



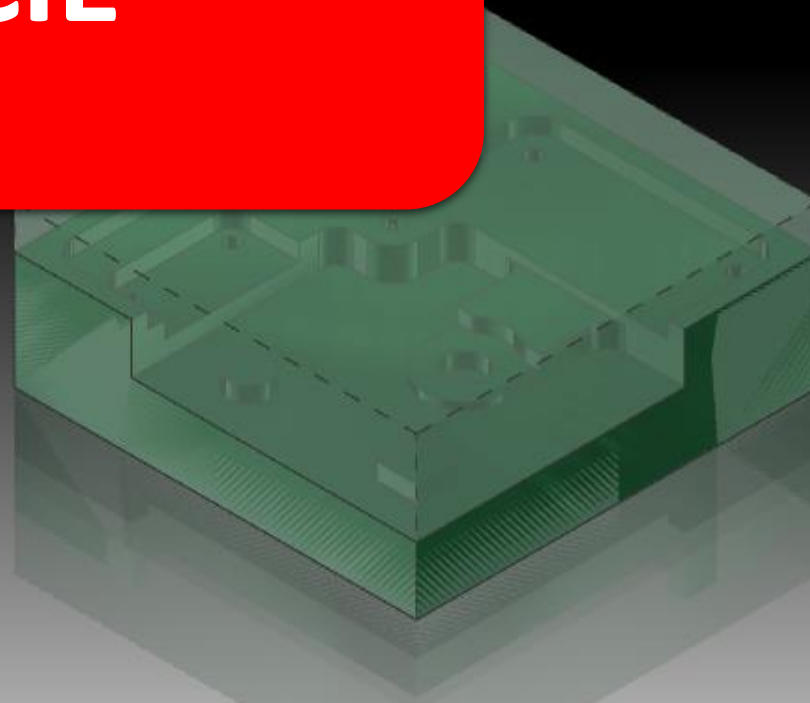
PLM Software

SIEMENS

NX

SUPERFÍCIE

Edgard Gonçalves Cardoso
www.professoredgard.com



Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Speed Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu

Operation Name

Name
GEOMETRY
Unused
MCS_M
WC

Specify Part

Specify Blank

Specify Check

Offsets

Part Offset: 0.0000

Description

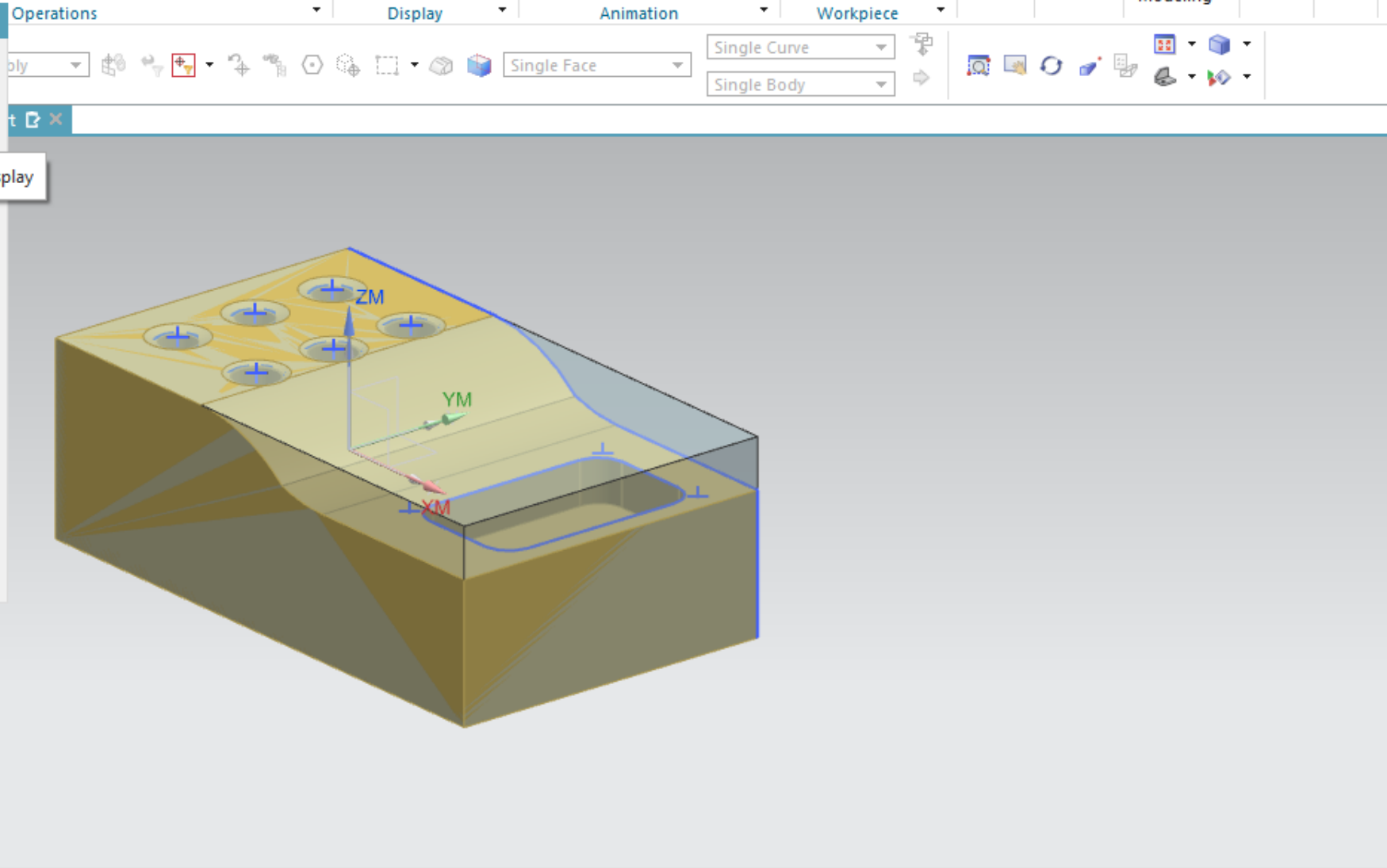
Material: CARBON STEEL

Layout and Layer

OK Cancel

Dependencies

Details



Current: WORKPIECE

Create Tool Create Geometry Create Operation

Insert

Menu

Operation Navigator - Program Ord

Name

NC_PROGRAM

- Unused Items
- PROGRAM

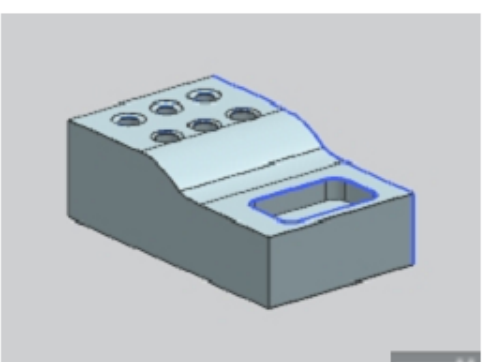
Dependencies

Details

Open

Examinar: edgard_treinamento

parchoque.prt



suprficie.prt

Nome: []

Tipo: Part Files (*.prt)

Preview

Load Structure Only

Option: Partially Load

Options...

OK Cancelar

Synchronous Modeling

Feature

Tools

File Home Assemblies Curve Surface Analysis View Render Tools Application

Find a Command

Sketch Direct Sketch

Datum Plane Extrude Hole

Feature Unite Shell Pattern Feature Edge Blend Chamfer Trim Body Draft

Synchronous Modeling Move Face Offset Region Replace Face Delete Face

Surface Through Curve Mesh Through Curves Swept Fill Surface

Assemblies Work on Assembly Add Assembly Constraints Move Component Pattern Component

Menu No Selection Filter Entire Assembly

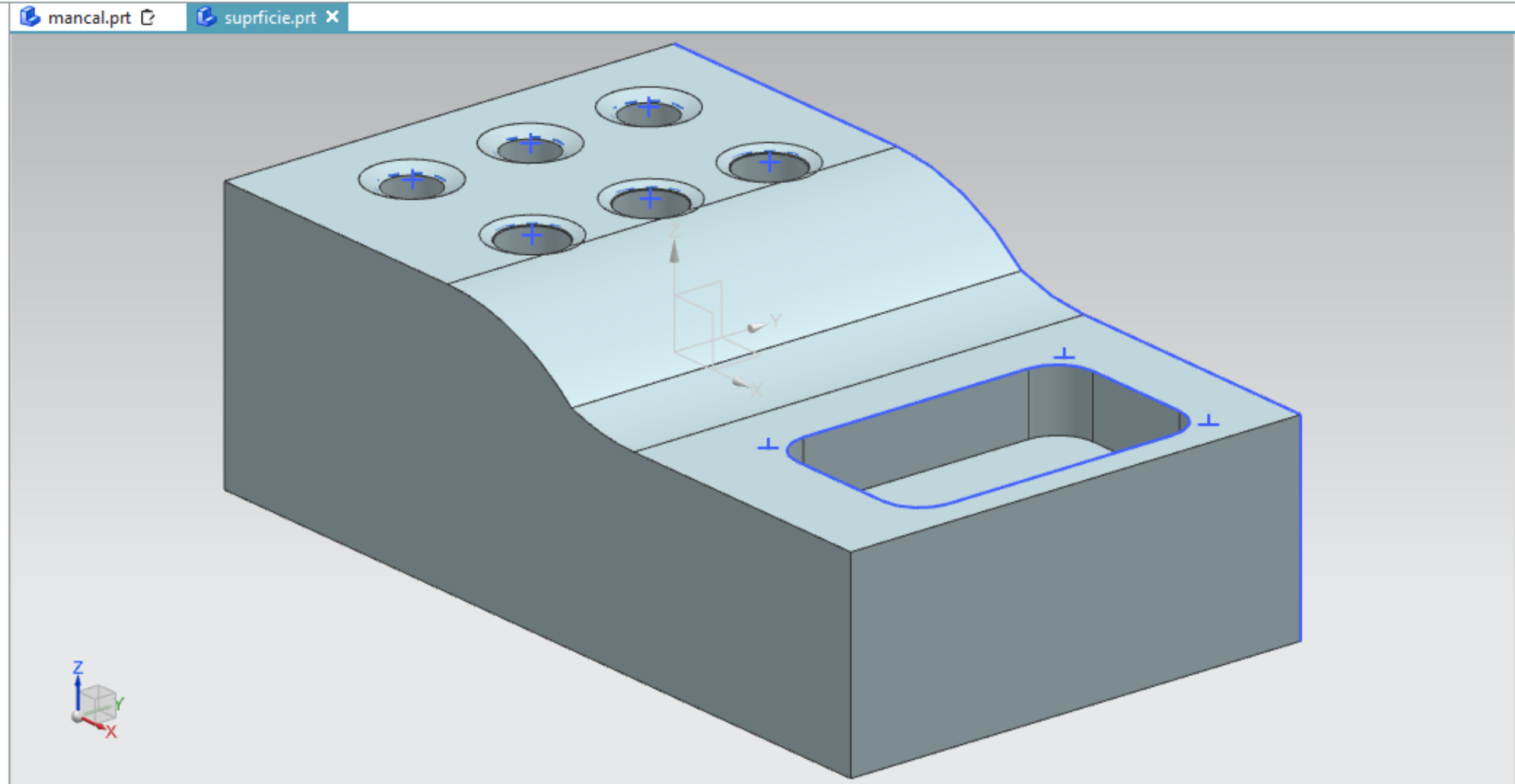
Part Navigator

Name	Up to Date
Model Views	
Cameras	
User Expressions	
Model History	
Datum Coordinate Sy...	✓
Sketch (1) "SKETCH_0"	✓
Extrude (2)	✓
Sketch (3) "SKETCH_0"	✓
Extrude (4)	✓
Sketch (5) "SKETCH_0"	✓
Threaded Hole (6)	✓
Threaded Hole (7)	✓
Chamfer (8)	✓
Chamfer (9)	✓

Dependencies

Details

Preview



File Home Assemblies Curve Surface Analysis View Render Tools Application

Find a Command

Sketch: Sketch, Direct Sketch

Feature: Datum Plane, Extrude, Hole, Unite, Shell, Edge Blend, Trim Body, Draft

Synchronous Modeling: Move Face, Offset Region, Replace Face, Delete Face

Surface: Through Curves, Through Curve Mesh, Swept, Fill Surface

Assemblies: Work on Assembly, Add, Assembly Constraints, Move Component, Pattern Component

Menu: No Selection Filter, Entire Assembly

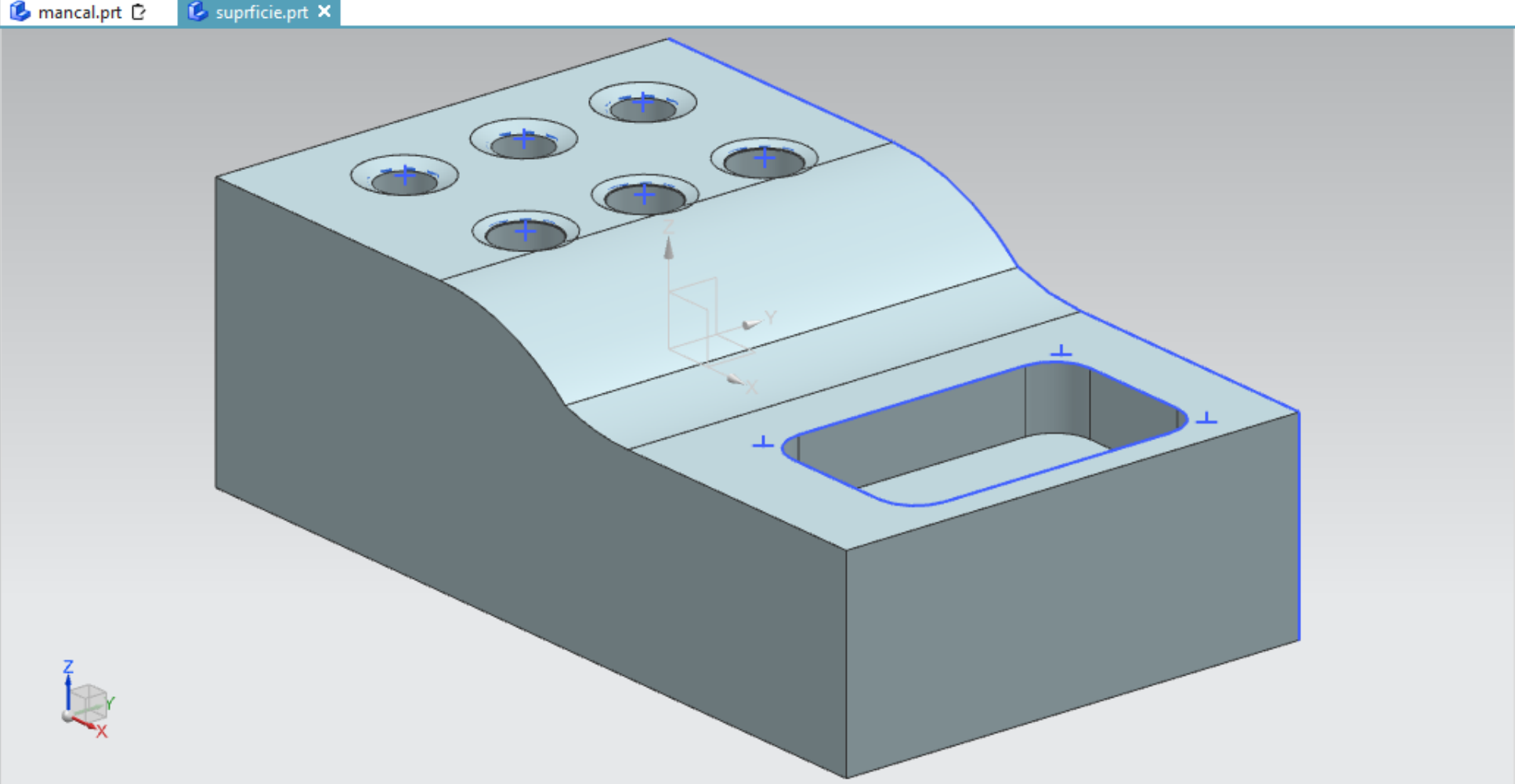
Part Navigator

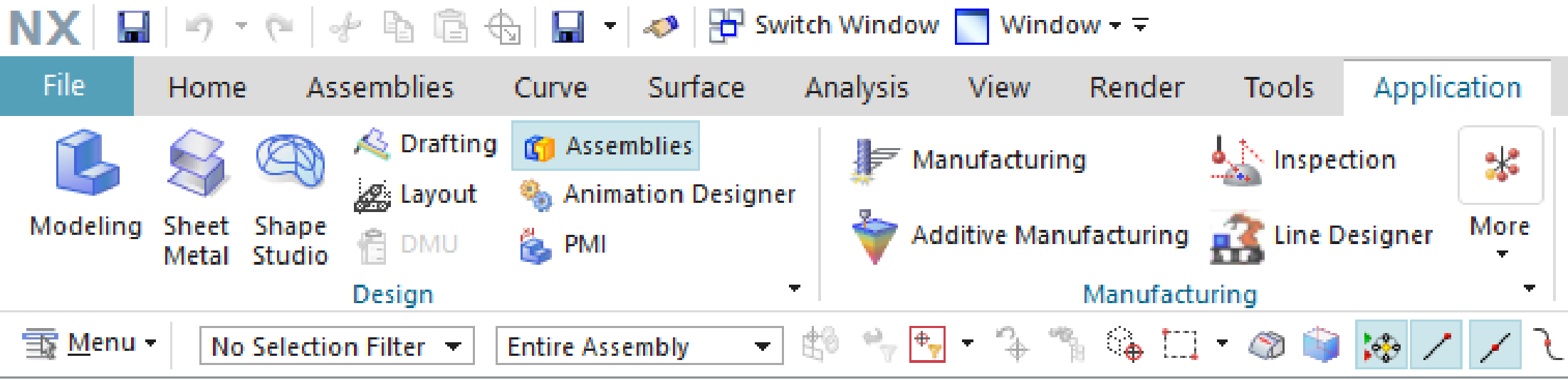
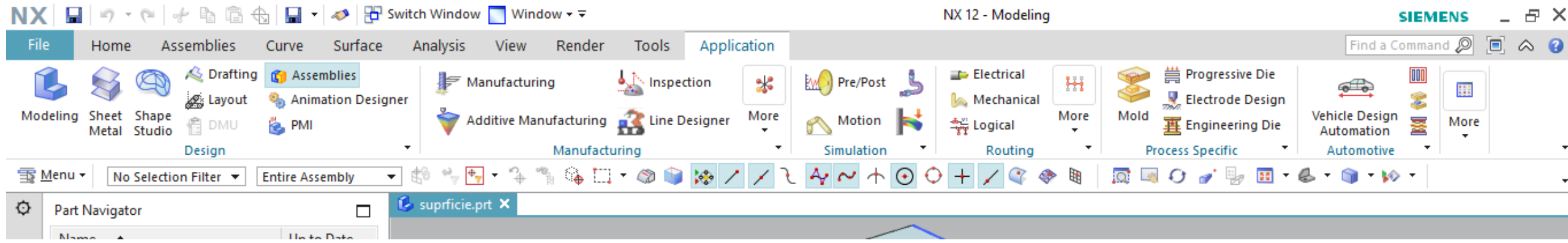
Name	Up to Date
Model Views	
Cameras	
User Expressions	
Model History	

