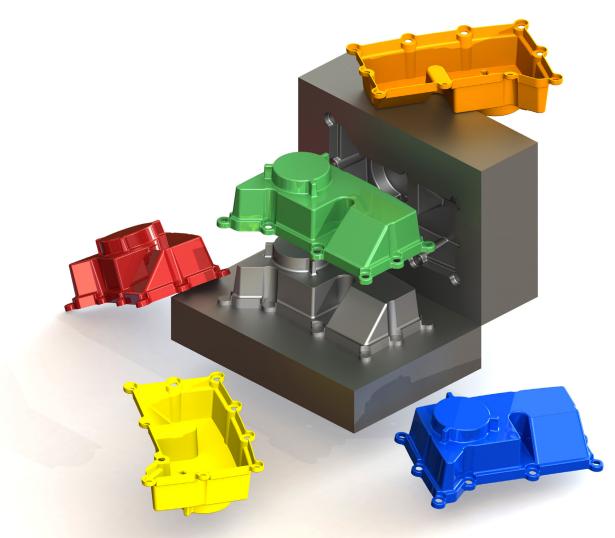
# The Complete Guide to Mold Making with SOLIDWORKS 2025 Basic through Advanced Techniques



Paul Tran CSWE, CSWI



# Visit the following websites to learn more about this book:





Googlebooks



# TAPLE OF CONTENTS

# Basic Through Advanced Mold Making Using SolidWorks

Chapter 1:	Plastic part designs 1	1-1
	Remote Control	1-1
00	Starting a new part document	1-1
C ( 52)	Extruding the main body	1-2
	Making a curved cut	1-2
	Adding fillets	1-3
	Shelling the part	1-4
	Making a recess feature	1-6
	Copying a sketch	1-7
	Creating the button holes	1-7
	Inserting the mounting bosses	1-8
$\land$	Adding the support ribs	1-9
	Adding the rib fillets	1-11
	Assigning material	1-12
	Changing colors	1-13
	Calculating the mass	1-14
	Creating the core and cavity molds	1-15
	Applying the scale factor	1-15
	Creating the parting lines	1-15
	Inserting the shut-off surfaces	1-16
	Making the parting surfaces	1-17
	Adding a reference plane	1-18
	Inserting a tooling split	1-19
TELE	Separating the mold blocks	1-20
	Hiding the references	1-21
	Renaming the solid bodies	1-21
Contraction of the second	Assigning materials	1-22
	Exercise - Plastic part design 2	1-23

# Chapter 2: Surface Repair





Surface Repair – Mouse	2-1
Opening a parasolid document	2-1
Running Import Diagnostics	2-1
Examining the results	2-2
Deleting surfaces and holes	2-3
Patching the gaps	2-4
Adding drafts	2-5
Making a split line	2-6
Creating face fillets	2-7
Adding thickness	2-8
Creating a recess cut	2-9
Assigning material	2-10
Exercise: Repair surfaces	2-11

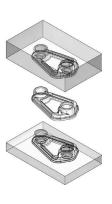
# Chapter 3: Core and Cavity Creation

3-1

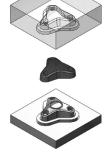
3-15

3-16

3-17



Core and Cavity – Plastic Tray	3-1
Opening a part document	3-1
Applying the scale factor	3-1
Creating the parting lines	3-2
Making the parting surfaces	3-3
Sketching the profile of the mold block	3-4
Inserting a tooling split feature	3-5
Hiding the references	3-6
Applying materials	3-7
Changing the transparency	3-7
Separating the mold blocks	3-8
Core and cavity exercise	3-11
Plastic Knob	
Applying the scale factor	3-11
Creating the parting lines	3-12
Creating the shut-off surfaces	3-13
Making the parting surfaces	3-14
Adding a new plane	3-15





