. Planchard, Marie P. Planchard, 2010 The Commands Guide Tutorial for SolidWorks 2011 is a comprehensive reference book written to assist the beginner to intermediate user of SolidWorks 2011 SolidWorks is an immense software package and no one book can cover all topics for all users. The book provides a centralized reference location to address many of the tools features and techniques of SolidWorks 2011 This book covers the following System and Document properties FeatureManagers PropertyManagers ConfigurationManagers RenderManagers 2D and 3D Sketch tools Sketch entities 3D Feature tools Motion Study Sheet Metal Motion Study Sustainability Sustainability Xpress FlowXpress PhotoView 360 Pack and Go Intelligent Modeling techniques and more Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SolidWorks 2011 software If you are completely new to SolidWorks you should read Chapter 1 in detail and complete Tutorial 1 Tutorial 2 and Tutorial 3 in the SolidWorks Tutorials If you are familiar with an earlier release of SolidWorks you might still want to skim Chapter1 to get acquainted with some of the new commands menus and features that you haven t used or you can simply jump to any section in any chapter Each chapter 18 total provides detailed PropertyManager information on key topics with individual stand alone short tutorials to reinforce and demonstrate the functionality and ease of the SolidWorks tool or feature All models for the 240 plus tutorials are provided on the enclosed book CD with their solution initial and final Learn by doing not just reading Formulate the skills to create modify and edit sketches and solid features You will also learn the techniques to reuse features parts and assemblies through symmetry patterns copied components design tables configurations and more The book is designed to compliment the Online Tutorials and Online Help contained in SolidWorks 2011 The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs Beginner's Guide to SOLIDWORKS 2021 - Level I Alejandro Reves, 2021-01-29 This book is intended to help new users learn the basic concepts of SOLIDWORKS and good solid modeling techniques in an easy to follow guide that includes video instruction It is a great starting point for those new to SOLIDWORKS or as a teaching aid in classroom training to become familiar with the software s interface basic commands and strategies as users complete a series of models while learning different ways to accomplish a particular task At the end of this book you will have a fairly good understanding of the SOLIDWORKS interface and the most commonly used commands for part modeling assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials The book focuses on the processes to complete the modeling of a part instead of focusing on individual software commands or operations which are generally simple enough to learn Throughout this book the author introduces you to new

commands that are required to pass the Certified SOLIDWORKS Associate exam as listed on the SOLIDWORKS website A dedicated chapter provides you with details about the exam as well as a practice test to help you prepare for the actual exam SOLIDWORKS is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before Most commands covered in this book have advanced options which may not be covered in this book This is meant to be a starting point to help new users to learn the basic and most frequently used Beginner's Guide to SOLIDWORKS 2018 - Level I Alejandro Reyes, 2017-10 This book is intended to help new users learn the basic concepts of SOLIDWORKS and good solid modeling techniques in an easy to follow guide that includes video instruction It is a great starting point for those new to SOLIDWORKS or as a teaching aid in classroom training to become familiar with the software s interface basic commands and strategies as users complete a series of models while learning different ways to accomplish a particular task At the end of this book you will have a fairly good understanding of the SOLIDWORKS interface and the most commonly used commands for part modeling assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials The book focuses on the processes to complete the modeling of a part instead of focusing on individual software commands or operations which are generally simple enough to learn The author strived hard to include the commands required in the Certified SOLIDWORKS Associate and Certified SOLIDWORKS Professional Exams as listed on the SOLIDWORKS website SOLIDWORKS is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before Most commands covered in this book have advanced options which may not be covered in this book This is meant to be a starting point to help new users to learn the basic and most frequently used commands Includes Video Instruction Each copy of this book includes access to video instruction In these videos the author provides a visual presentation of tutorials found in the book The videos reinforce the steps described in the book by allowing you to watch the exact steps the Solidworks 2020 Sdcad Academy, 2021-01-15 SOLIDWORKS 2020 A Step By Step author uses to complete the exercises Tutorial Guide for Beginners Mixed Units textbook is intended to help students designers engineers and professionals who are interested in learning SOLIDWORKS step by step for creating real world 3D mechanical designs It is a great starting point for new users of SOLIDWORKS and for those moving from other CAD software This textbook contains tutorials that provide users with step by step instructions for creating parametric 3D solid components assemblies and 2D drawings with ease Every tutorial in this textbook is created based on real world projects This textbook consists of 11 chapters a total of 428 pages covering major environments of SOLIDWORKS such as Part modeling environment Assembly environment and Drawing environment including configurations Every chapter ends with exercises that allow users to experience for themselves the user friendly and powerful capacities of SOLIDWORKS which help users to assess their knowledge Table of Contents Chapter 1 Introduction to SOLIDWORKS Chapter 2 Creating and Editing Sketches Chapter 3 Creating Extrude and