Dependencies

Details

Preview




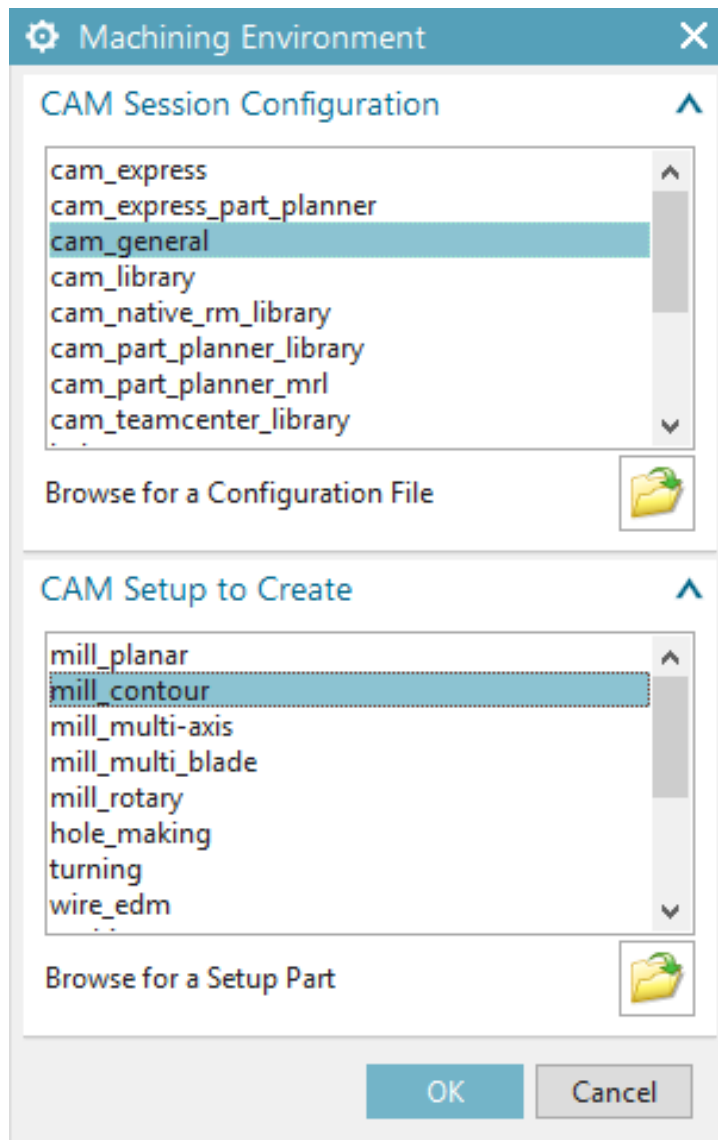


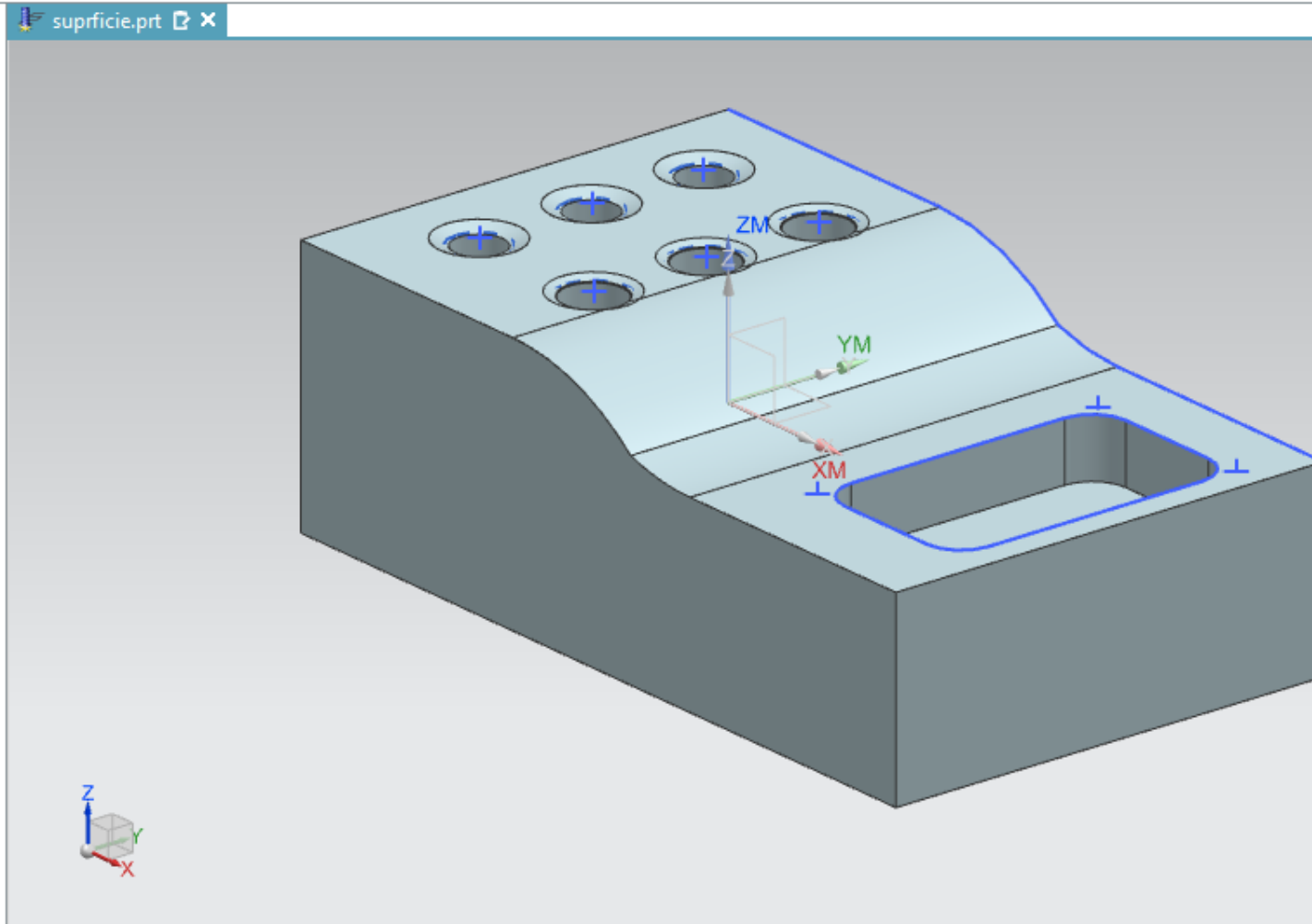
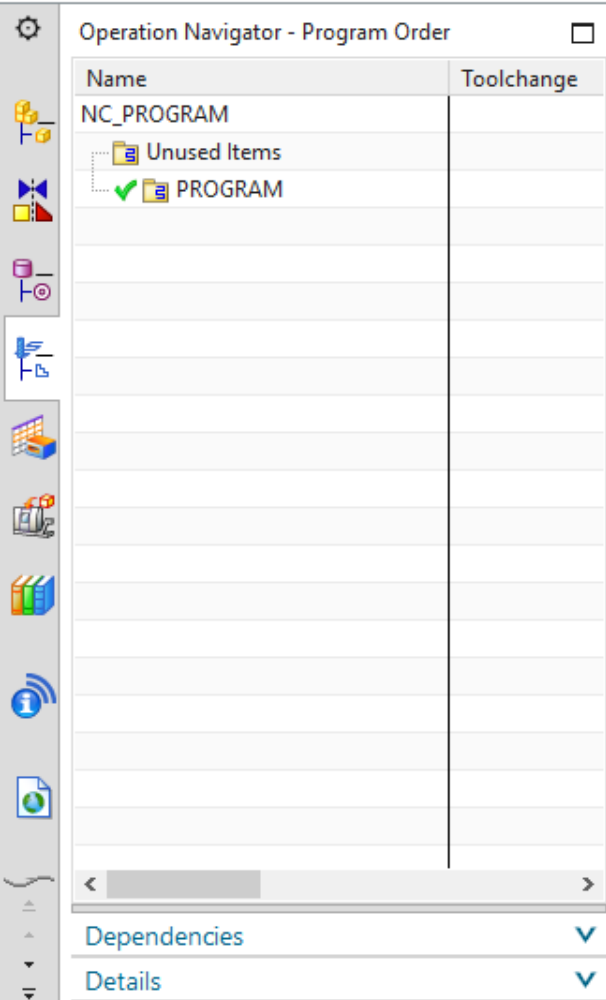
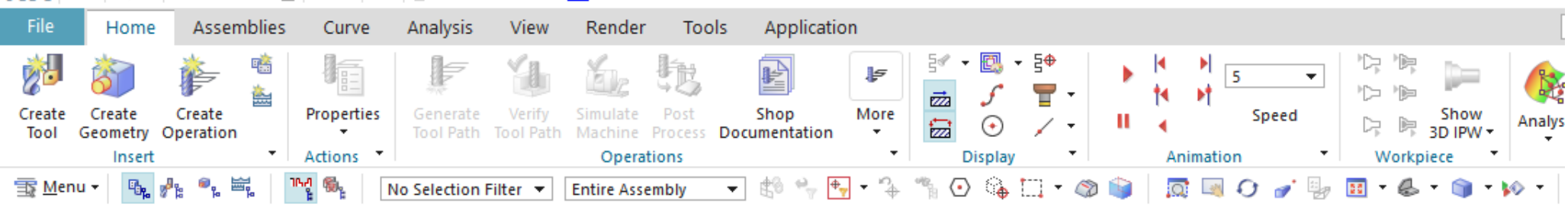
ch Window  Window ▾

Analysis View Render Tools **Application**

 Manufacturing  Inspection   P

 Ac **Manufacturing (Ctrl+Alt+M)**
Starts the Manufacturing application, which provides tools to interactively program and postprocess milling, drilling, turning, and wire EDM tool paths.






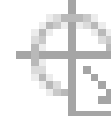
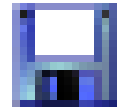
File | Home | **Assemblies** | Curve | Analysis

					
Create Tool	Create Geometry	Create Operation	Insert	Properties	Generate Tool Path
				Actions	

 Menu |  |  |  |  |  |  | No Selection

 Operation Navigator - Program Order

NX



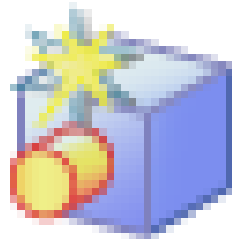
File

Home

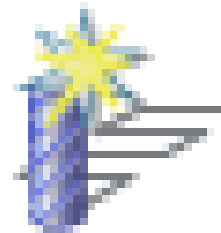
Assemblies



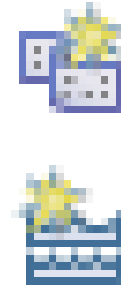
Create
Tool



Create
Geometry



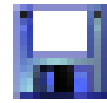
Create
Operation



Insert



NX



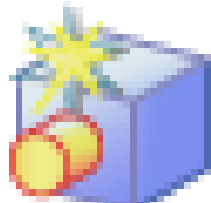
File

Home

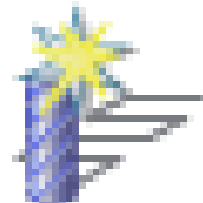
Assemblies



Create
Tool



Create
Geometry



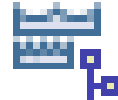
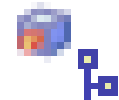
Create
Operation



Insert



Menu





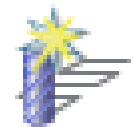
File Home Assemblies Curve Analysis View



Create Tool



Create Geometry



Create Operation

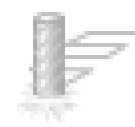


Insert



Properties

Actions



Generate Tool Path



Verify Tool Path

Menu



No Selection Filter



Operation Navigator



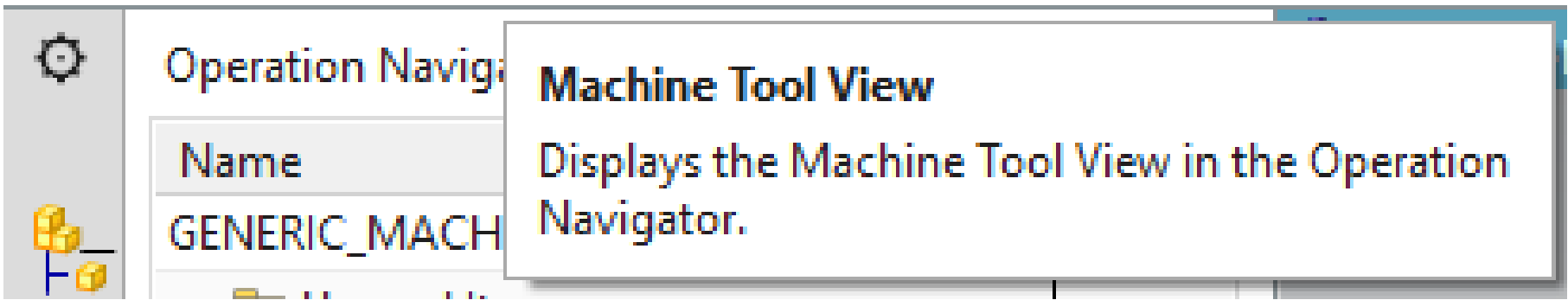
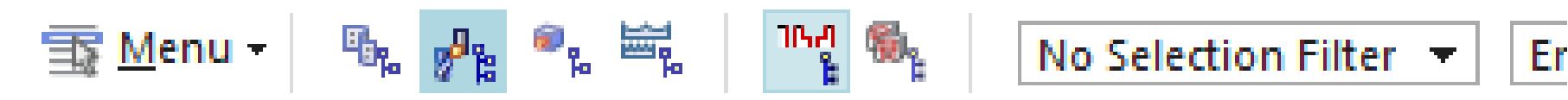
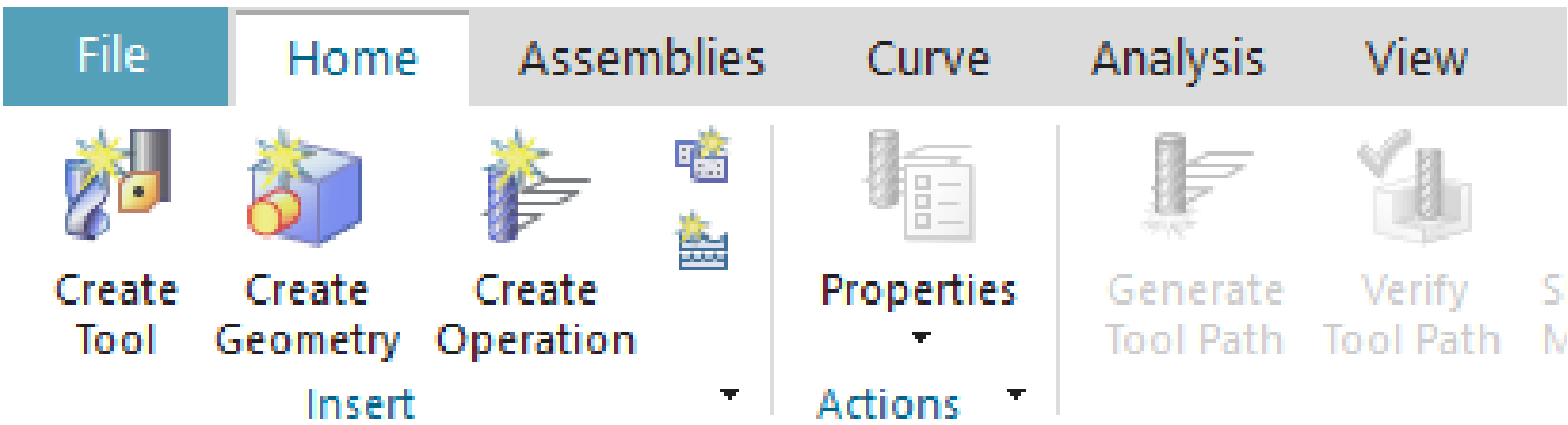
Name

NC_PROGR

Unusable

Program Order View

Displays the Program Order View in the Operation Navigator.



NX | | | | | | | | | Switch Window Window

File | Home | Assemblies | Curve | Analysis | View | Render

Create Tool	Create Geometry	Create Operation	Insert	Properties	Generate Tool Path	Verify Tool Path	Simulate Machine
				Actions			Operation

Menu | | | | | | No Selection Filter | Entire Assem

	Operation Navigator	Geometry View
	Name	Displays the Geometry View in the Operation Navigator.
	GEOMETRY	



File Home Assemblies Curve Analysis View Render To

Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process

Insert Actions Operations

Menu No Selection Filter Entire Assembly

Operation Navigator - Ma

Name		
METHOD		
Unused Items		
MILL_ROUGH		
MILL_SEMI_FINISH		
MILL_FINISH		
DRILL_METHOD		

Machining Method View
Displays the Machining Method View in the Operation Navigator.

File | Home | Assemblies | Curve | Analysis

Create Tool |
 Create Geometry |
 Create Operation |
 Properties |
 Generate Tool Path

Create Tool
 Creates a new tool object, which is displayed in the Machine Tool View of the Operation Navigator.

M

Name	Path	Tool
METHOD		
<ul style="list-style-type: none"> Unused Items MILL_ROUGH MILL_SEMI_FINISH MILL_FINISH DRILL_METHOD 		

Create Tool

Type
mill_contour

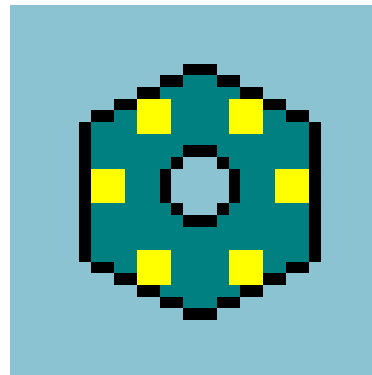
Library
Retrieve Tools from Library
Retrieve Devices from Library