Sketching the profile of the mold block

Inserting a tooling split feature

Separating the mold blocks

Planar Parting Lines – Drone's Canopy

# **Chapter 4: Planar Parting Lines**

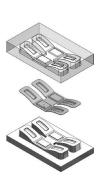
4-	1
----	---

4-1

Opening a part document	4-1
Applying the scale factor	4-1
Creating the parting lines	4-2
Creating the parting surfaces	4-3
Making the sketch of the mold block	4-4
Inserting a tooling split feature	4-4
Adding a command to the toolbar	4-5
Separating the mold block	4-6
Hiding the references	4-7
Renaming the solid bodies	4-8
Assigning material	4-8
Changing to transparency	4-9
Planar Parting Lines Exercise	4-11
Planar Parting Lines Exercise Drone Cover Housing	4-11
_	<b>4-11</b> 4-11
Drone Cover Housing	
<b>Drone Cover Housing</b> Opening a part document	4-11
<b>Drone Cover Housing</b> Opening a part document Scaling the part	4-11 4-11
<b>Drone Cover Housing</b> Opening a part document Scaling the part Creating the parting lines	4-11 4-11 4-12
<b>Drone Cover Housing</b> Opening a part document Scaling the part Creating the parting lines Creating the parting surfaces	4-11 4-11 4-12 4-13
<b>Drone Cover Housing</b> Opening a part document Scaling the part Creating the parting lines Creating the parting surfaces Adding a new plane	4-11 4-11 4-12 4-13 4-14
<b>Drone Cover Housing</b> Opening a part document Scaling the part Creating the parting lines Creating the parting surfaces Adding a new plane Making the mold block sketch	4-11 4-11 4-12 4-13 4-14 4-15

# Chapter 5: Interlock Surface

5-1

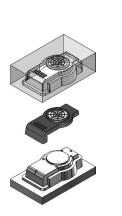


Interlock Surface 1: Stabilizer	5-1
Opening a part document	5-1
Applying the scale factor	5-1
Creating the parting lines	5-2
Creating the parting surfaces	5-3
Making the mold block sketch	5-4
Inserting a tooling split feature	5-4
Hiding the references	5-5
Changing materials	5-5
Separating the mold block	5-6
Changing the transparency	5-7

#### The Complete Guide to Mold Making with SOLIDWORKS 2025 I Table of Contents

	Interlock Surface 2: Plastic Cap	5-9
	Opening a part document	5-9
	Applying the scale factor	5-9
	Creating the parting lines	5-10
	Adding the shut-off surfaces	5-11
	Creating the parting surfaces	5-12
	Adding a new plane	5-13
	Making the mold block sketch	5-13
	Creating a tooling split feature	5-14
	Separating the mold block	5-15
	Renaming the solid bodies	5-17
	Assigning materials	5-17
	Changing the transparency	5-18
	Interlock Surface Exercise	5-19
	Round Knob	
	Opening a part document	5-19
	Applying the scale factor	5-19
( C)	Creating the parting lines	5-20
	Creating the parting surfaces	5-21
603	Adding a new plane	5-22
	Making the sketch of the mold block	5-22
	Inserting a tooling split feature	5-23
	Assigning materials	5-24

# Chapter 6: Non-Planar Parting Lines 6-1



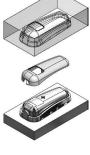
Non-Planar parting Lines – Fan Cover	6-1
Opening a part document	6-1
Applying the scale factor	6-1
Creating the parting lines	6-2
Creating the shut-off surfaces	6-3
Creating the parting surfaces	6-4
Adding a new plane	6-4
Making the mold block sketch	6-5
Splitting the mold blocks	6-5
Hiding the references	6-6
Separating the mold blocks	6-7
Changing the transparency	6-8
Renaming the solid bodies	6-8
Assigning materials	6-9

	Non-Planar Parting Lines Exercise Meter Reader Upper Housing	6-11
	Opening a part document	6-11
	Applying the scale factor	6-11
	Creating the parting lines	6-12
$\land$	Creating the parting surfaces	6-13
	Adding the ruled surfaces	6-14
	Making a lofted surface	6-15
	Extending a surface	6-15
$\geq$	Trimming the surfaces	6-16
	Knitting the surfaces	6-20
	Creating the shut-off surfaces	6-21
	Adding a new plane	6-21
	Inserting a tooling split feature	6-22
	Adjusting the block thickness	6-22
	Adding an interlock surface	6-22
	Separating the mold block	6-23
	Hiding the references	6-23
	Changing materials	6-24
	Renaming the solid bodies	6-24

# Chapter 7: Manual Parting Lines

Manual Parting Lines - Heat Shield	7-1
Open a part document	7-1
Applying the scale factor	7-1
Creating the parting lines	7-2
Creating the shut-off surfaces	7-3
Creating the parting surfaces	7-4
Making the ruled surfaces	7-6
Trimming with a sketch	7-7
Making a 3D sketch	7-8
Creating corner patches	7-9
Knitting the surfaces	7-11
Adding a reference plane	7-12
Inserting a tooling split feature	7-13
Separating the mold blocks	7-14
Hiding the references	7-15
Changing the transparency	7-16