Revolve Features Chapter 4 Creating Multi Feature 3D Models Chapter 5 Creating Sweep and Loft Features Chapter 6 Creating Holes Threads and Shell Features Chapter 7 Creating 3D Sketches and Helical Curves Chapter 8 Working with Configurations Chapter 9 Creating Assemblies Using Bottom up Approach Chapter 10 Creating Assemblies Using Top down Approach Chapter 11 Creating 2D Drawings **SOLIDWORKS 2020 Tutorial** David Planchard, 2019-12 Uses step by step project based tutorials designed for beginning or intermediate users Will prepare you for the Certified SOLIDWORKS Associate Exam Includes a chapter introducing you to 3D printing SOLIDWORKS 2020 Tutorial is written to assist students designers engineers and professionals who are new to SOLIDWORKS The text provides a step by step project based learning approach It also contains information and examples on the five categories in the CSWA exam The book is divided into four sections Chapters 1 5 explore the SOLIDWORKS User Interface and CommandManager Document and System properties simple and complex parts and assemblies proper design intent design tables configurations multi sheet multi view drawings BOMs and Revision tables using basic and advanced features In chapter 6 you will create the final robot assembly The physical components and corresponding Science Technology Engineering and Math STEM curriculum are available from Gears Educational Systems All assemblies and components for the final robot assembly are provided Chapters 7 10 prepare you for the Certified Associate Mechanical Design CSWA exam The certification indicates a foundation in and apprentice knowledge of 3D CAD and engineering practices and principles Chapter 11 covers the benefits of additive manufacturing 3D printing how it differs from subtractive manufacturing and its features You will also learn the terms and technology used in low cost 3D printers Follow the step by step instructions and develop multiple assemblies that combine over 100 extruded machined parts and components Formulate the skills to create modify and edit sketches and solid features Learn the techniques to reuse features parts and assemblies through symmetry patterns copied components apply proper design intent design tables and configurations Learn by doing not just by reading Desired outcomes and usage competencies are listed for each chapter Know your objective up front Follow the steps in each chapter to achieve your design goals Work between multiple documents features commands custom properties and document properties that represent how engineers and designers utilize SOLIDWORKS in industry **Solidworks 2020** John Willis, Sandeep Dogra, CADArtifex, 2020-01-20 SOLIDWORKS 2020 A Power Guide for Beginners and Intermediate User textbook is designed for instructor led courses as well as for self paced learning It is intended to help engineers and designers interested in learning SOLIDWORKS for creating 3D mechanical design This textbook is a great help for new SOLIDWORKS users and a great teaching aid in classroom training This textbook consists of 14 chapters total 800 pages covering the major environments of SOLIDWORKS such as Sketching environment Part modeling environment Assembly environment and Drawing environment This textbook teaches users to use SOLIDWORKS mechanical design software for creating parametric 3D solid components assemblies and 2D drawings This textbook also includes a chapter on creating multiple configurations of a design This textbook not only