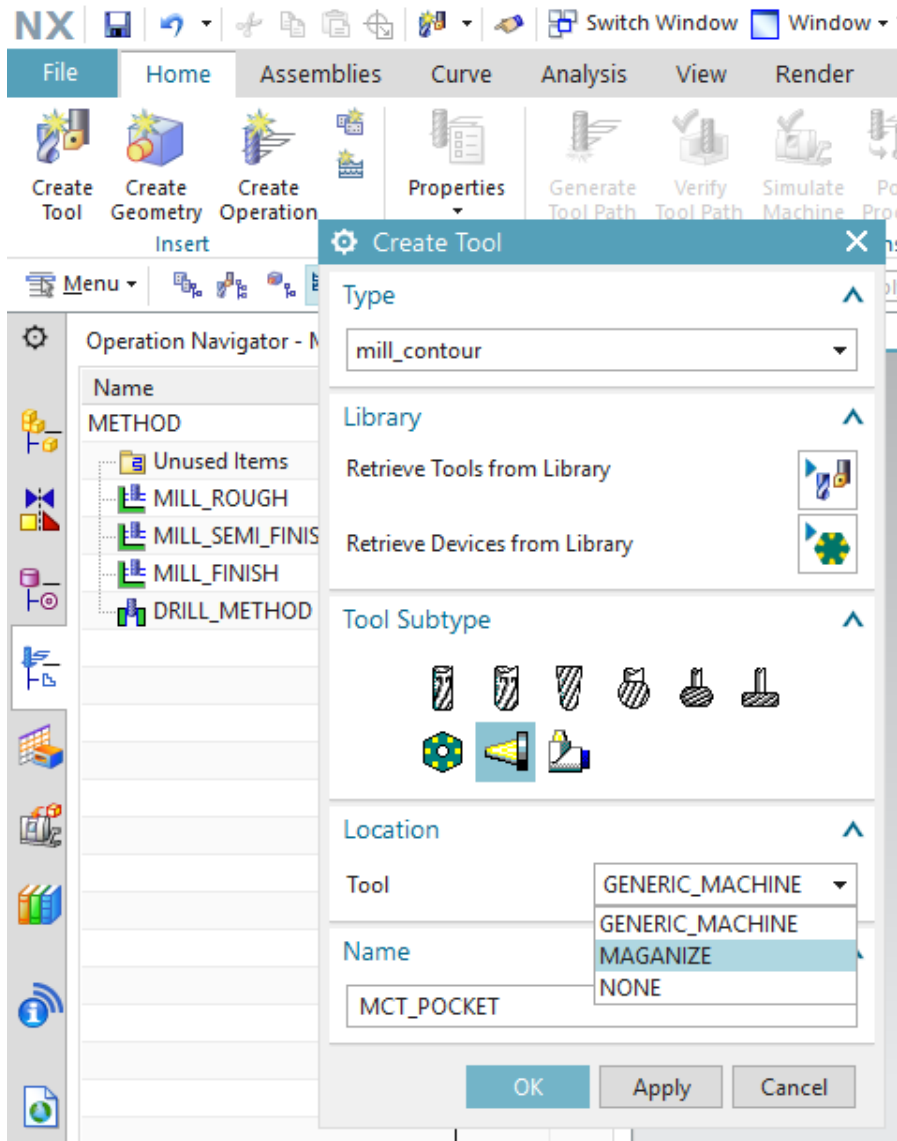
Tool Subtype



Location
Tool: GENERIC_MACHINE


Name
maganize




OK Apply Cancel









 Create Tool 

Type 

Library 
Retrieve Tools from Library 
Retrieve Devices from Library 

Tool Subtype 


Location 
Tool

Name 

File Home Assemblies Curve Analysis View Render Tools Application
Find a Command

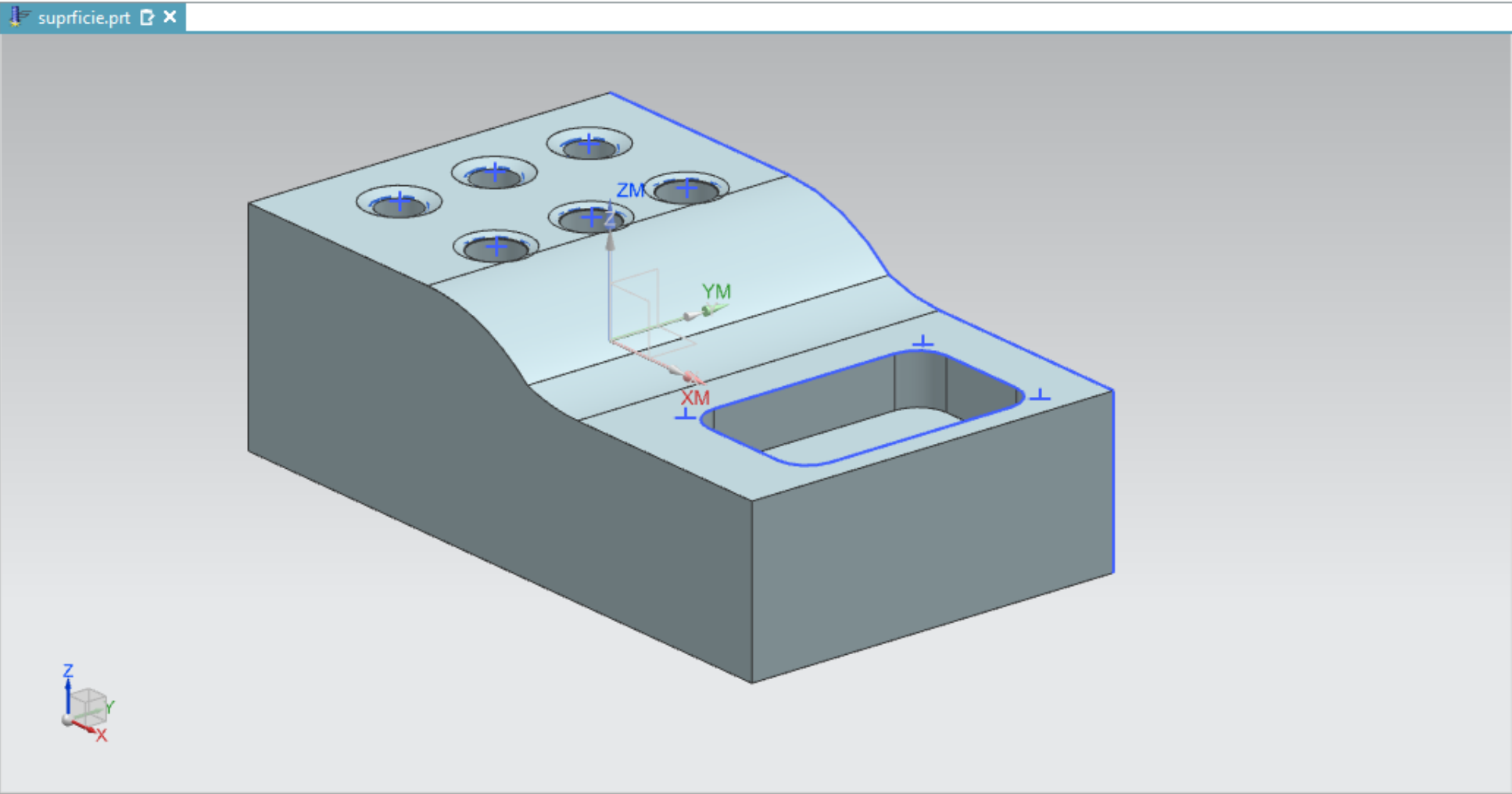
Create Tool Create Geometry Create Operation
Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More
Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu No Selection Filter Entire Assembly

Operation Navigator - Machine Tool

Name	Path
GENERIC_MACHINE	
Unused Items	
MAGANIZE	
POCKET_01	
POCKET_02	
POCKET_03	
POCKET_04	
POCKET_05	
POCKET_06	

Dependencies Details



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool dialog box

Type: mill_contour

Library: Retrieve Tools from Library, Retrieve Devices from Library

Tool Subtype: [Icons]

Location: Tool (POCKET_01), Name (fresa_50)

OK

Operation Navigator - Machine Tool

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - POCKET_02
 - POCKET_03
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies Details

Application toolbar

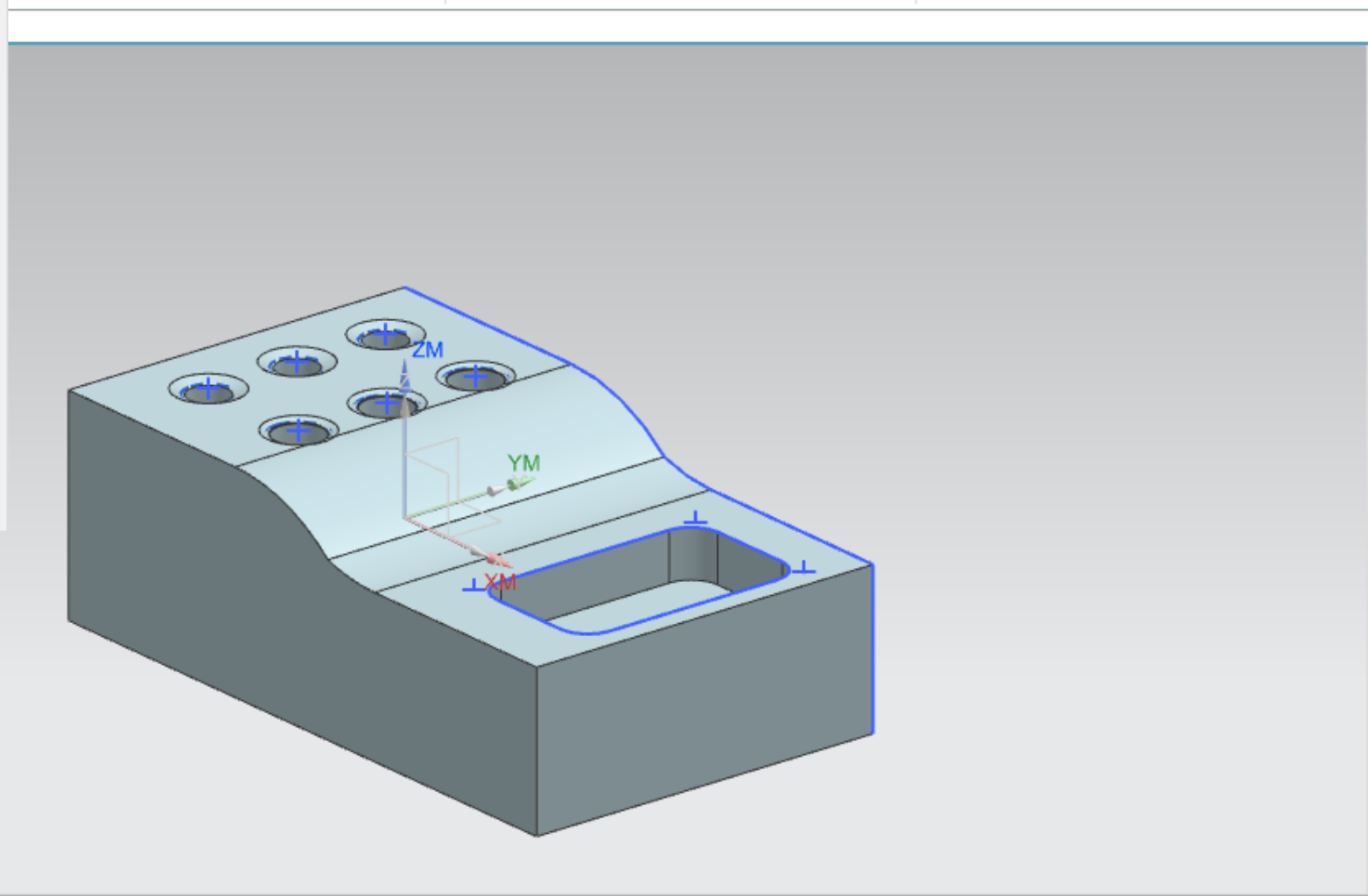
Find a Command

Speed: 5

Animation: [Icons]

Workpiece: [Icons]

Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool

Type: mill_contour

Library

Retrieve Tools from Library

Retrieve Devices from Library

Tool Subtype

Location

Tool: POCKET_01

Name: fresa_50

OK Apply Cancel

Operation Navigator - Machine Tool

NAME

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - POCKET_02
 - POCKET_03
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies

Details

Application

Find a Command

Speed: 5

Animation

Workpiece

Show 3D IPW

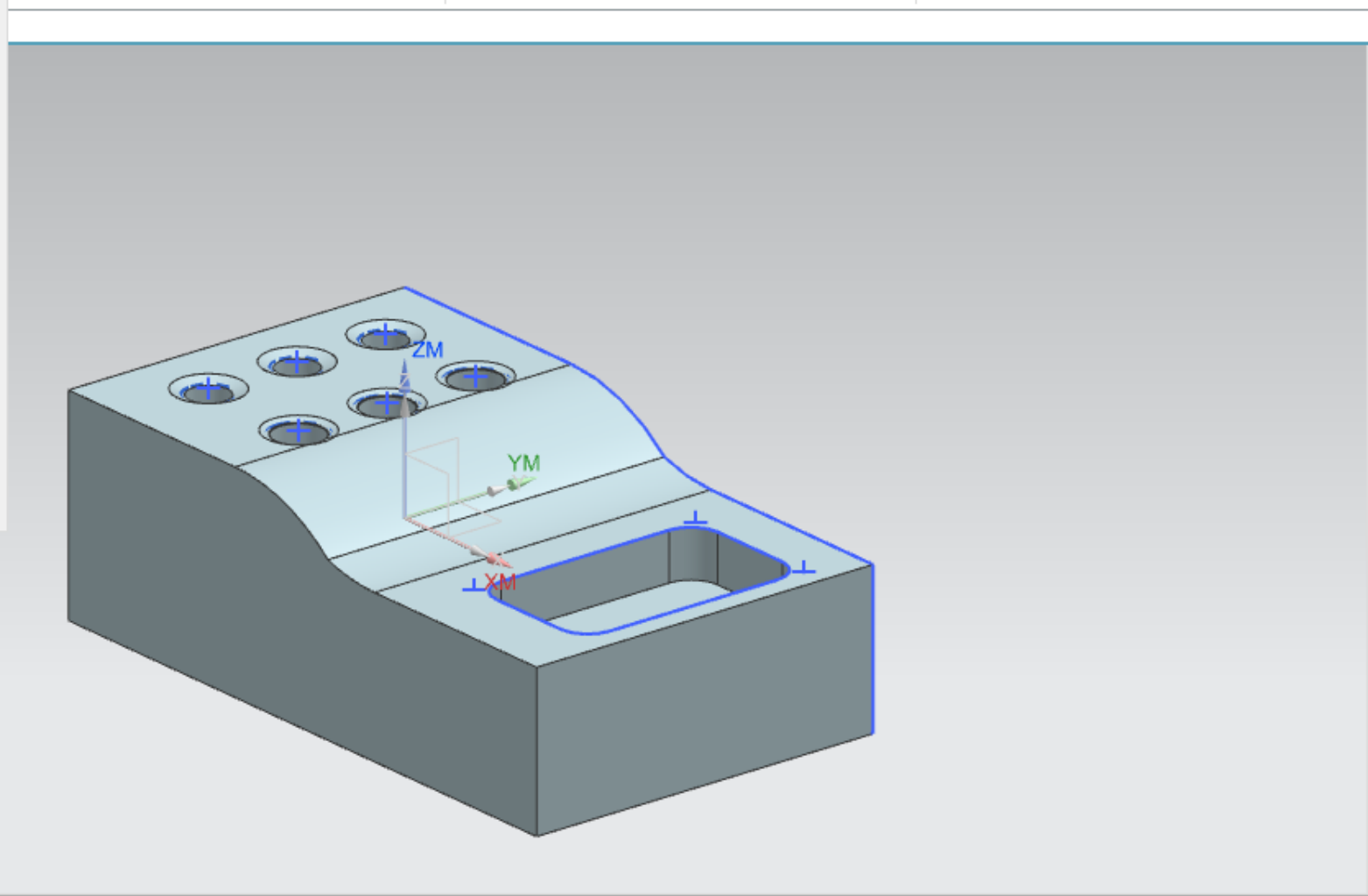
Analysis

Geometry

Synchronous Modeling

Feature

Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

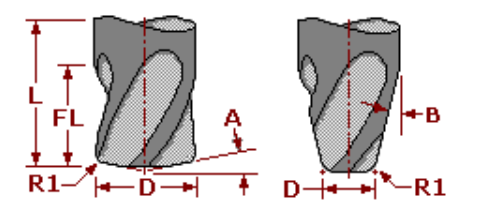
Create Tool Create Geometry Create Operation

Insert

Milling Tool-5 Parameters

Tool Shank Holder More

Legend



Dimensions

(D) Diameter	30.0000
(R1) Lower Radius	0.0000
(B) Taper Angle	0.0000
(A) Tip Angle	0.0000
(L) Length	75.0000
(FL) Flute Length	50.0000
Flutes	2

Description

Material: HSS

Numbers

Tool Number	0
Adjust Register	0
Cutcom Register	0

Offsets

Information

OK Cancel

Application

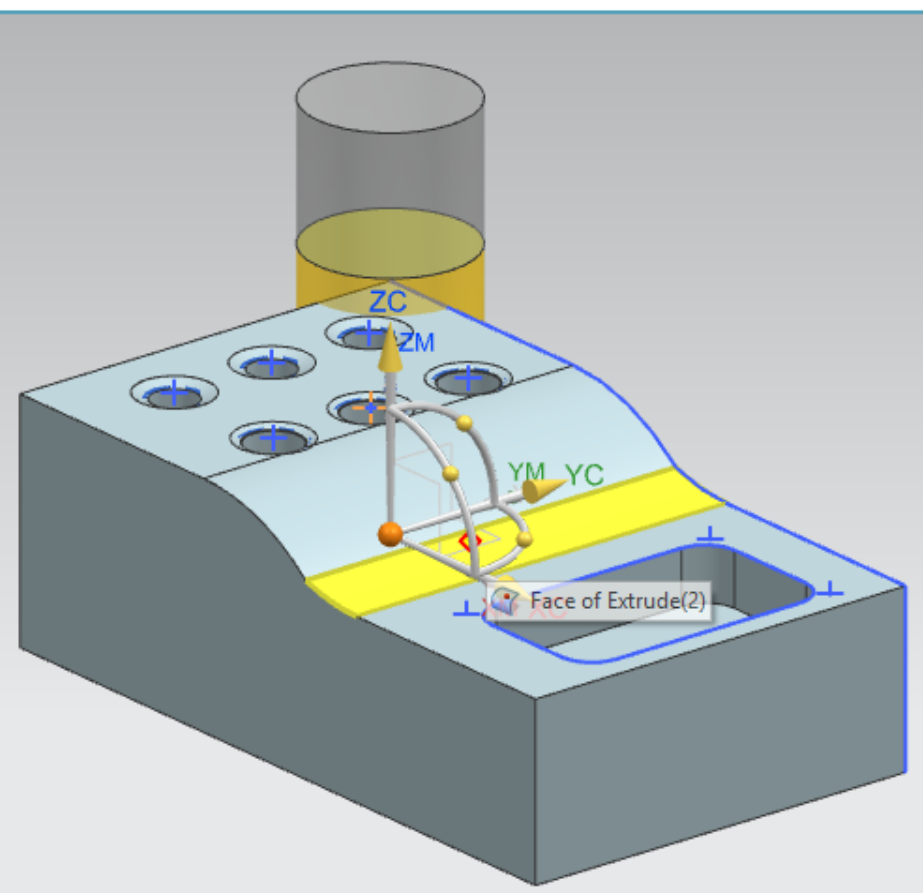
Find a Command

More Display Animation Workpiece

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



Point On Surface - Face of Extrude(2)

File Home Assemblies C

Create Tool Create Geometry Create Operation

Menu

Operation Navigator - Machine Tool

- NAME
- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - POCKET_02
 - POCKET_03
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies

Details

Milling Tool-5 Parameters

Dimensions

(D) Diameter	50.0000
(R1) Lower Radius	0.0000
(B) Taper Angle	0.0000
(A) Tip Angle	0.0000
(L) Length	75.0000
(FL) Flute Length	50.0000
Flutes	4

Description

Cabecote fresador - limpar faces

Material : HSS

Numbers

Tool Number	1
Adjust Register	0
Cutcom Register	0

Offsets

Information

Library

Preview

Preview Display

OK Cancel

Application

Find a Command

More Display Animation Workpiece

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Translate origin

Create Tool

Type
mill_contour

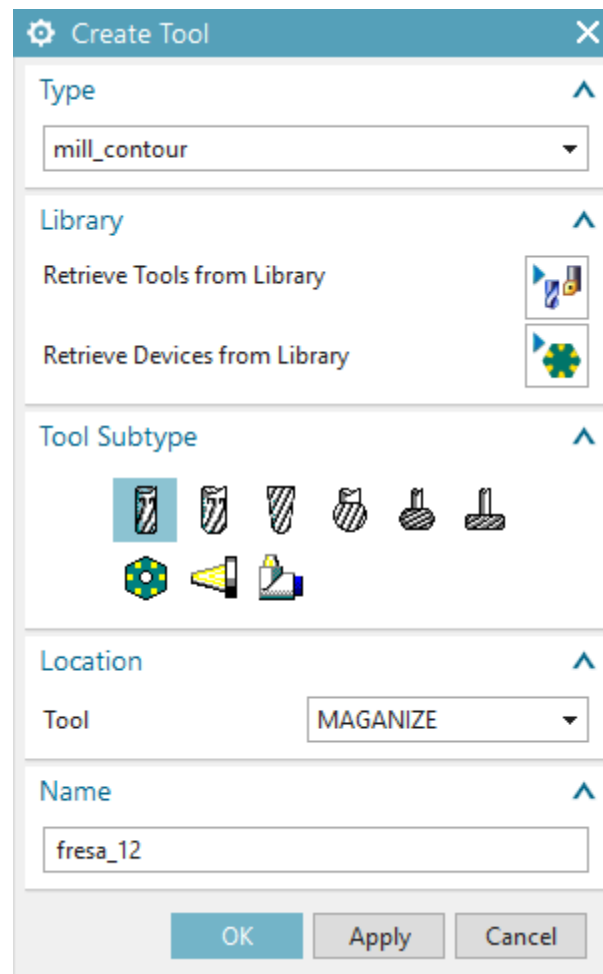
Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype

Location
Tool: MAGANIZE

Name
fresa_12

OK Apply Cancel



Create Tool

Type
mill_contour

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype

Location
Tool POCKET_02

Name
fresa_12

OK Apply Cancel

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

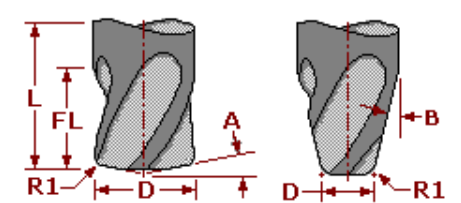
Operation Navigator - Machine Tool

Name

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - POCKET_03
 - POCKET_04
 - POCKET_05
 - POCKET_06

Tool Shank Holder More

Legend



Dimensions

(D) Diameter	12.0000
(R1) Lower Radius	0.0000
(B) Taper Angle	0.0000
(A) Tip Angle	0.0000
(L) Length	75.0000
(FL) Flute Length	50.0000
Flutes	4