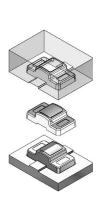
7-1



Chapter 8:	Undercuts and Slide Cores	8-1
-	Stress Gauge Upper Housing	8-1
	Open a part document	8-1
550 00 00 00 00 00 00 00 00 00 00 00 00	Applying the scale factor	8-1
	Creating the parting lines	8-2
55°°°°	Adding the shut-off surfaces	8-3
	Making the parting surfaces	8-4
	Sketching the mold block profile	8-5
	Splitting the mold blocks	8-5
	Analyzing the undercuts	8-6
	Sketching the slide core profile	8-7
	Extruding the slide core block	8-8
P	Separating the mold blocks	8-9
De an	Moving the slide core block	8-10
	Hiding the references	8-11
999	Changing the transparency	8-12
	Exercise: Multi-Cavity molds	8-13
Chapter 9:	Alternative Methods	9-1
	Using Combine Subtract – Rocker Arm	9-1
$\sim$	Open a part document	9-1
	Applying the scale factor	9-1
	Making the sketch of the mold block	9-2
•	Extruding the mold block	9-2
	Creating a combine subtract feature	9-3
	Splitting a solid body	0.4
		9-4
	Rotating a solid body	9-4 9-5
	Rotating a solid body	9-5 <b>9-6</b> 9-6
a contraction of the second	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch	9-5 <b>9-6</b> 9-6 9-7
Contraction of the second	Rotating a solid body <b>Using Cut with Surface – Rocker Arm</b> Isolating a surface body Making the mold block sketch Converting a sketch to surface	9-5 <b>9-6</b> 9-7 9-8
North Contraction of the second se	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces	9-5 9-6 9-7 9-8 9-9
Contraction of the second seco	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces Knitting the surfaces	9-5 9-6 9-7 9-8 9-9 9-10
and the second	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces Knitting the surfaces Creating an extruded boss	9-5 9-6 9-7 9-8 9-9 9-10 9-11
a second	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces Knitting the surfaces Creating an extruded boss Cutting with a surface	9-5 9-6 9-7 9-8 9-9 9-10 9-11 9-12
	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces Knitting the surfaces Creating an extruded boss	9-5 9-6 9-7 9-8 9-9 9-10 9-11
	Rotating a solid body Using Cut with Surface – Rocker Arm Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces Knitting the surfaces Creating an extruded boss Cutting with a surface Moving a solid body Using Cavity in Assembly – Rocker Arm	9-5 9-6 9-7 9-8 9-9 9-10 9-11 9-12 9-13 <b>9-14</b>
	Rotating a solid body <b>Using Cut with Surface – Rocker Arm</b> Isolating a surface body Making the mold block sketch Converting a sketch to surface Trimming the surfaces Knitting the surfaces Creating an extruded boss Cutting with a surface Moving a solid body	9-5 9-6 9-7 9-8 9-9 9-10 9-11 9-12 9-13

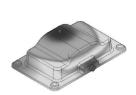
Editing a component	9-15
Inserting a cavity feature	9-15
Creating an exploded view	9-16

# **Chapter 10: Thickness Analysis**



Thickness Analysis – Medication Upper Case	10-1
Open a part document	10-1
Setting the parameters	10-1
Analyzing the thickness	10-2
Viewing the results	10-2
Creating a section view	10-3
Locating the thick and thin regions	10-3
Re-ordering features	10-4
Scaling the part	10-5
Creating the parting lines	10-5
Making the parting surfaces	10-6
Adding a new plane	10-7
Sketching the mold block profile	10-7
Inserting a tooling split	10-8
Adjusting the block sizes	10-8
Hiding the references	10-9
Renaming the solid bodies	10-9
Separating the mold blocks	10-10
Changing the transparency	10-11

# Chapter 11: Using SOLIDWORKS Plastics 11-1



Plastics Analysis– Basin	11-1
Open a part document	11-1
Enabling SOLIDWORKS Plastics	11-1
The PlasticsManager	11-2
Setting the domains and boundary conditions	11-2
Specifying the injection location	11-4
Creating a shell mesh	11-5
Assigning material	11-5
Running the flow analysis	11-6
Viewing the flow results	11-7
Viewing the reports	11-9

# 10-1

# Chapter 12: SOLIDWORKS Plastics Flow Analysis 12-1

Plastics – Flow Simulation Analysis	12-1
Open a part document	12-1
Enabling SOLIDWORKS Plastics	12-1
Setting up the mesh properties	12-2
Viewing the PlasticsManager tree	12-2
Adding an injection location	12-4
Creating a mesh	12-5
Selecting a polymer	12-5
Running the flow analysis	12-6
Viewing the fill-time plot	12-7
Animating the results	12-8
Displaying the weld lines	12-9
Viewing the results	12-10

## **Model Library**

#### **Glossary and Index**

### **SOLIDWORKS 2025 Quick-Guides:**

Quick Reference Guide to SOLIDWORKS 2025 Command Icons and Toolbars.