focuses on the usage of the tools and commands of SOLIDWORKS but also on the concept of design Every chapter in this textbook contains tutorials that provide users with step by step instructions for creating mechanical designs and drawings with ease Moreover every chapter ends with hands on test drives which allow users to experience the user friendly and technical capabilities of SOLIDWORKS Table of Contents Chapter 1 Introduction to SOLIDWORKS Chapter 2 Drawing Sketches with SOLIDWORKS Chapter 3 Editing and Modifying Sketches Chapter 4 Applying Geometric Relations and Dimensions Chapter 5 Creating First Base Feature of Solid Models Chapter 6 Creating Reference Geometries Chapter 7 Advanced Modeling I Chapter 8 Advanced Modeling II Chapter 9 Patterning and Mirroring Chapter 10 Advanced Modeling III Chapter 11 Working with Configurations Chapter 12 Working with Assemblies I Chapter 13 Working with Assemblies II Chapter 14 Working with Drawings Main Features of the Textbook Comprehensive coverage of tools Step by step real world tutorials with every chapter Hands on test drives to enhance the skills at the end of every chapter Additional notes and tips Customized content for faculty PowerPoint Presentations Free learning resources for faculty and students Additional student and faculty projects Technical support for the book by contacting info cadartifex com SOLIDWORKS 2018 Reference Guide David Planchard, 2018-01-29 The SOLIDWORKS 2018 Reference Guide is a comprehensive reference book written to assist the beginner to intermediate user of SOLIDWORKS 2018 SOLIDWORKS is an immense software package and no one book can cover all topics for all users This book provides a centralized reference location to address many of the tools features and techniques of SOLIDWORKS 2018 This book covers the following System and Document propertiesFeatureManagersPropertyManagersConfigurationManagersRenderManagers2D and 3D Sketch toolsSketch entities3D Feature toolsMotion StudySheet MetalMotion StudySOLIDWORKS SimulationPhotoView 360Pack and Go3D PDFsIntelligent Modeling techniques3D printing terminology and more Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SOLIDWORKS 2018 software If you are completely new to SOLIDWORKS you should read Chapter 1 in detail and complete Lesson 1 Lesson 2 and Lesson 3 in the SOLIDWORKS Tutorials If you are familiar with an earlier release of SOLIDWORKS you still might want to skim Chapter 1 to become acquainted with some of the commands menus and features that you have not used or you can simply jump to any section in any chapter Each chapter provides detailed PropertyManager information on key topics with individual stand alone short tutorials to reinforce and demonstrate the functionality and ease of the SOLIDWORKS tool or feature The book provides access to over 250 models their solutions and additional support materials Learn by doing not just by reading Formulate the skills to create modify and edit sketches and solid features Learn the techniques to reuse features parts and assemblies through symmetry patterns copied components design tables configurations and more The book is designed to complement the Online Tutorials and Online Help contained in SOLIDWORKS 2018 The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs The author developed the tutorials by combining his own industry experience with the

knowledge of engineers department managers professors vendors and manufacturers He is directly involved with SOLIDWORKS every day and his responsibilities go far beyond the creation of just a 3D model **Beginner's Guide to Solidworks 2012** Alejandro Reyes, 2012-03-12 This book is intended to help new users to learn the basic concepts of SolidWorks and good solid modeling techniques in an easy to follow guide It will be a great starting point for those new to SolidWorks or as a teaching aid in classroom training to become familiar with the software s interface basic commands and strategies as the user completes a series of models while learning different ways to accomplish a particular task At the end of this book you will have a fairly good understanding of the SolidWorks interface and the most commonly used commands for part modeling assembly and detailing after completing a series of components and their 2D drawings complete with Bill of Materials The book is focused on the processes to complete the modeling of a part instead of focusing on individual software commands or operations which are generally simple enough to learn The author strived hard to include the commands required in the Certified SolidWorks Associate test as listed on the SolidWorks website as well as several more SolidWorks is an easy to use CAD software that includes many time saving tools that will enable new and experienced users to complete design tasks faster than before Most commands covered in this book have advanced options which may not be covered in this book This is meant to be a starting point to help new users to learn the basic and most frequently used commands