Description

Fresa_topo

Material : HSS

Numbers

Tool Number	2	Lock
Adjust Register	1	Lock
Cutcom Register	1	Lock

Offsets

Information

OK Cancel

Application

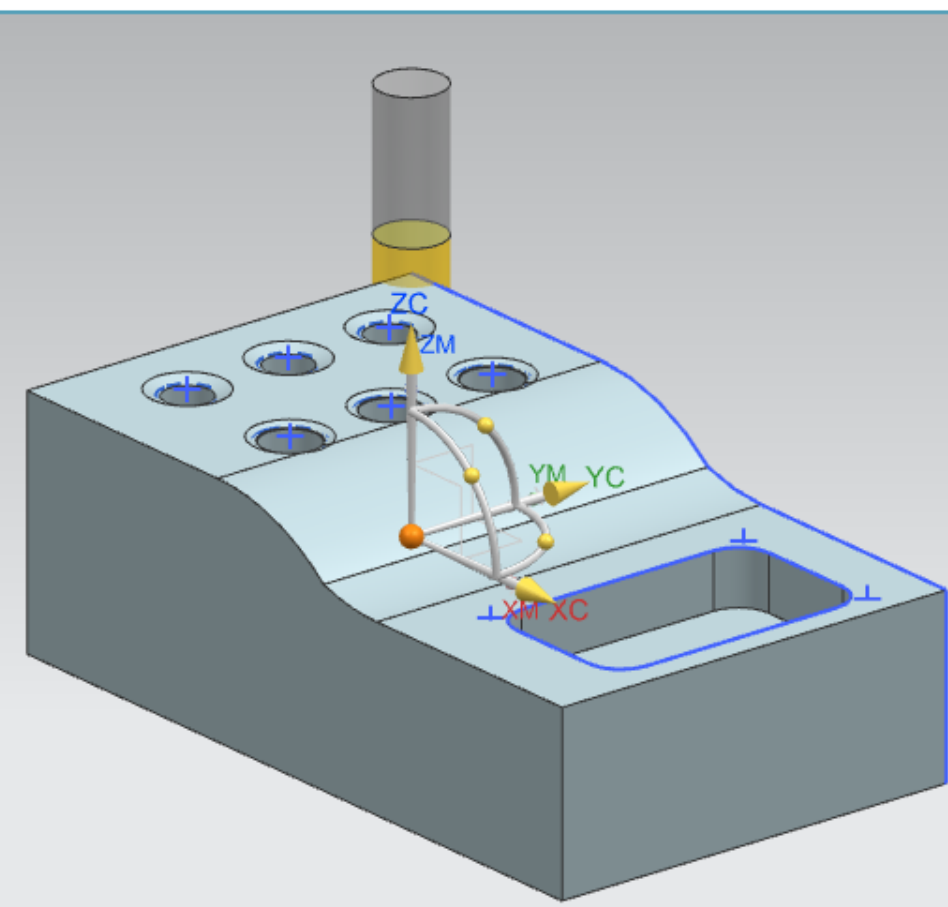
Find a Command

More Display Animation Workpiece

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



superficie_tutorial.pptx - PowerPoint

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool

Type
mill_contour

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype
BALL_MILL

Location
Tool: POCKET_03

Name
BALL_MILL

OK Apply Cancel

Operation Navigator - Machine Tool

NAME

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies

Details

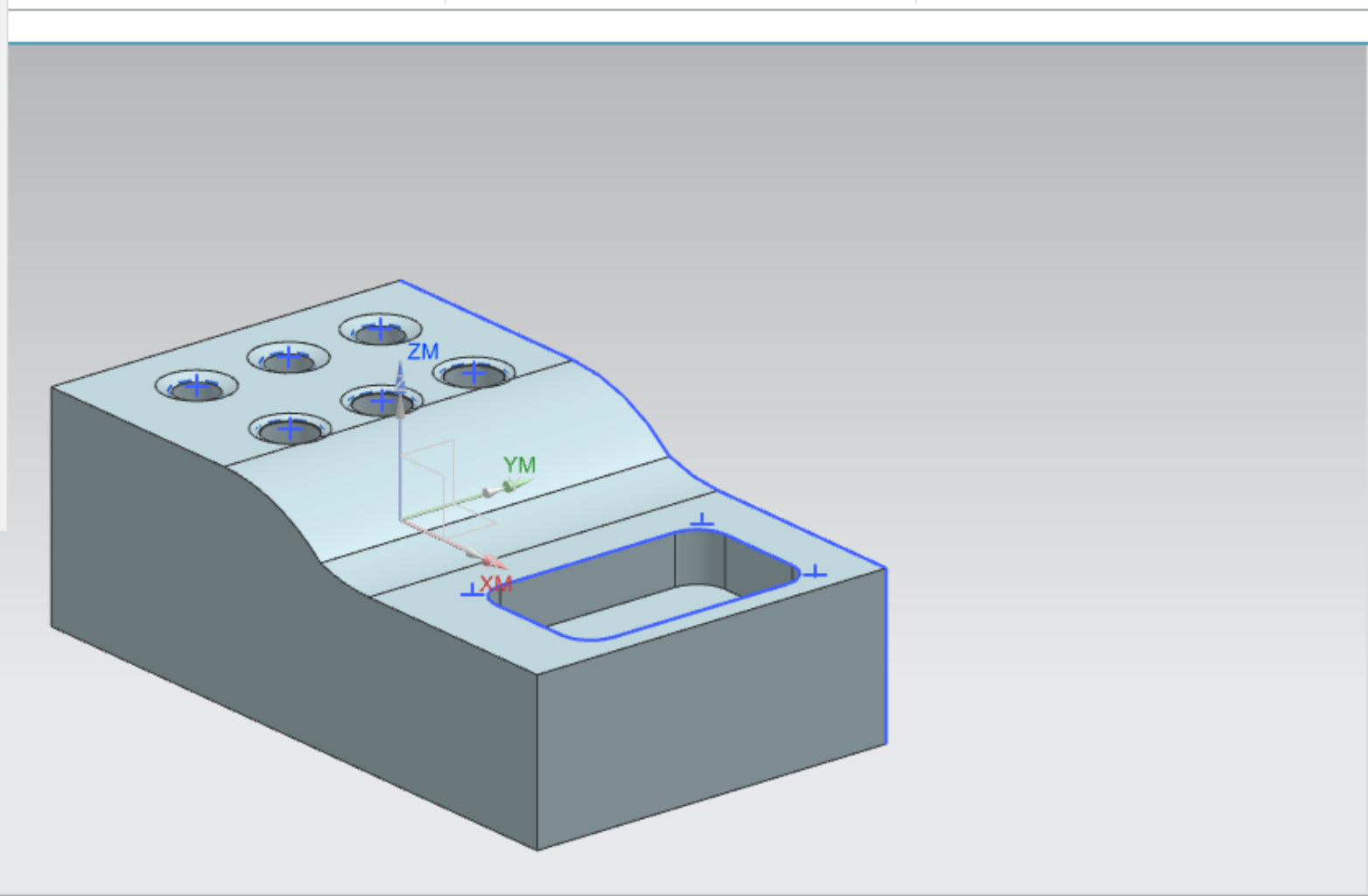
Application

Find a Command

Shop Presentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed: 5

Show 3D IPW



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool

Type

- hole_making
- mill_planar
- mill_contour
- mill_multi-axis
- mill_multi_blade
- mill_rotary
- hole_making
- turning
- wire_edm
- probing
- solid_tool
- work_instruction
- robot
- multi_axis_deposition
- cam_test_new
- Browse ...

Location

Tool: GENERIC_MACHINE

Name

STD_DRILL

OK Apply Cancel

Operation Navigator - Machine Tool

Name

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies

Details

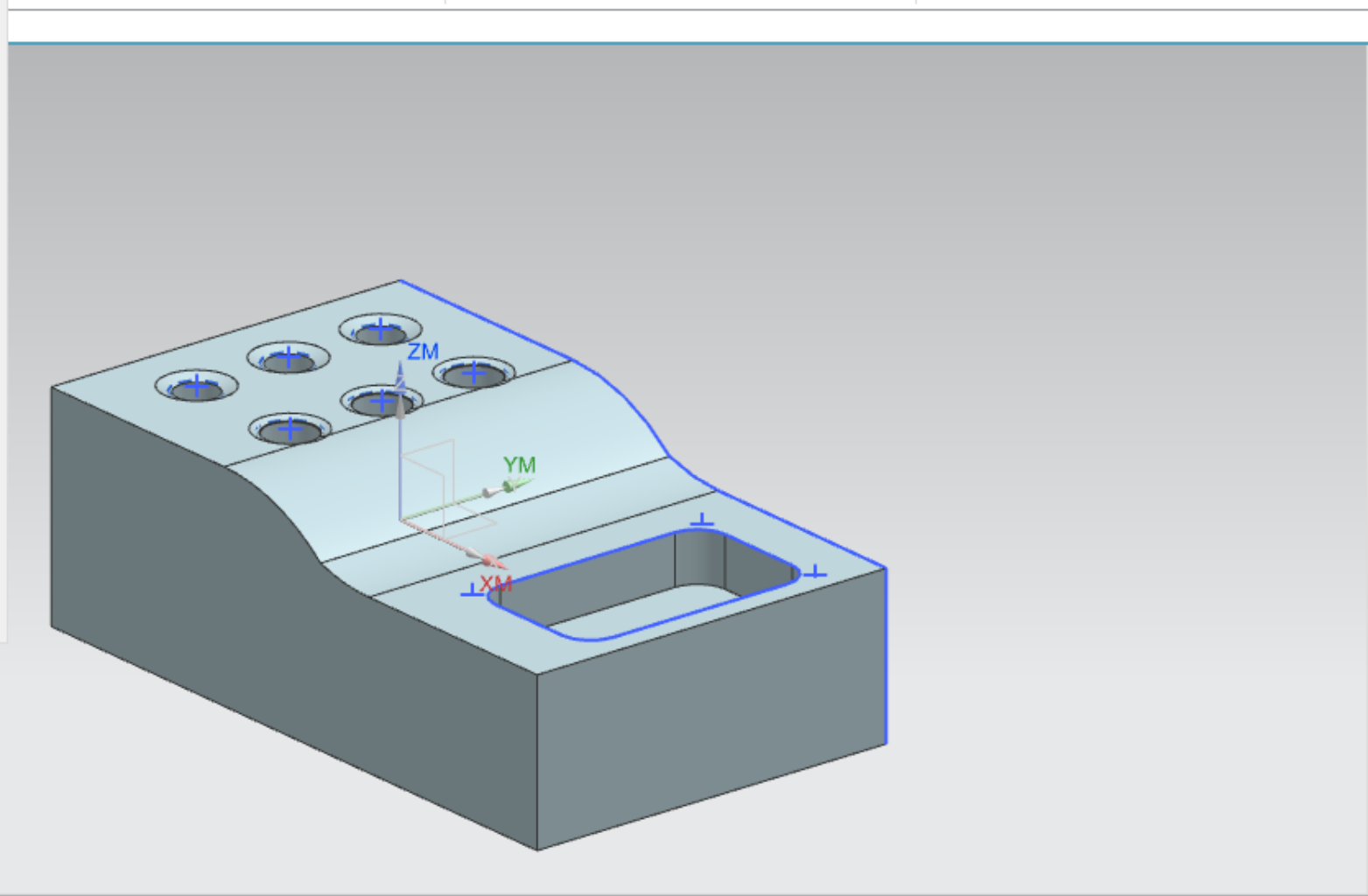
Application

Find a Command

Speed: 5

Workpiece

Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool


Type:

Library

Retrieve Tools from Library

Retrieve Devices from Library

Tool Subtype



Location

Tool:

Name

OK Apply Cancel

Operation Navigator - Machine Tool

Name

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies

Details

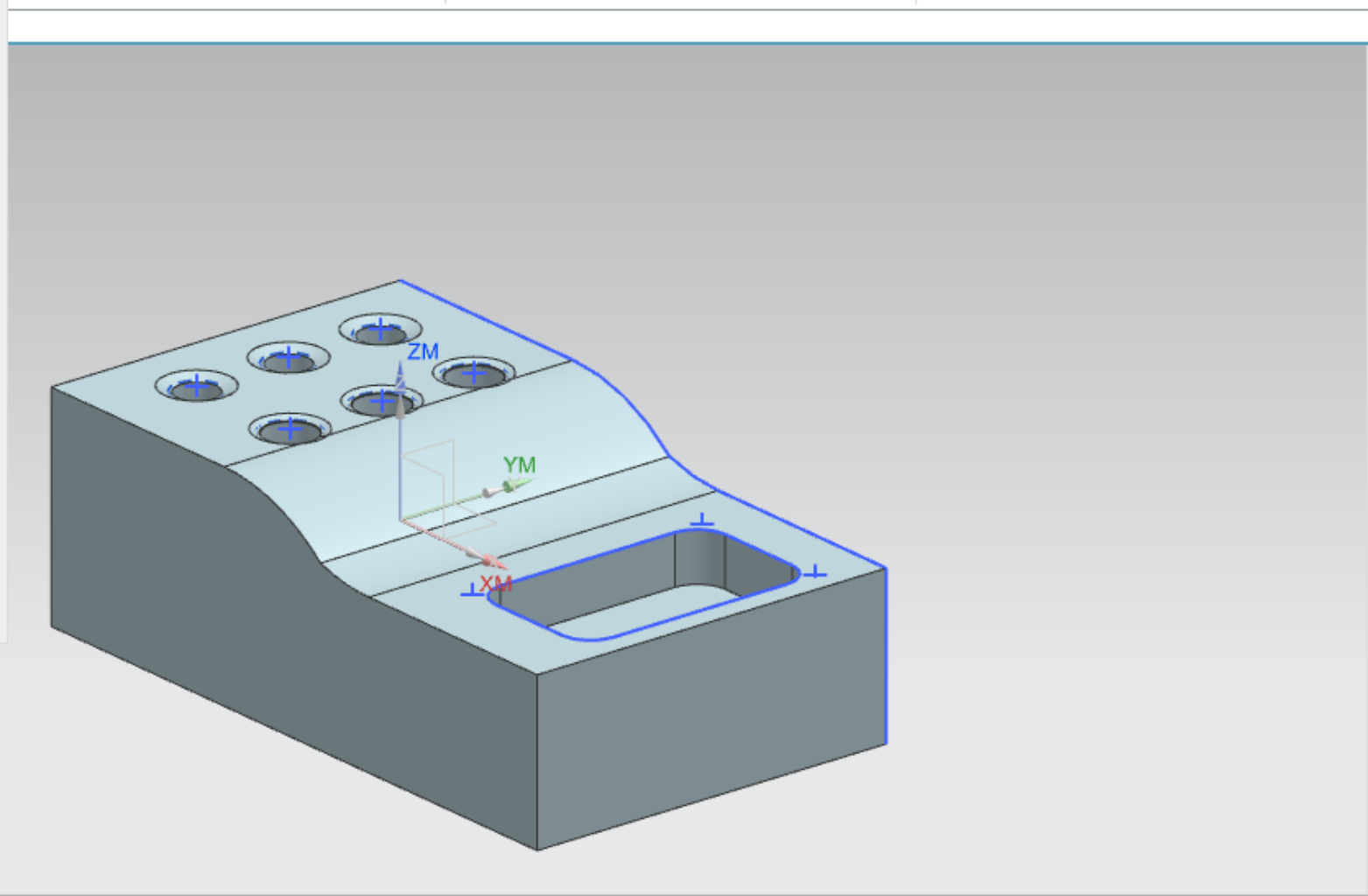
Application

Find a Command

Speed: 5

Workpiece: Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

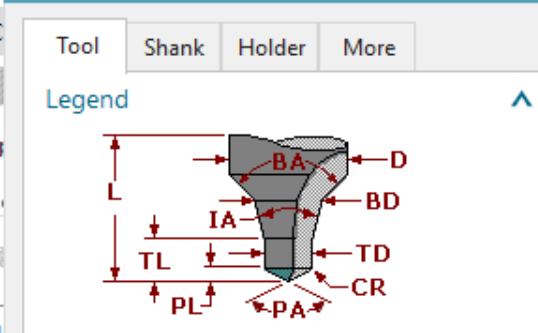
Operation Navigator - Machine Tool

Name

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - POCKET_05
 - POCKET_06

Dependencies

Details



Dimensions

(D) Diameter	8.0000
(IA) Included Angle	60.0000
(BA) Bell Angle	0.0000
(BD) Bell Diameter	0.0000
(TD) Tip Diameter	3.1500
(TL) Tip Length	4.0000
(PA) Point Angle	118.0000
(PL) Point Length	0.9463
(L) Length	50.0000
Flutes	2
Designation	

