Getting Started

Before getting into the detailed instructions for using CATIA Version 5 Wireframe and Surface, the following tutorial aims at giving you a feel about what you can do with the product. It provides a step-by-step scenario showing you how to use key functionalities.

The main tasks described in this section are:

Entering the Workbench Creating Wireframe Geometry Creating First Loft Creating Swept Surfaces Creating Second Loft Joining the Surfaces Closing the Surfaces

This tutorial should take about ten minutes to complete.

The final part will look like this:



Entering the Workbench

This first task shows you how to enter the Wireframe and Surface workbench and open a design part.



Before starting this scenario, you should be familiar with the basic commands common to all workbenches. These are described in the *Infrastructure User's Guide*.



 Select Mechanical Design -> Wireframe and Surface Design from the Start menu.

The Wireframe and Surface workbench is displayed.

2. Select File -> Open then select the GettingStartedWireframeAndSurface. CATPart document.

The following design part is displayed.



In the rest of this scenario, you will add to the existing elements of this part to complete the design.



Entering the Workbench



Creating Wireframe Construction Elements

This task shows you how create wireframe construction elements using the vertices of solids.



1. Click the Line icon

The Line Definition dialog box appears.

Line Definition 🔗 🗙					
Line type	: Point-Point	-			
Point 1:	Pad.1\Vertex	1.000			
Point 2:	Pad.2\Vertex				
Support:	Default (None)				
Start:	Omm	-			
End:	Omm	-			
Mirrored extent					
OK	🗌 🎐 Apply 📔 🎾 C	ancel			

2. Create a line by selecting a vertex on Pad 1 and the corresponding vertex on Pad 2.



3. Repeat this steps to create four lines as shown in the opposite figure.







Creating a First Loft Surface

This task shows how to create a lofted surface.

1



The Lofted Surface Definition dialog box appears.

Lofted Surface Definition : Loft 🛛 🔗 🔀					
N* Section Tangent Closing Point 1 Pad.2\Edge.1 2 Pad.1\Edge.2					
Guides Spine Coupling Relimitatic T					
Replace Remove Add					

 Select the curved edge on each pad as sections for the loft. Arrows must point the same way on each side of the loft.





3. Click OK to create the surface.







Creating Two Swept Surfaces

This task shows how to create two swept surfaces between opposite edges of the two pads.

- 1
- 1. Click the Sweep icon 🤣

The Swept Surface Definition dialog box appears.

- 2. Select the vertical edge of Pad 2 as profile.
- **3.** Select the bottom line as first guide curve.
- 4. Click the Second Guide tab then select the inclined line as second guide curve.
- 5. Click OK to create the swept surface.

wept Surface Definition 🛛 🔹 🏾 🕐
Profile type: 🎻 💉 💉
Profile: No selection
Guide curve: No selection
Optional elements
Reference Second Guide
Surface: No selection
Angle: Odeg 🚔 Law
Spiper No selection
Delimiter 1. No selection
Relimiter 2: No selection
Smooth sweeping
Angular correction: 0.5deg
Position profile Show parameters >>
Cancel
Guide curve Profile

6. Repeat these steps on the other side to create a second swept surface.

In the opposite figure the previously created lofted surface is hidden in order to illustrate the swept surfaces better.





Creating a Second Loft Surface

This task shows how to create the second lofted surface at the bottom of the part.

In the illustrations below, the first loft and both sweeps have been hidden.



1. Click the Loft icon

The Lofted Surface Definition dialog box appears.

L	Lofted Surface Definition : Loft 🛛 🔗 🔀							
	N° 1 2	Sectio Pad.2' Pad.1'	n \Edge.5 \Edge.6		Tangent	Closing F	Point	
Guides Spine Coupling Relimitatic N* Guide Tangent								
		Replac		Re	move	Add	ancel	

2. Select the horizontal edges on the pads as sections for the loft.

Make sure arrows point the same way.



3. Click OK to create the surface.

The specification tree is updated to show the created surfaces.









Joining Surfaces

This task shows how to join the lofted and swept surfaces.

H

1. Click the Join icon

The Join Definition dialog box appears.

Join Definition			? ×		
Elements To J	oin ———				
Loft.1 Sweep.1					
Sweep.2 Loft.2					
Add M	ode	Remove Mode	•		
Parameters	Federation	Sub-Elements To Remove			
Check connexity					
Simplify the result					
Ignore erroneous elements					
Merging distance	e	0.001mm			
	ince	5deg	E		
	🧿 ОК	🔄 🎱 Apply	Cancel		

- 2. Select the two lofted surfaces and the two swept surfaces.
- 3. Click OK to create the joined surface

The specification tree is updated to include the joined surface.





Closing the Surfaces



For this you must call up the Part Design workbench.



The Part Design workbench is displayed.

2. Click the Close Surface icon 分

This icon is available from the Split sub-toolbar:

Note that the Join element should be active in tree.

The CloseSurface Definition dialog box appears.

3. Click OK to create the closed surface feature.

The specification tree is updated.