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multiple documents features commands custom properties and document properties that represent how engineers and designers utilize SOLIDWORKS in industry SOLIDWORKS 2019 Reference Guide David Planchard, 2018-12-05 The SOLIDWORKS 2019 Reference Guide is a comprehensive reference book written to assist the beginner to intermediate user of SOLIDWORKS 2019 SOLIDWORKS is an immense software package and no one book can cover all topics for all users This book provides a centralized reference location to address many of the tools features and techniques of SOLIDWORKS 2019 This book covers the following System and Document properties FeatureManagers PropertyManagers ConfigurationManagers RenderManagers 2D and 3D Sketch tools Sketch entities 3D Feature tools Motion Study Sheet Metal Motion Study SOLIDWORKS Simulation PhotoView 360 Pack and Go 3D PDFs Intelligent Modeling techniques 3D printing terminology and more Chapter 1 provides a basic overview of the concepts and terminology used throughout this book using SOLIDWORKS 2019 software If you are completely new to SOLIDWORKS you should read Chapter 1 in detail and complete Lesson 1 Lesson 2 and Lesson 3 in the SOLIDWORKS Tutorials If you are familiar with an earlier release of SOLIDWORKS you still might want to skim Chapter 1 to become acquainted with some of the commands menus and features that you have not used or you can simply jump to any section in any chapter Each chapter provides detailed PropertyManager information on key topics with individual stand alone short tutorials to reinforce and demonstrate the functionality and ease of the SOLIDWORKS tool or feature The book provides access to over 260 models their solutions and additional support materials Learn by doing not just by reading Formulate the skills to create modify and edit sketches and solid features Learn the techniques to reuse features parts and assemblies through symmetry patterns copied components design tables configurations and more The book is designed to complement the Online Tutorials and Online Help contained in SOLIDWORKS 2019 The goal is to illustrate how multiple design situations and systematic steps combine to produce successful designs The author developed the tutorials by combining his own industry experience with the knowledge of engineers department managers professors vendors and manufacturers He is directly involved with SOLIDWORKS every day and his responsibilities go far beyond the creation of just a 3D model **SOLIDWORKS 2020 Advanced Techniques** Paul Tran, 2020 The perfect follow up to SOLIDWORKS Intermediate Skills Uses a step by step tutorial approach with real world projects Comprehensive coverage of advanced SOLIDWORKS tools and techniques Covers parts surfaces SimulationXpress sheet metal top down assemblies and core and cavity molds Features a quick reference guide and a Certified SOLIDWORKS Professional practice exam SOLIDWORKS 2020 Advanced Techniques picks up where SOLIDWORKS 2020 Intermediate Skills leaves off Its aim is to take you from an intermediate user with a basic understanding of SOLIDWORKS and modeling techniques to an advanced user capable of creating complex models and able to use the advanced tools provided by SOLIDWORKS The text covers parts surfaces SimulationXpress sheet metal top down assemblies and core and cavity molds Every lesson and exercise in this book was created based on real world projects Each of these projects has been broken down

and developed into easy and comprehensible steps Furthermore at the end of every chapter there are self test questionnaires to ensure that you have gained sufficient knowledge from each section before moving on to more advanced lessons This book takes the approach that in order to understand SOLIDWORKS inside and out you should create everything from the beginning and take it step by step SOLIDWORKS 2024: A Power Guide for Beginners and Intermediate Users Sandeep Dogra, SOLIDWORKS 2024 A Power Guide for Beginners and Intermediate Users textbook is designed for both instructor led courses and self paced learning It is intended to help engineers and designers interested in learning SOLIDWORKS for creating 3D mechanical designs This is a valuable resource for new SOLIDWORKS users and a great teaching tool for classroom training With 14 chapters and a total of 780 pages the content extensively covers key SOLIDWORKS environments such as Sketching Part Modeling Assembly and Drawing This textbook teaches users to use SOLIDWORKS mechanical design software for creating parametric 3D solid components assemblies and 2D drawings Additionally a dedicated chapter is included to guide users in creating multiple configurations of a design This textbook not only focuses on the usage of the tools and commands of SOLIDWORKS but also the concept of design Every chapter in this textbook contains tutorials that provide users with step by step instructions for creating mechanical designs and drawings with ease Additionally every chapter ends with practical hands on test drives that allow users to experience the user friendly and powerful technical capabilities of SOLIDWORKS

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