Description

Material: HSS

Numbers

Tool Number: 4

OK Cancel

Application

Find a Command

More Display Animation Workpiece

Speed: 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Translate origin

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert


Menu

Create Tool

Type
hole_making

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype



Location
Tool
POCKET_05

Name
broca_05

OK Apply Cancel

Operation Navigator - Machine Tool

Name

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - POCKET_06

Dependencies

Details

Application

Find a Command

More

Display

Animation

Speed 5

Workpiece

Show 3D IPW

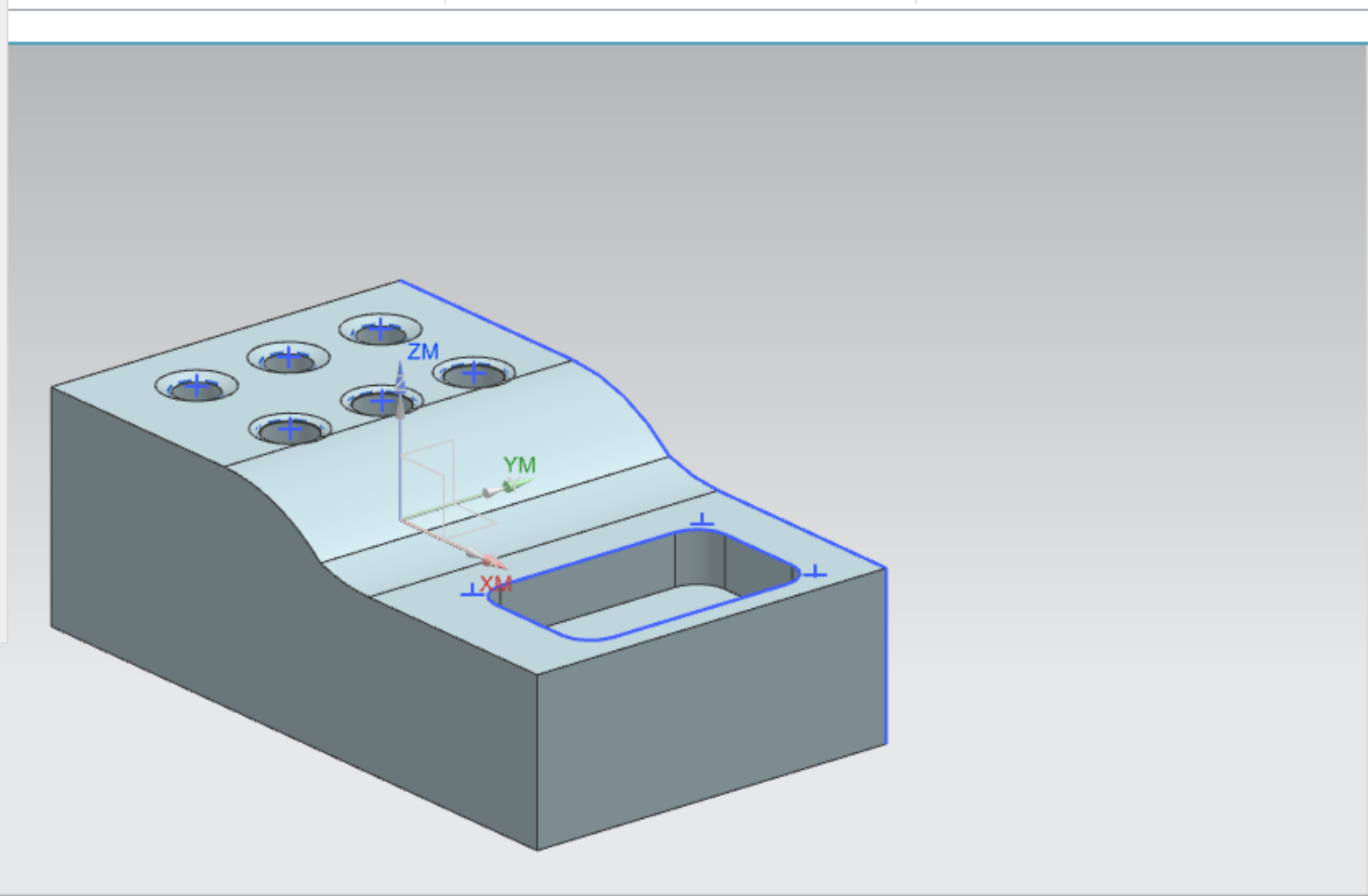
Analysis

Geometry

Synchronous Modeling

Feature

Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies C

Create Tool Create Geometry Create Operation

Insert

Menu

Operation Navigator - Machine Tool

Name

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - POCKET_06

Dependencies

Details

Tool Shank Holder More

Legend

Dimensions

(D) Diameter: 5.0000

(PA) Point Angle: 118.0000

(PL) Point Length: 1.5021

(CR) Corner Radius: 0.0000

(L) Length: 80.0000

(FL) Flute Length: 35.0000

Flutes: 2

Description

Material: HSS

Numbers

Tool Number: 5

Adjust Register: 1

Offsets

Information

Library

OK Cancel

Application

Find a Command

More

Display

Animation

Speed: 5

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

Feature

Tools

3D Model of Part and Tool

Coordinate Systems: SYS_CL_TIP, SYS_CL_SHOULDER

Part Features: ZC, ZM, YM, YC, XM, XC

File Home Assemblies C

Create Tool Create Geometry Create Operation

Insert


Menu

Create Tool

Type
hole_making

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype



Location
Tool: POCKET_06

Name
broca_8.5

OK Apply Cancel

Operation Navigator - Machine Tool

NAME

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06

Dependencies

Details

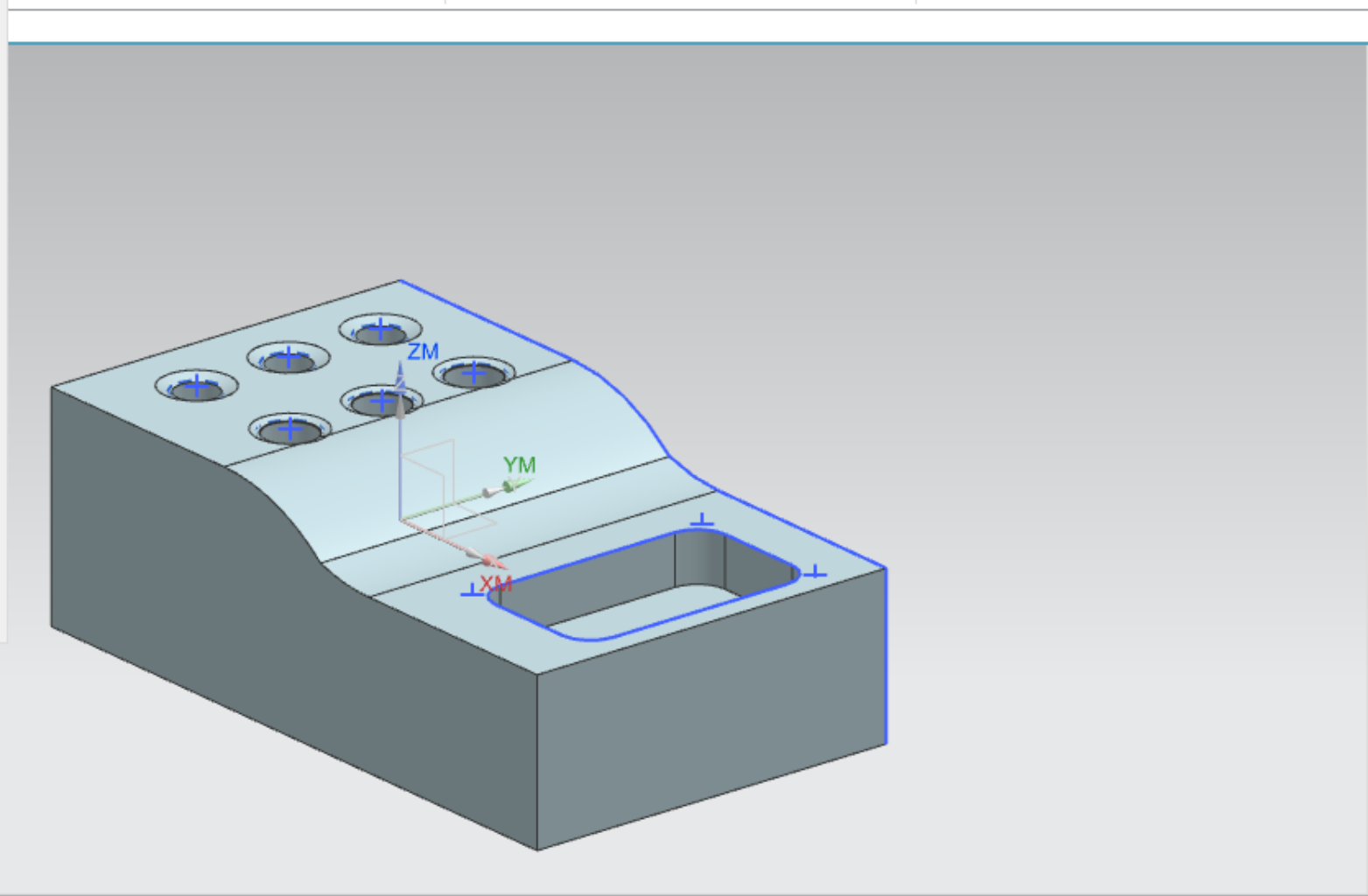
Application

Find a Command

Shop presentation More

Display Animation Speed 5

Workpiece Show 3D IPW Analysis Geometry Synchronous Modeling Feature Tools



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool

Type
hole_making

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype

Location
Tool: MAGANIZE

Name
broca_10.5

OK Apply Cancel

Operation Navigator - Machine Tool

Name

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - POCKET_08
 - POCKET_09
 - POCKET_10

Dependencies

Details

Application

Find a Command

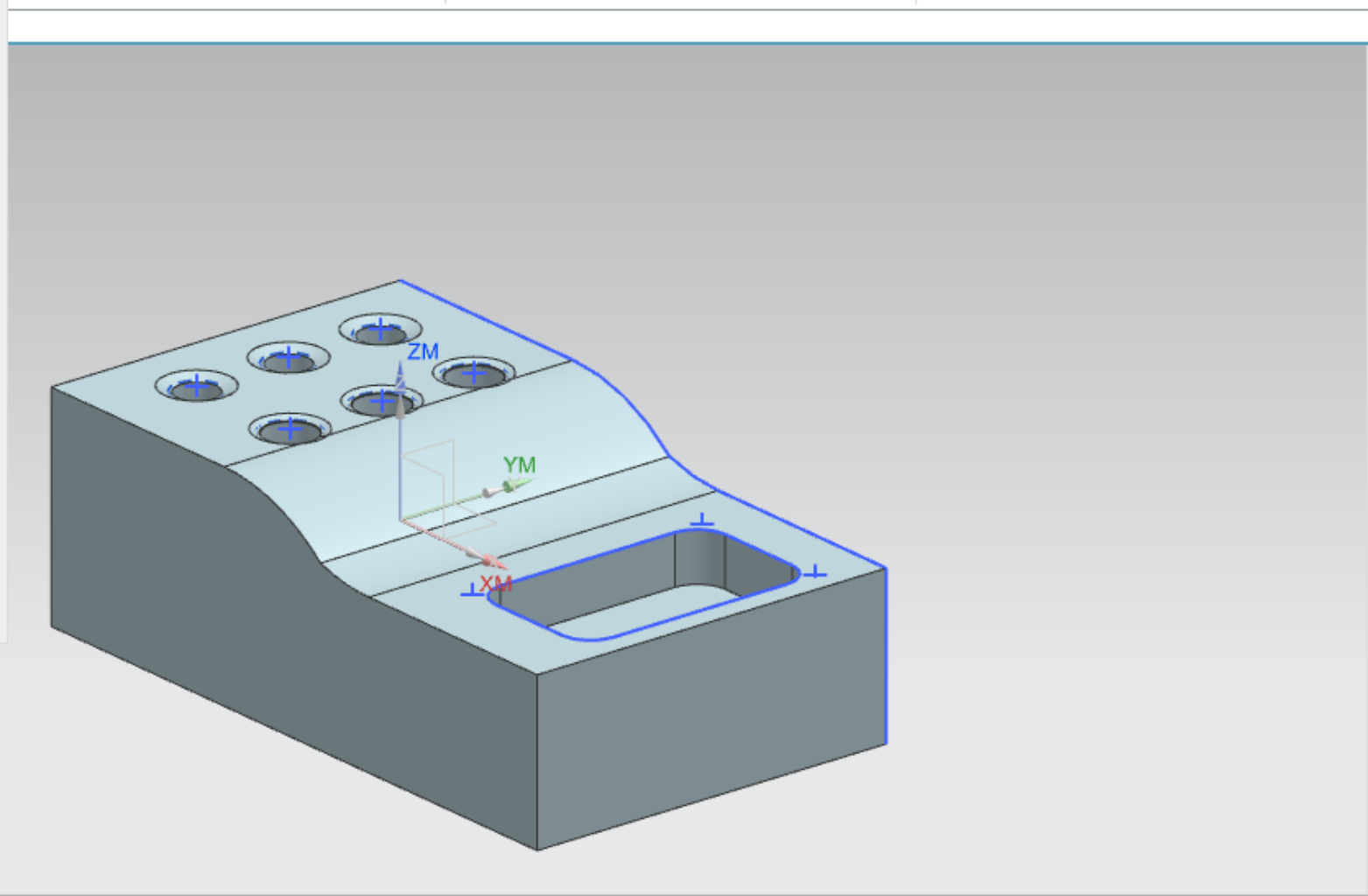
Shop Presentation More

Display Animation Workpiece

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Create Tool

Type: hole_making

Library

Retrieve Tools from Library

Retrieve Devices from Library

Tool Subtype

Location

Tool: POCKET_07

Name: broca_10.5

OK Apply Cancel

Operation Navigator - Machine Tool

Name

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - POCKET_08
 - POCKET_09
 - POCKET_10

Dependencies

Details

Application

Find a Command

Shop Presentation More

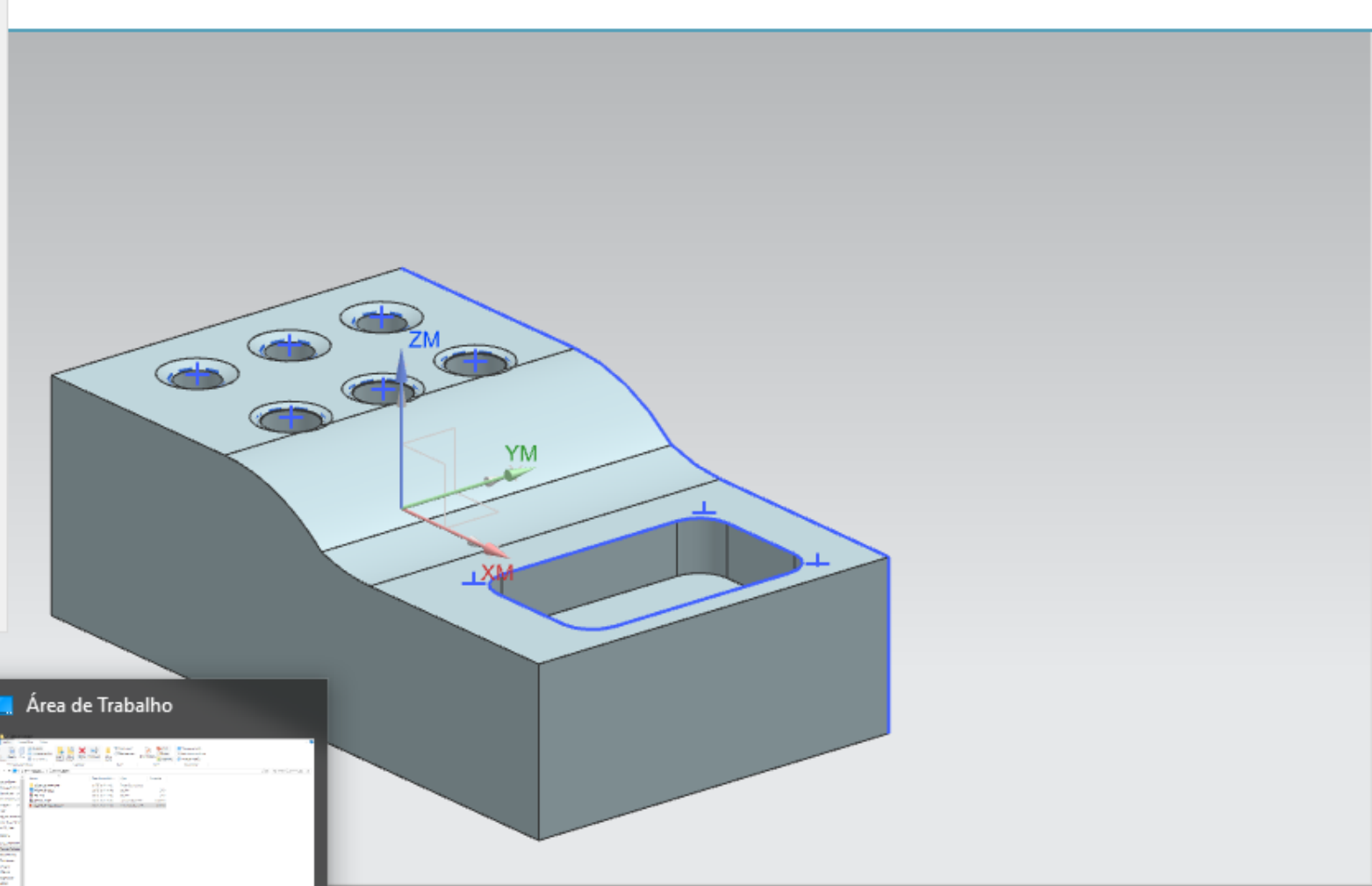
Display Animation

Speed 5

Workpiece

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



Explorador de Arquivos

Área de Trabalho

File Explorer window showing a directory tree and file list.

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Operation Navigator - Machine Tool

Name

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - POCKET_08
 - POCKET_09
 - POCKET_10

Dependencies

Details

Tool Shank Holder More

Legend

Dimensions

(D) Diameter: 10.5000

(PA) Point Angle: 118.0000

(PL) Point Length: 3.1545

(CR) Corner Radius: 0.0000

(L) Length: 80.0000

(FL) Flute Length: 35.0000

Flutes: 2

Description

Material: HSS

Numbers

Tool Number: 1

Adjust Register: 1

Offsets

Information

Library

OK Cancel

Application

Find a Command

More Display Animation Workpiece

Speed: 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

SYS_CL_TIP

SYS_CL_SHOULDER

ZC ZM

YM YC

XM XC

File Home Assemblies

Create Tool Create Geometry Create Operation


Insert

Menu

Type
hole_making

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype



Location
Tool: POCKET_08

Name
escareador_2045

OK Apply Cancel

Operation Navigator - Machine Tool

Name

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - BROCA_10.5
 - POCKET_08
 - POCKET_09
 - POCKET_10

Dependencies

Details

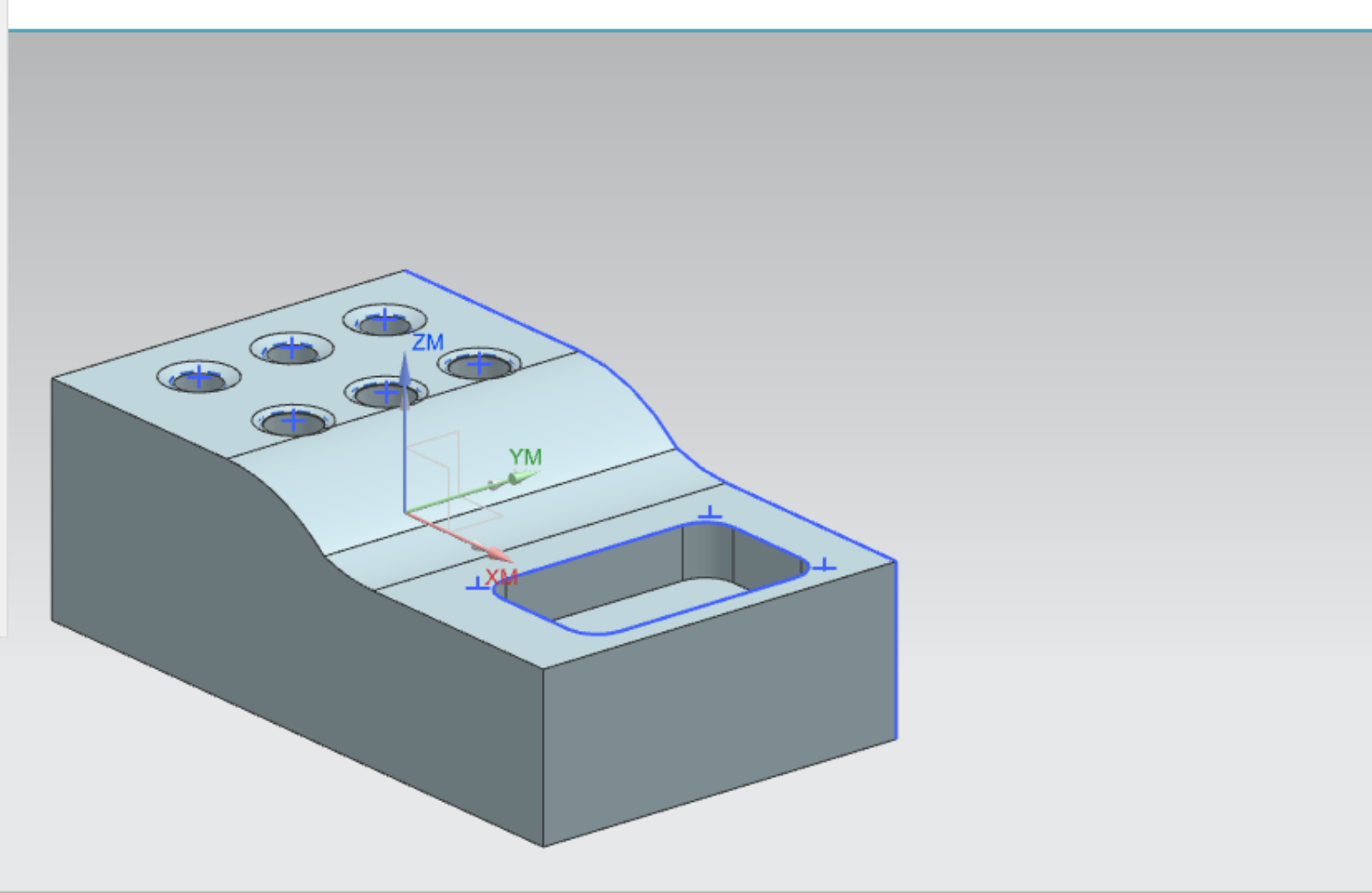
Application

Find a Command

Shop presentation More

Display Animation Speed 5

Workpiece Show 3D IPW Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Type
hole_making

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype
TAP

Location
Tool: GENERIC_MACHINE

Name
TAP

OK Apply Cancel

Operation Navigator - Machine Tool

Name

- GENERIC_MACHINE
 - Unused Items
 - MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - BROCA_10.5
 - POCKET_08
 - ESCAREADOR_2045
 - POCKET_09
 - POCKET_10

Dependencies

Details

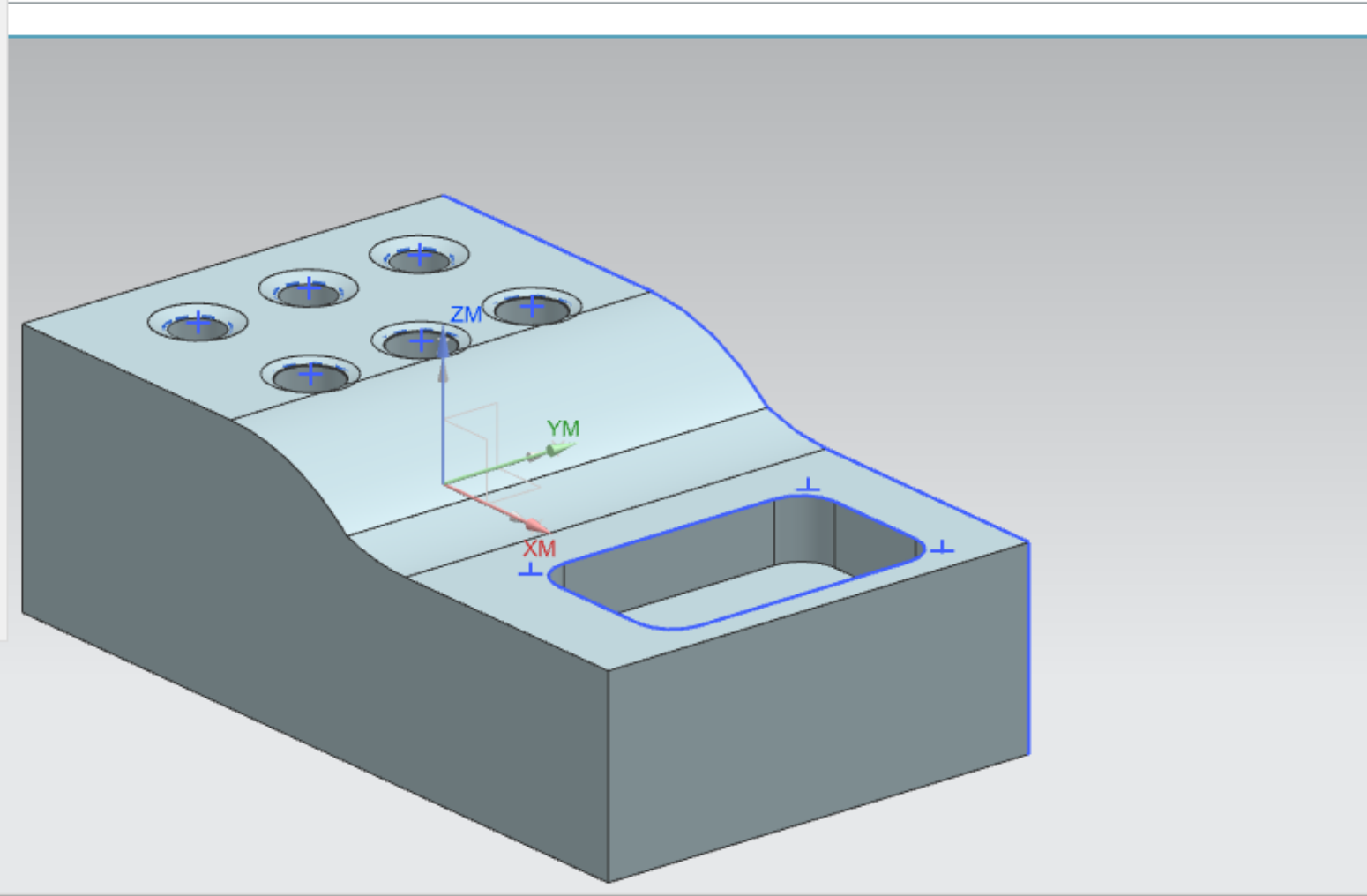
Application

Find a Command

Speed: 5

Workpiece

Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

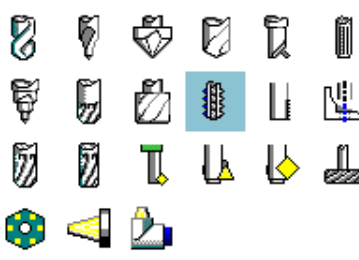
Insert

Menu

Type
hole_making

Library
Retrieve Tools from Library
Retrieve Devices from Library

Tool Subtype



Location
Tool
POCKET_09

Name
macho_10

OK Apply Cancel

Operation Navigator - Machine Tool

Name

GENERIC_MACHINE

- Unused Items
- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - BROCA_10.5
 - POCKET_08
 - ESCAREADOR_2045
 - POCKET_09
 - POCKET_10

Dependencies

Details

Application

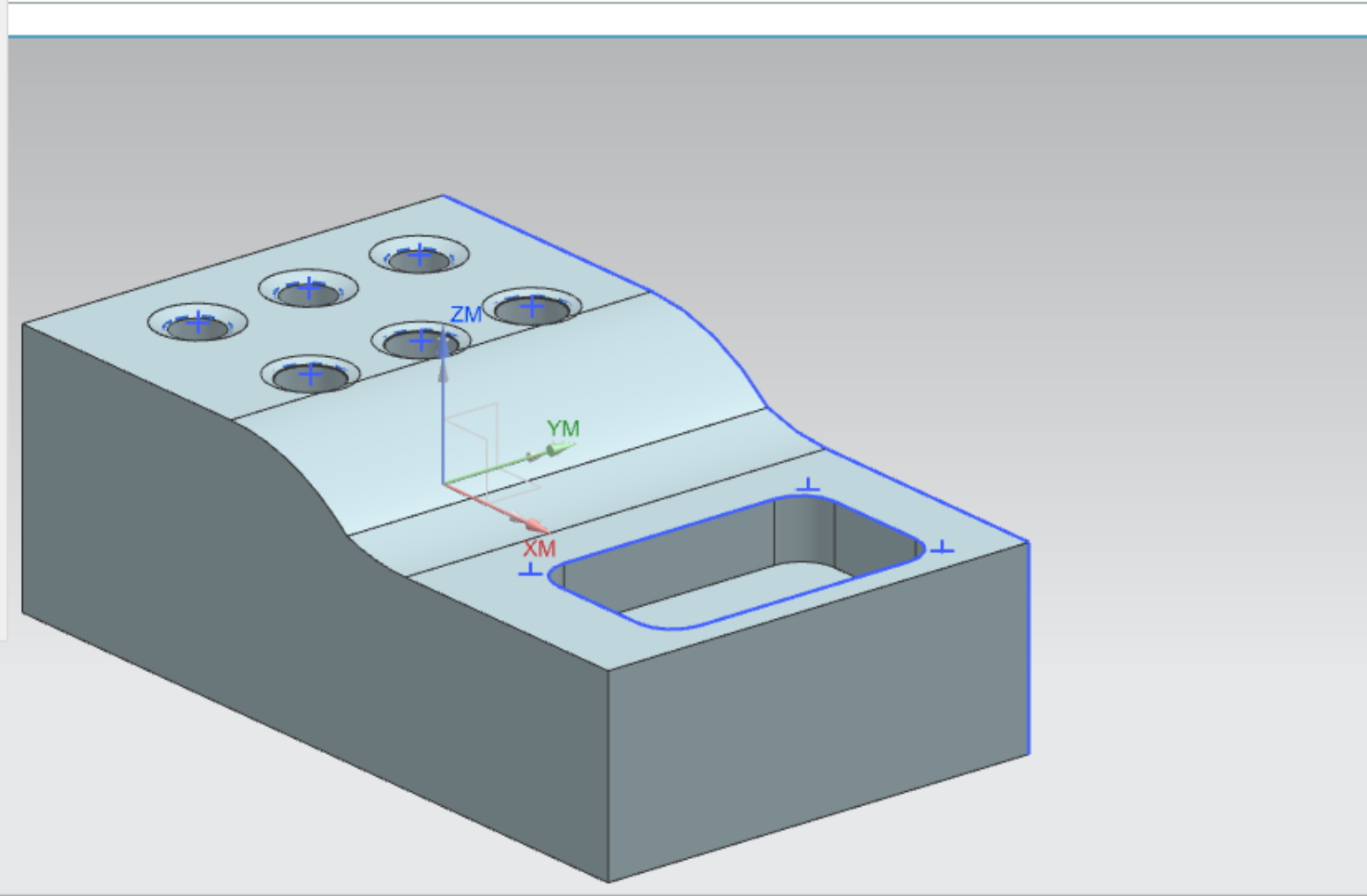
Find a Command

Shop presentation More Display Animation Workpiece

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies

Create Tool Create Geometry Create Operation

Menu

Operation Navigator - Machine Tool

Name

- MAGANIZE
 - POCKET_01
 - FRESA_50
 - POCKET_02
 - FRESA_12
 - POCKET_03
 - FRESA_12_ESF
 - POCKET_04
 - BROCA_CENTRO_3
 - POCKET_05
 - BROCA_05
 - POCKET_06
 - BROCA_8.5
 - POCKET_07
 - BROCA_10.5
 - POCKET_08
 - ESCAREADOR_2045
 - POCKET_09
 - MACHO_10
 - POCKET_10

Dependencies Details

Type

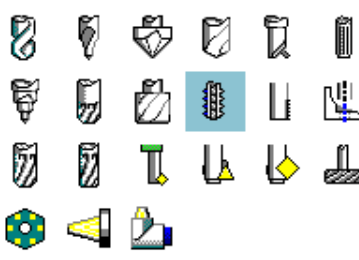
hole_making

Library

Retrieve Tools from Library

Retrieve Devices from Library

Tool Subtype



Location

Tool: POCKET_10

Name

macho_12

OK Apply Cancel

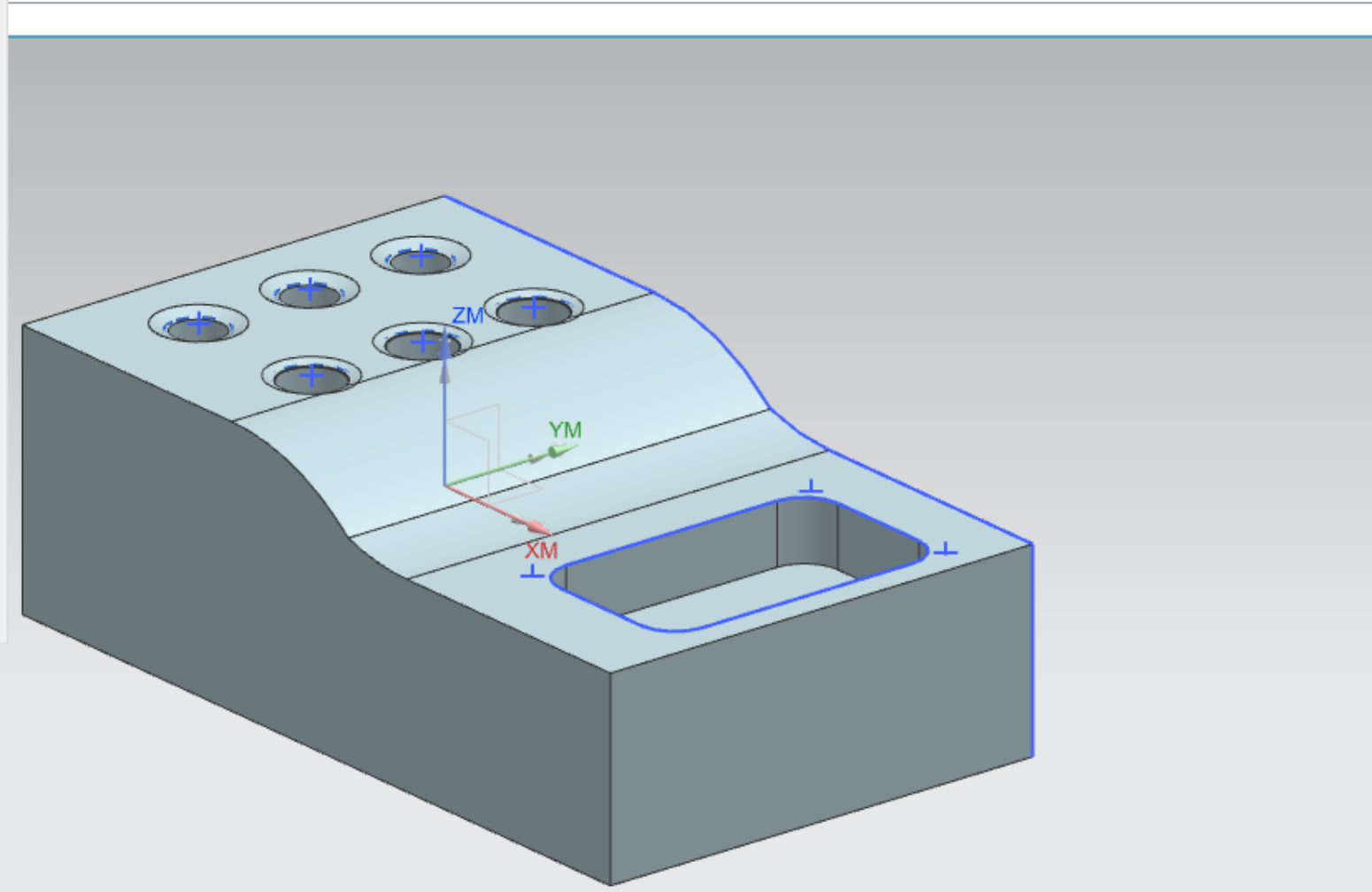
Application

Find a Command

Shop presentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed: 5

Show 3D IPW



Choose type, location, group and specify tool name or retrieve a tool from the library

File Home Assemblies Curve Analysis View Render Tools Application
Find a Command

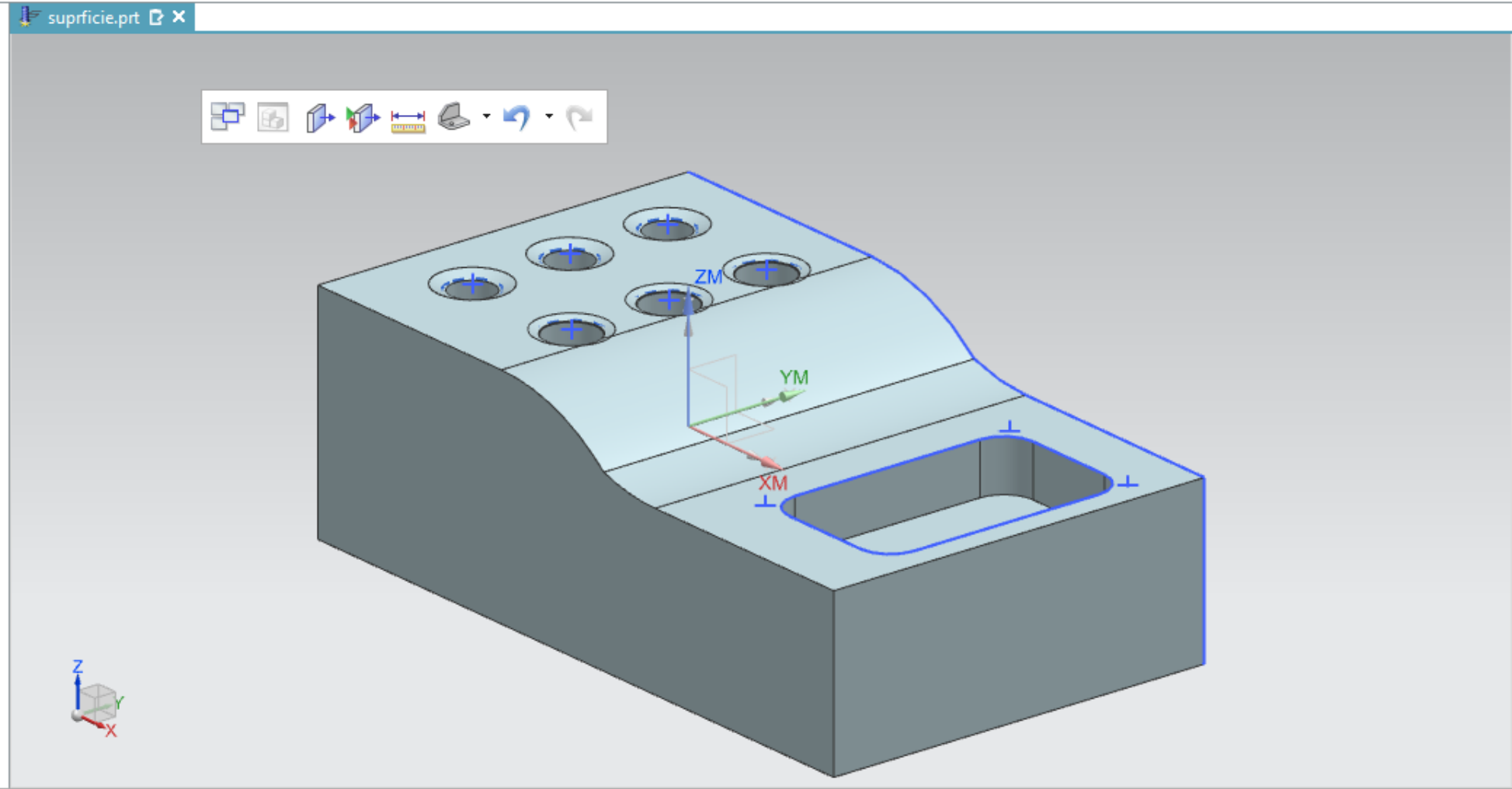
Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu No Selection Filter Entire Assembly

Operation Navigator - Machine Tool

Name	Path
MAGANIZE	
POCKET_01	
FRESA_50	
POCKET_02	
FRESA_12	
POCKET_03	
FRESA_12_ESF	
POCKET_04	
BROCA_CENTRO_3	
POCKET_05	
BROCA_05	
POCKET_06	
BROCA_8.5	
POCKET_07	
BROCA_10.5	
POCKET_08	
ESCAREADOR_2045	
POCKET_09	
MACHO_10	
POCKET_10	
MACHO_12	

Dependencies Details



File Home Assemblies Curve Analysis View Render Tools Application

Find a Command

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Menu No Selection Filter Entire Assembly

Operation Navigator

Geometry

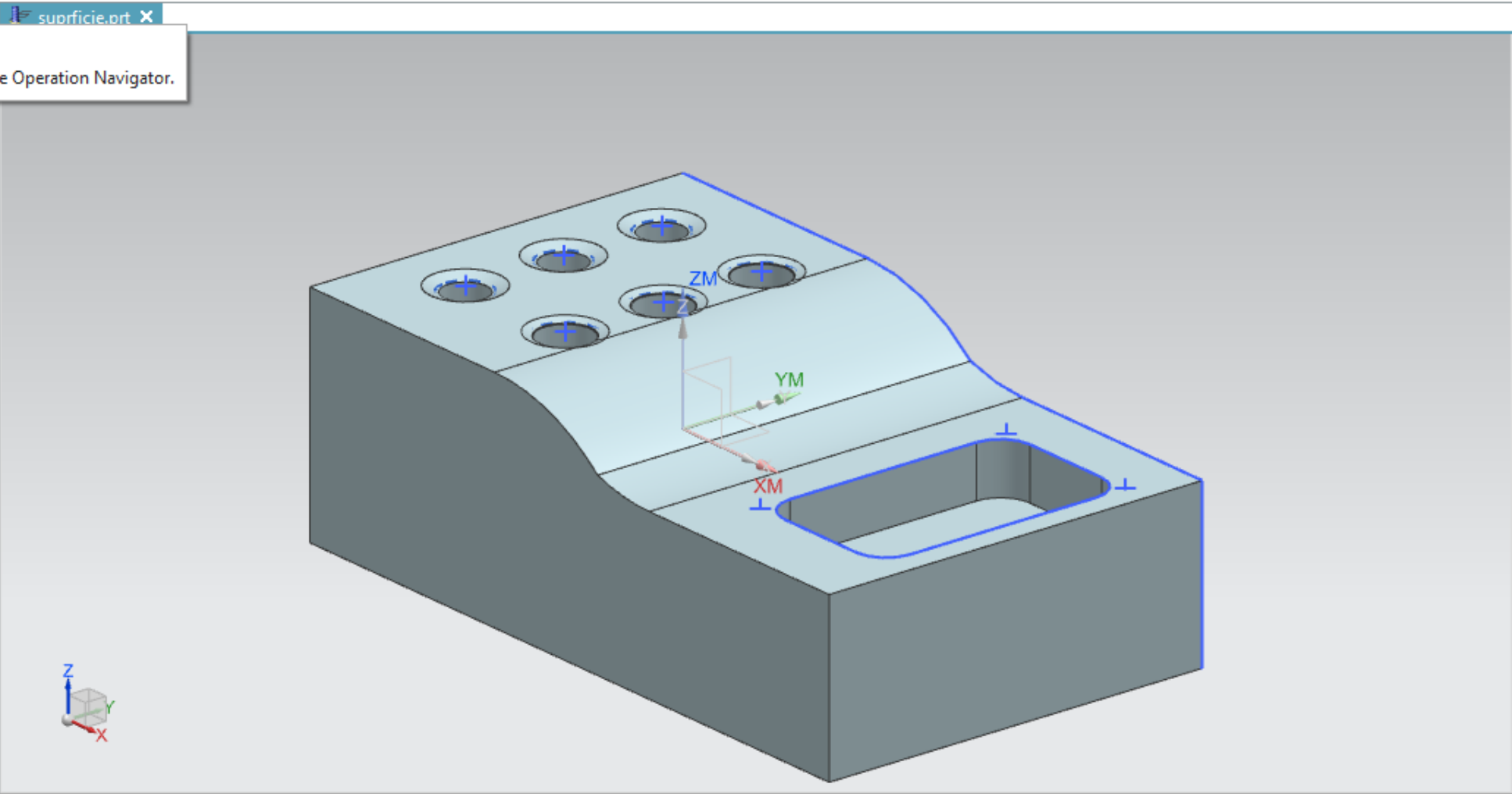
subficie.prt

Name
GEOMETRY
Unused Items
MCS_MILL

Dependencies

Details

Geometry View
Displays the Geometry View in the Operation Navigator.



File Home Assemblies Curve Analysis View Render Tools Application

Find a Command

Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Speed Show 3D IPW Analysis Geometry Synchronous Modeling Feature Tools

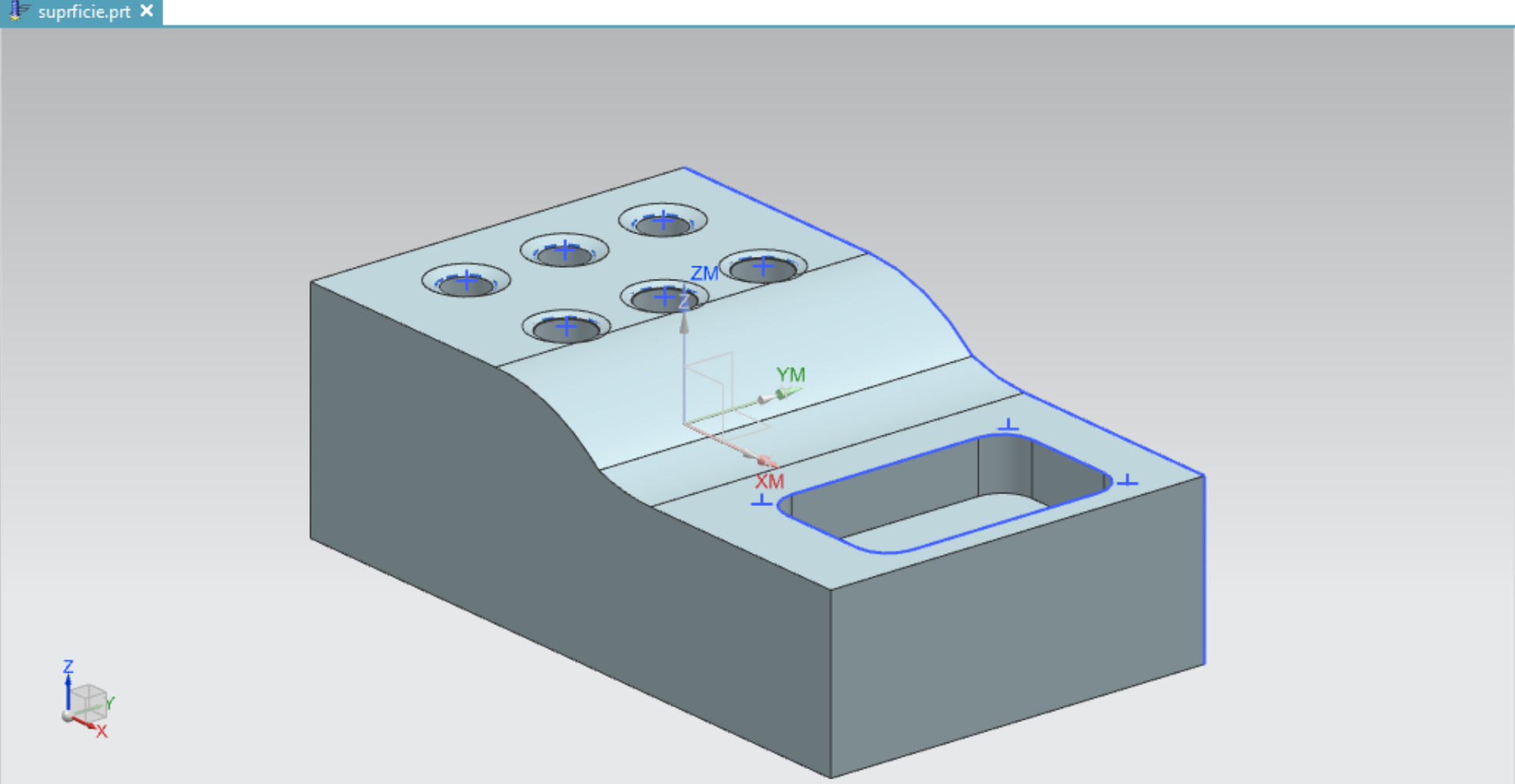
Menu No Selection Filter Entire Assembly

Operation Navigator - Geometry

Name	Path	Tool
GEOMETRY		
Unused Items		
MCS_MILL		
WORKPIECE		

Dependencies

Details



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Geometry

Specify Part

Specify Blank

Specify Check

Operation Navigator - Geometry

Name

GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE

Part Offset: 0.0000

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Application

Find a Command

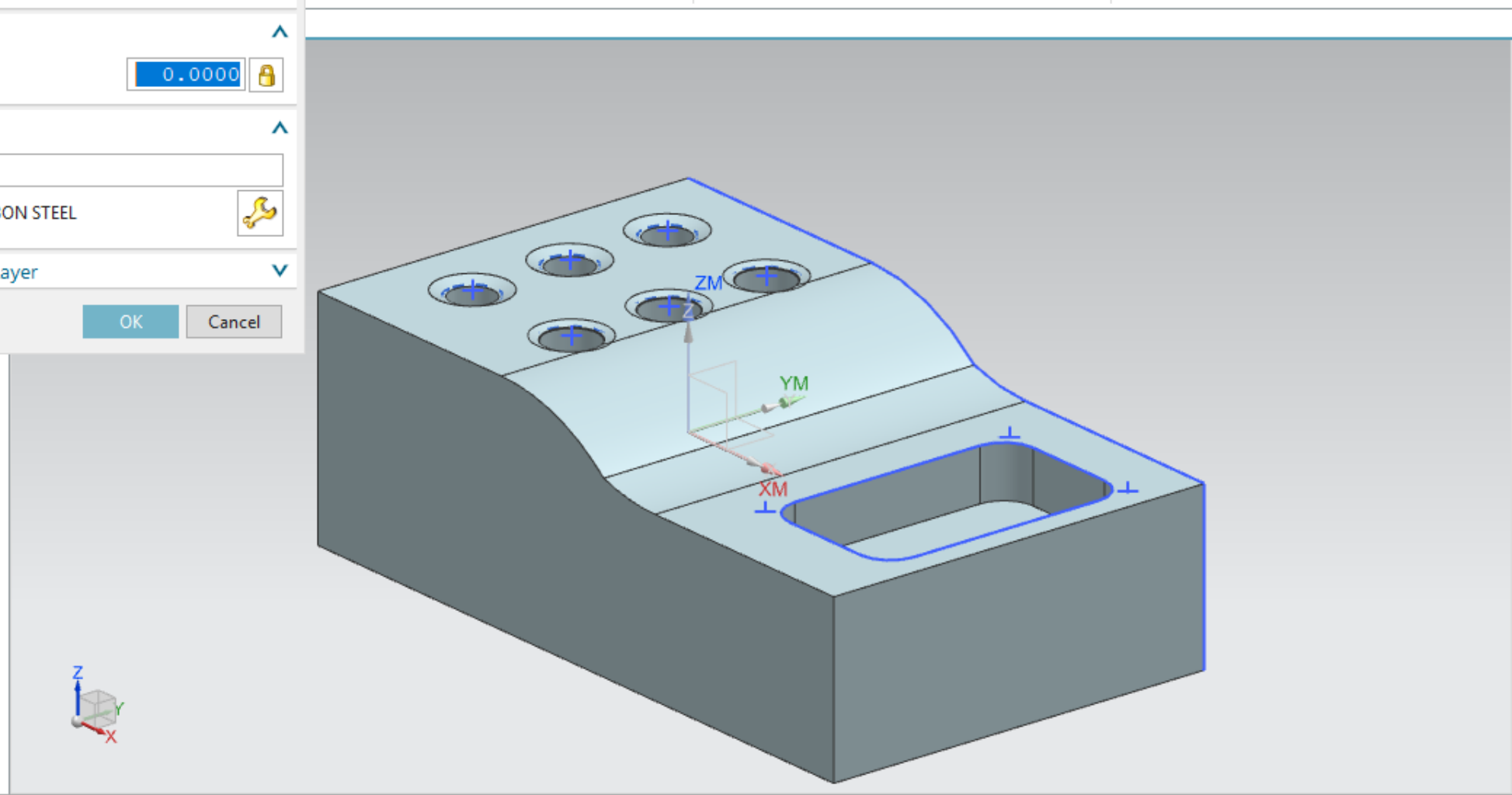
Speed: 5

Display Animation Workpiece

Analysis Geometry Synchronous Modeling Feature Tools

Dependencies

Details



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Geometry

Specify Part

Specify Blank

Specify Check

Offsets

Part Offset: 0.0000

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Application

Speed: 5

Animation

Workpiece

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Single Face Single Curve Single Body

Operation Navigator - Geometry

Name

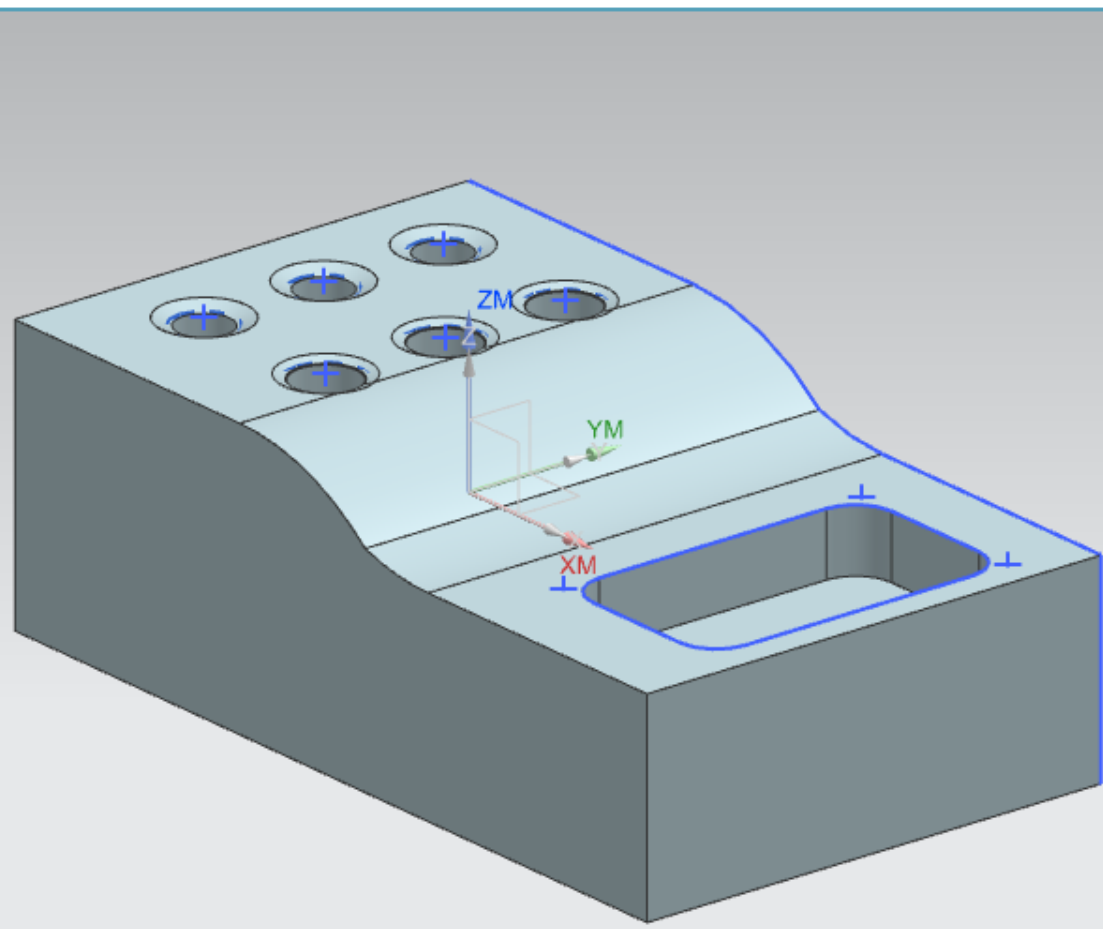
GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE

Dependencies

Details

Select or Edit the Part Geometry



File Home Assemblies Geometry

Create Tool Create Geometry Create Operation

Menu

Operation Navigator - Geometry

Name
GEOMETRY
Unused Items
MCS_MILL
WORKPIECE

Dependencies Details

Geometry

* Select Object (0)

Custom Data

Offset

Add New Set

Set	Number Of Items	Custom Da
New	0	No

OK Cancel

Application

Find a Command

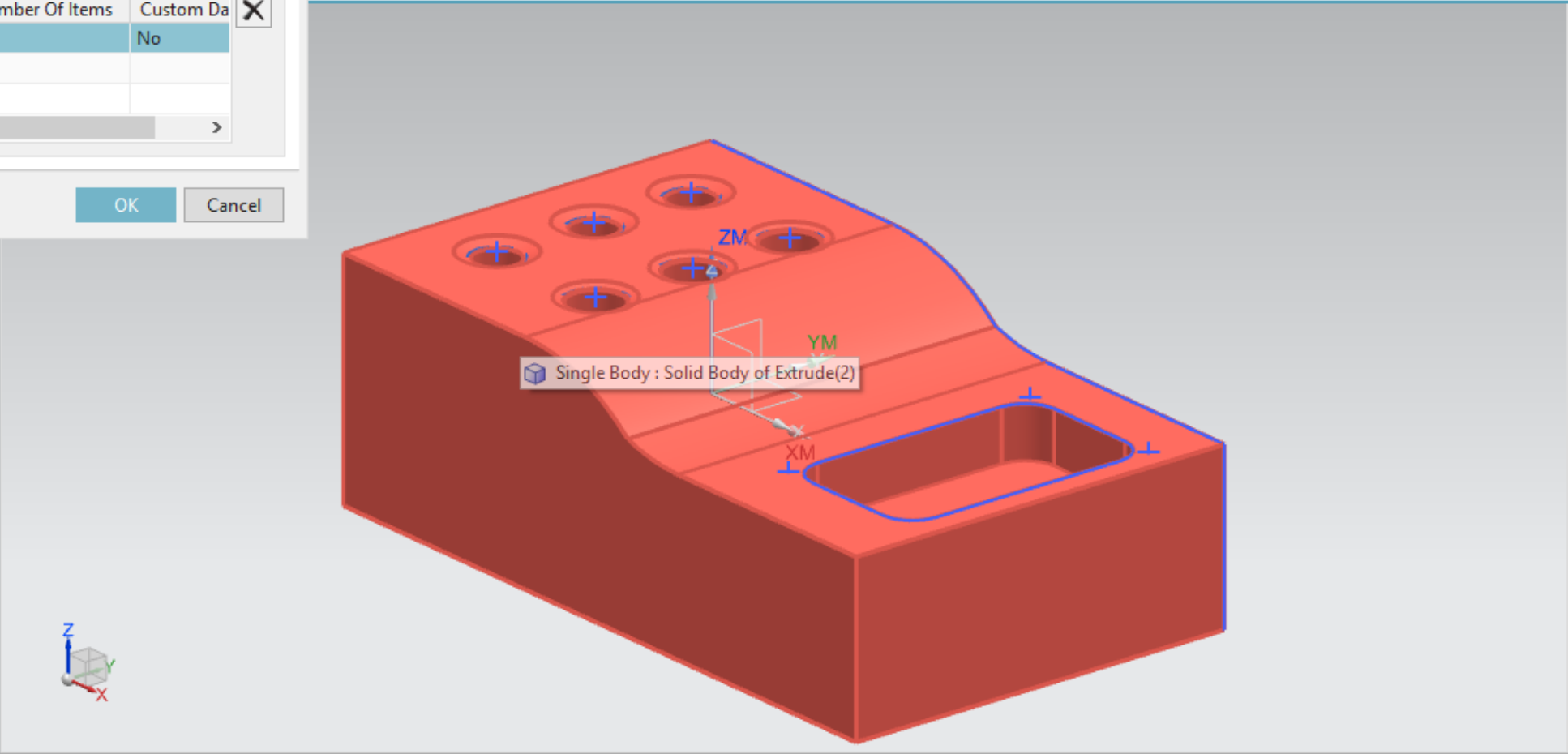
More Display Animation Workpiece

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Single Face Single Curve Single Body



Geometry

✓ Select Object (1)

Custom Data

Offset

Add New Set

Set	Number Of Items	Custom Da
1	1	No

Topology

OK Cancel

Operation Navigator - Geometry

Name

GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE

Dependencies

Details

Application

Find a Command

More

Display

Animation

Speed

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

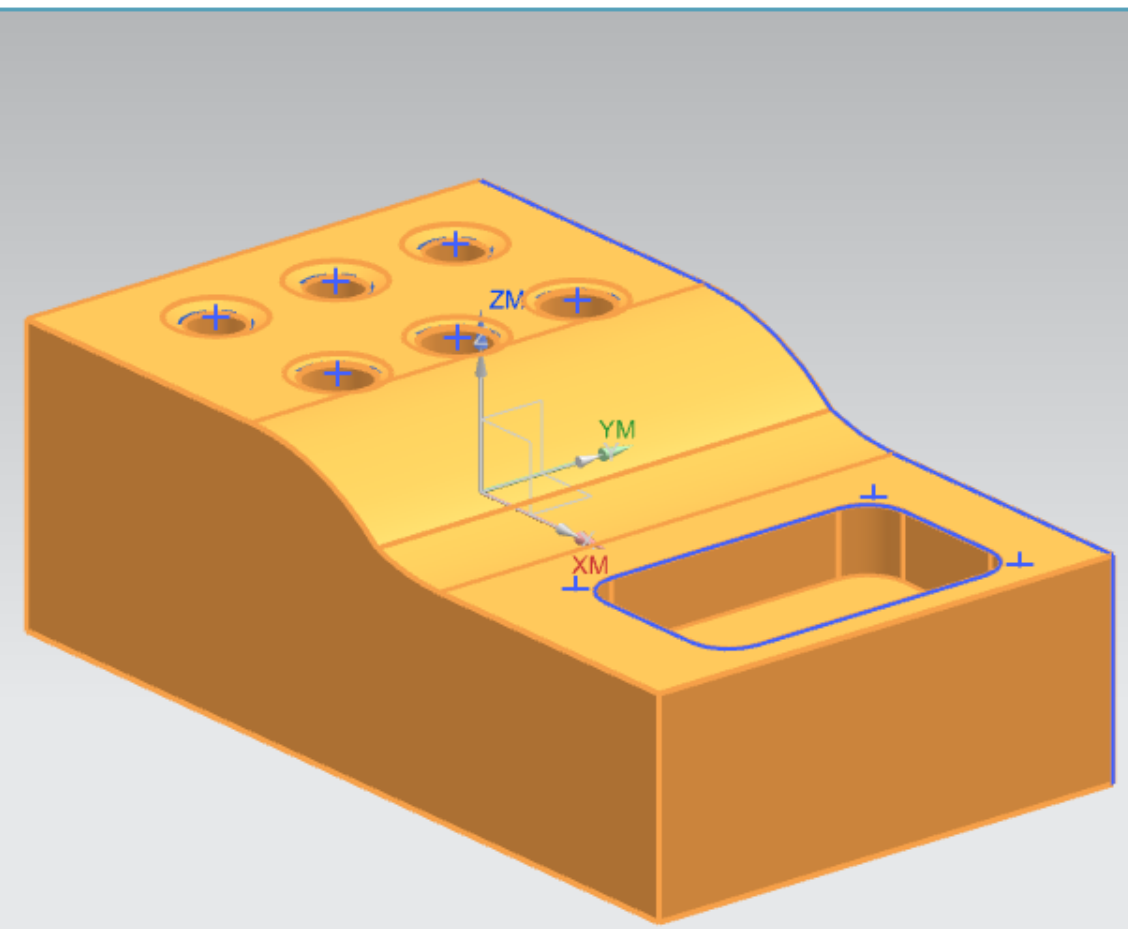
Feature

Tools

Single Face

Single Curve

Single Body



Select Part Geometry

Solid Body selected

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Geometry

Specify Part

Specify Blank

Specify Check

Offsets

Part Offset: 0.0000

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Application

Speed: 5

Display

Animation

Workpiece

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Single Face Single Curve Single Body

Operation Navigator - Geometry

Name

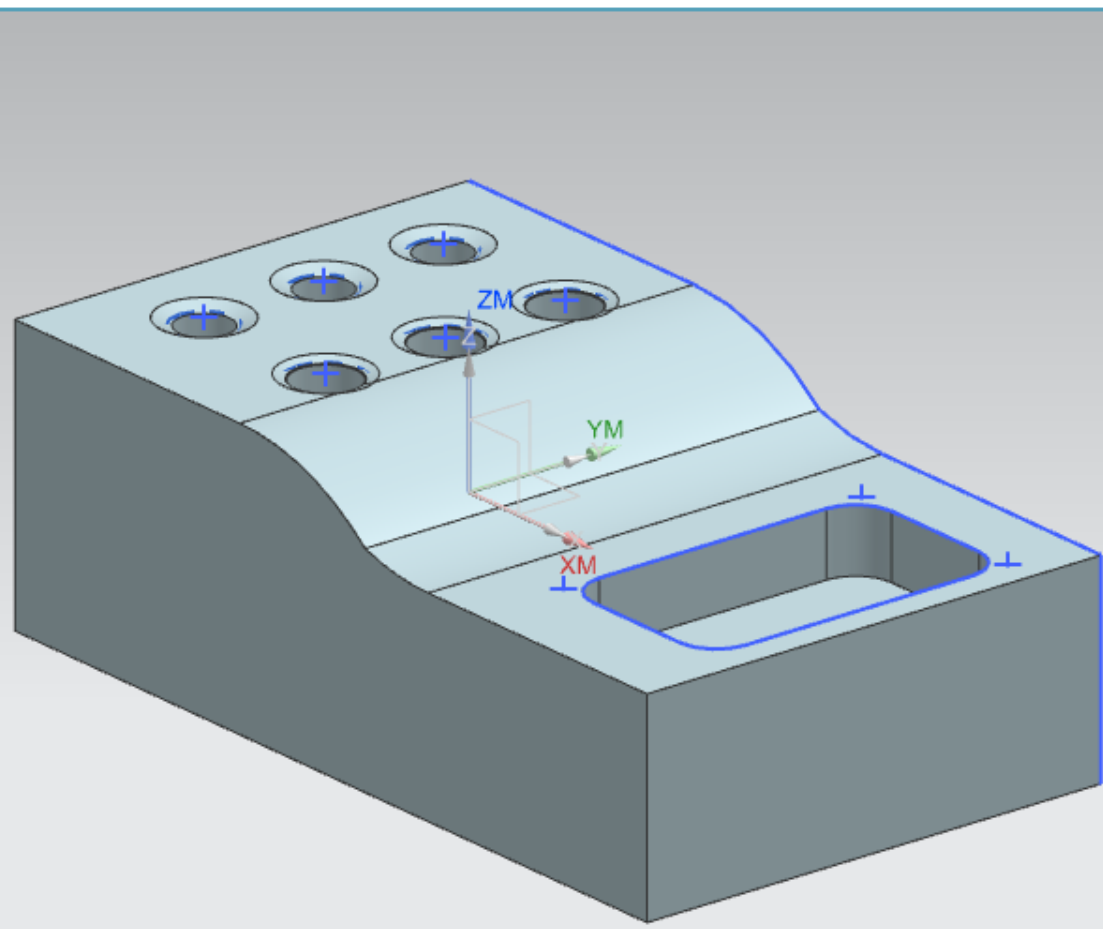
GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE

Dependencies

Details

Select or Edit the Blank Geometry



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Blank Geometry

- Geometry
- Geometry
- Offset from Part
- Bounding Block
- Bounding Cylinder
- Part Outline
- Part Convex Hull
- IPW - In Process Workpiece
- Show Shortcuts

IPW Position

OK Cancel

Operation Navigator - Geometry

Name
GEOMETRY
Unused Items
MCS_MILL
WORKPIECE

Dependencies

Details

Application

Find a Command

More

Display

Animation

Speed

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

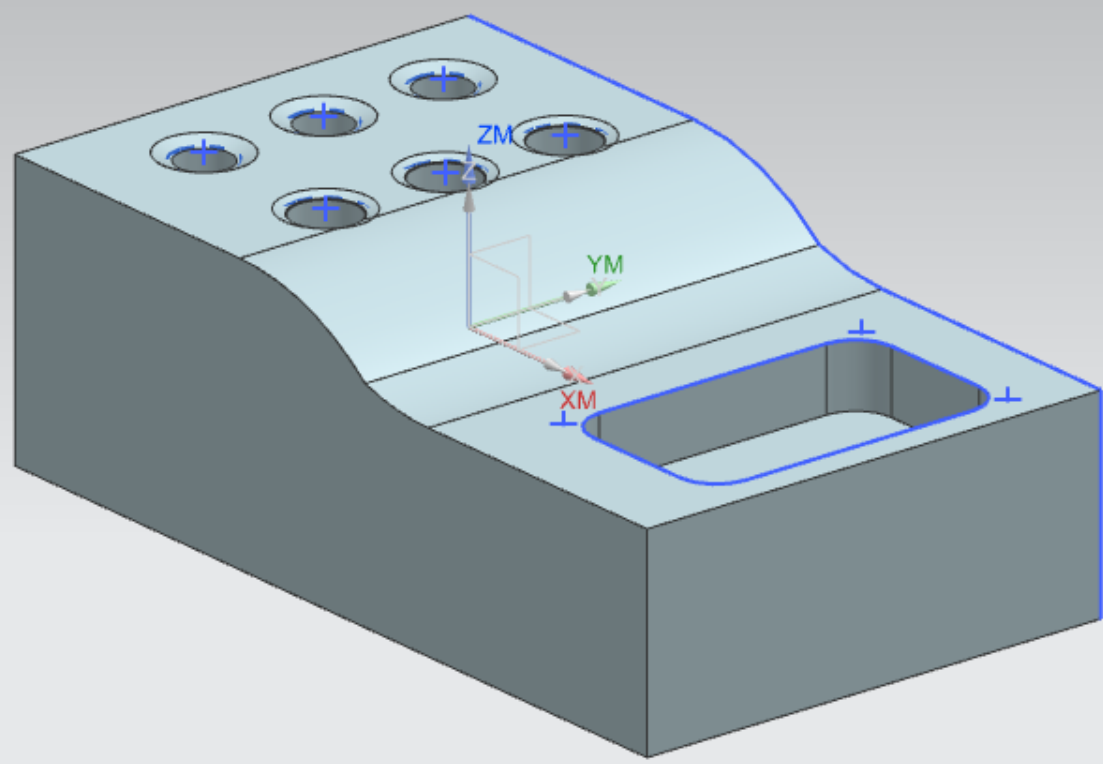
Feature

Tools

Single Face

Single Curve

Single Body



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Bounding Block

Orientation

Limits

XM-	0.0000	XM+	0.0000
YM-	0.0000	YM+	0.0000
ZM-	0.0000	ZM+	0.0000

IPW Position

OK Cancel

Application

Find a Command

More

Display

Animation

Speed

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

Feature

Tools

Single Face

Single Curve

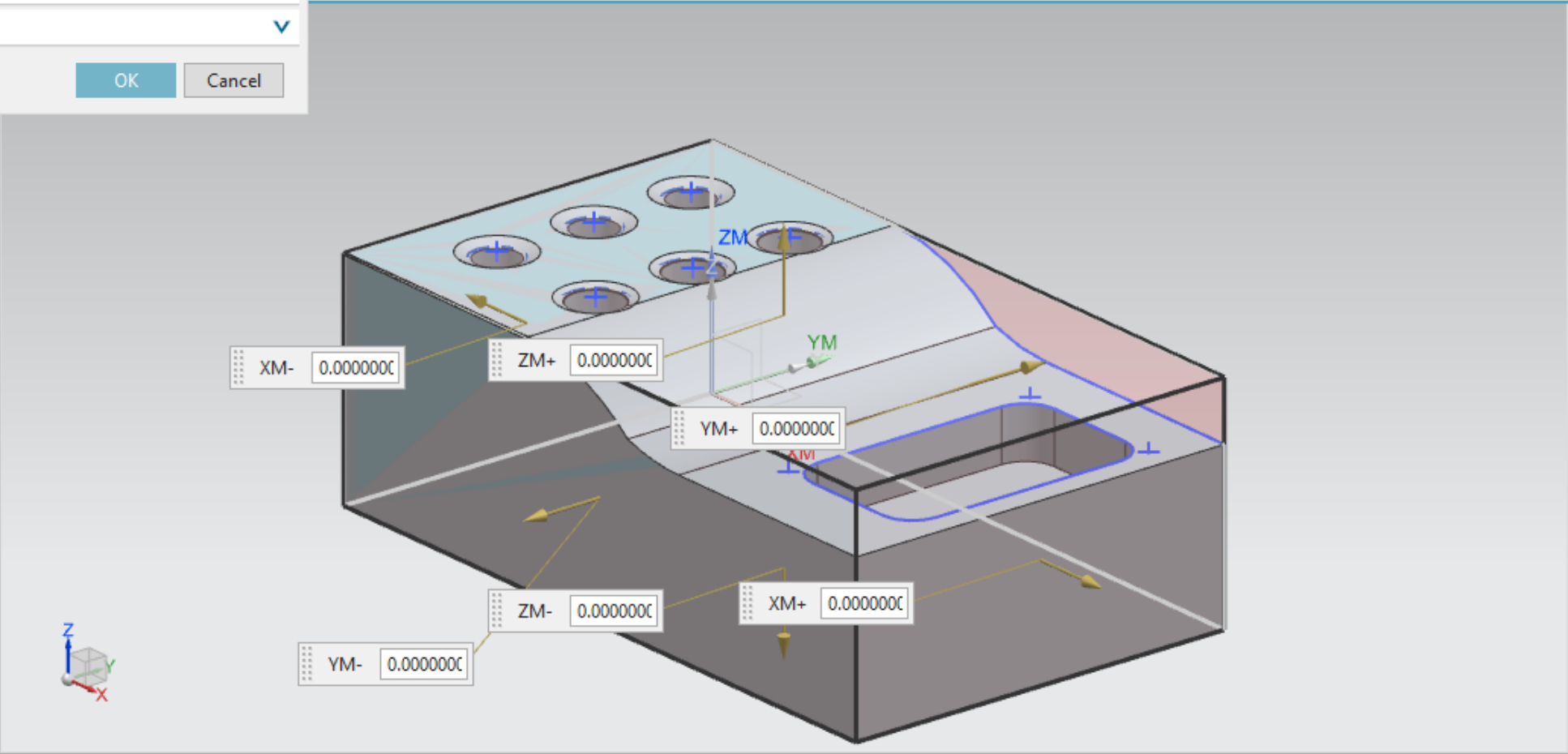
Single Body

Operation Navigator - Geometry

Name
GEOMETRY
Unused Items
MCS_MILL
WORKPIECE

Dependencies

Details



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Blank Geometry

Bounding Block

Orientation

Limits

XM-	0.0000	XM+	0.0000
YM-	0.0000	YM+	0.0000
ZM-	0.0000	ZM+	1.0000

IPW Position

OK Cancel

Application

Find a Command

More

Display

Animation

Speed

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

Feature

Tools

Single Face

Single Curve

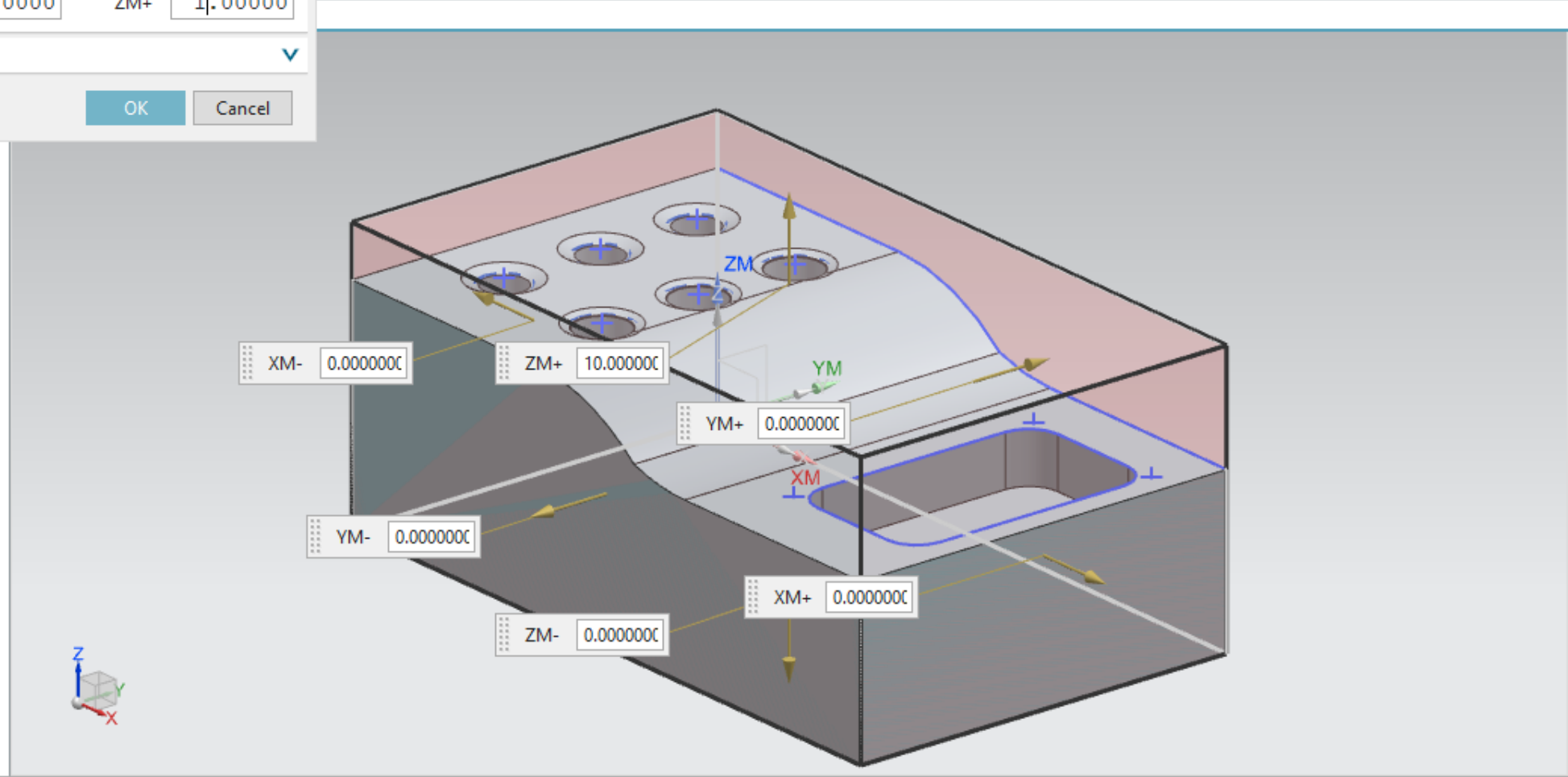
Single Body

Operation Navigator - Geometry

Name
GEOMETRY
Unused Items
MCS_MILL
WORKPIECE

Dependencies

Details



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Geometry

Specify Part

Specify Blank

Specify Check

Offsets

Part Offset:

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Operation Navigator - Geometry

Name
GEOMETRY
Unused Items
MCS_MILL
WORKPIECE

Dependencies

Details

Application

Find a Command

More

Display

Animation

Speed: 5

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

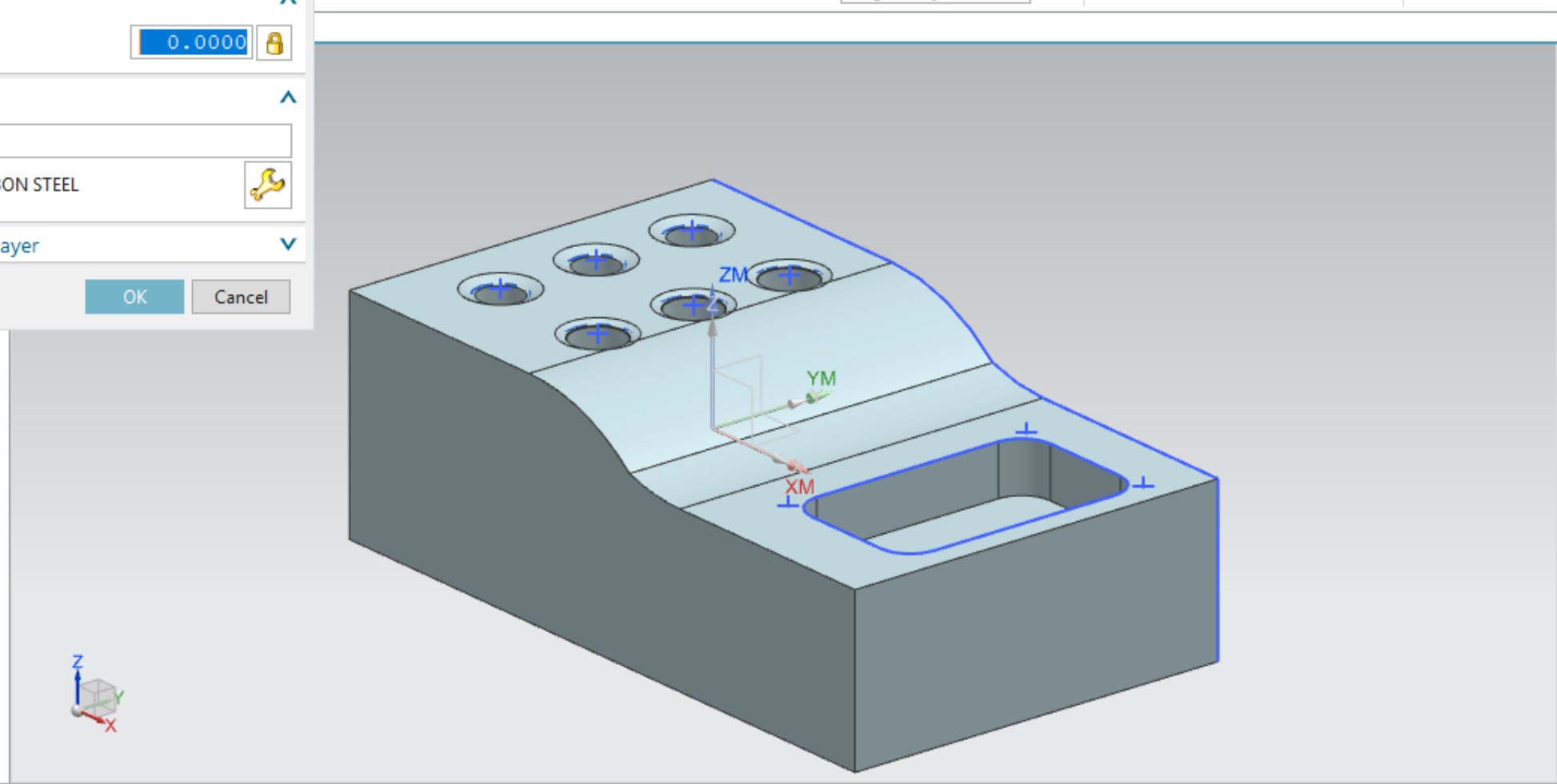
Feature

Tools

Single Face

Single Curve

Single Body



File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Geometry

Specify Part

Specify Blank

Specify Check

Offsets

Part Offset: 0.0000

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Application

More

Display

Animation

Speed: 5

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

Feature

Tools

Single Face

Single Curve

Single Body

Operation Navigator - Geometry

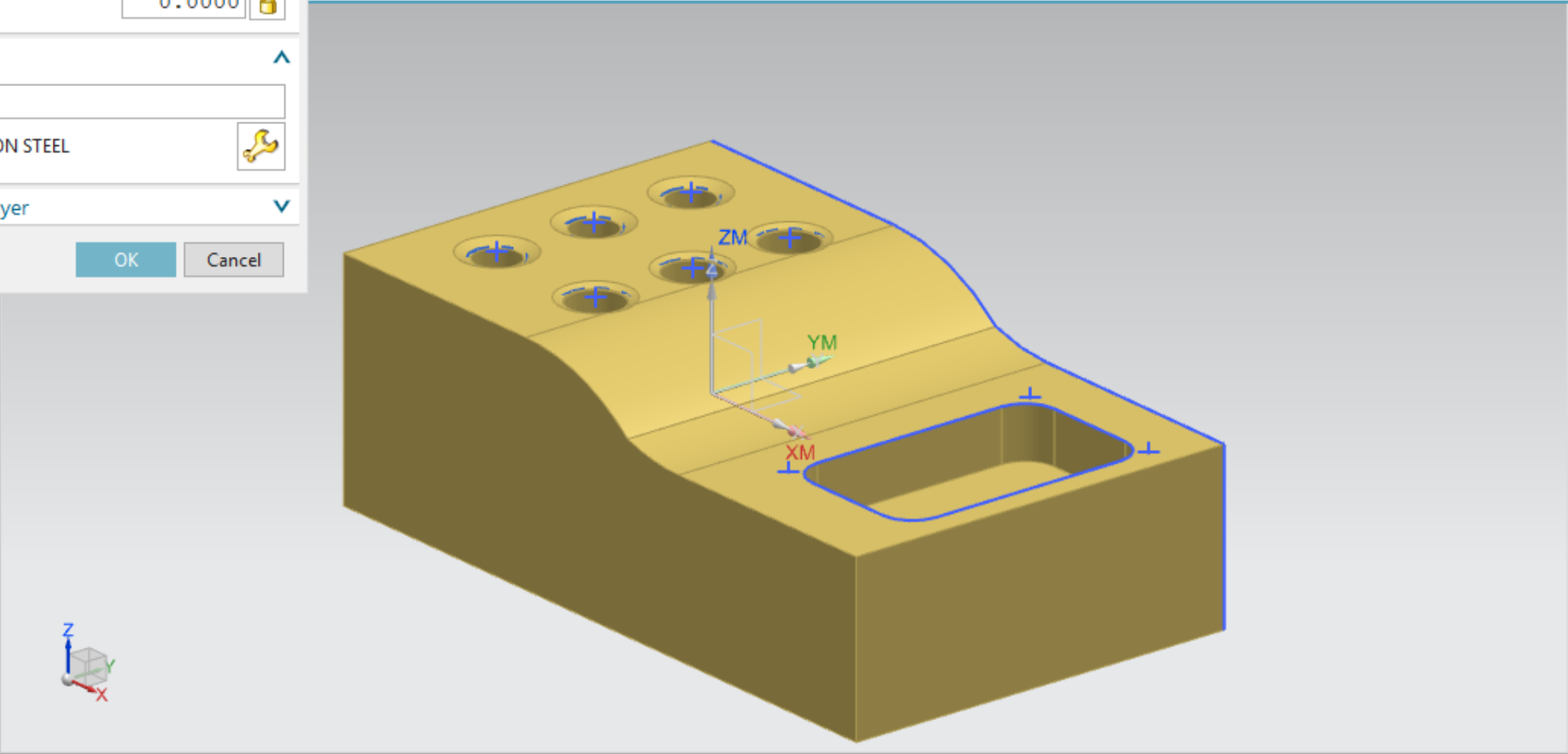
Name

GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE

Dependencies

Details



Specify parameters Current: WORKPIECE

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Geometry

Specify Part

Specify Blank

Specify Check

Display

Offsets

Part Offset: 0.0000

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Application

More

Display

Animation

Speed: 5

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

Feature

Tools

Single Face

Single Curve

Single Body

Operation Navigator - Geometry

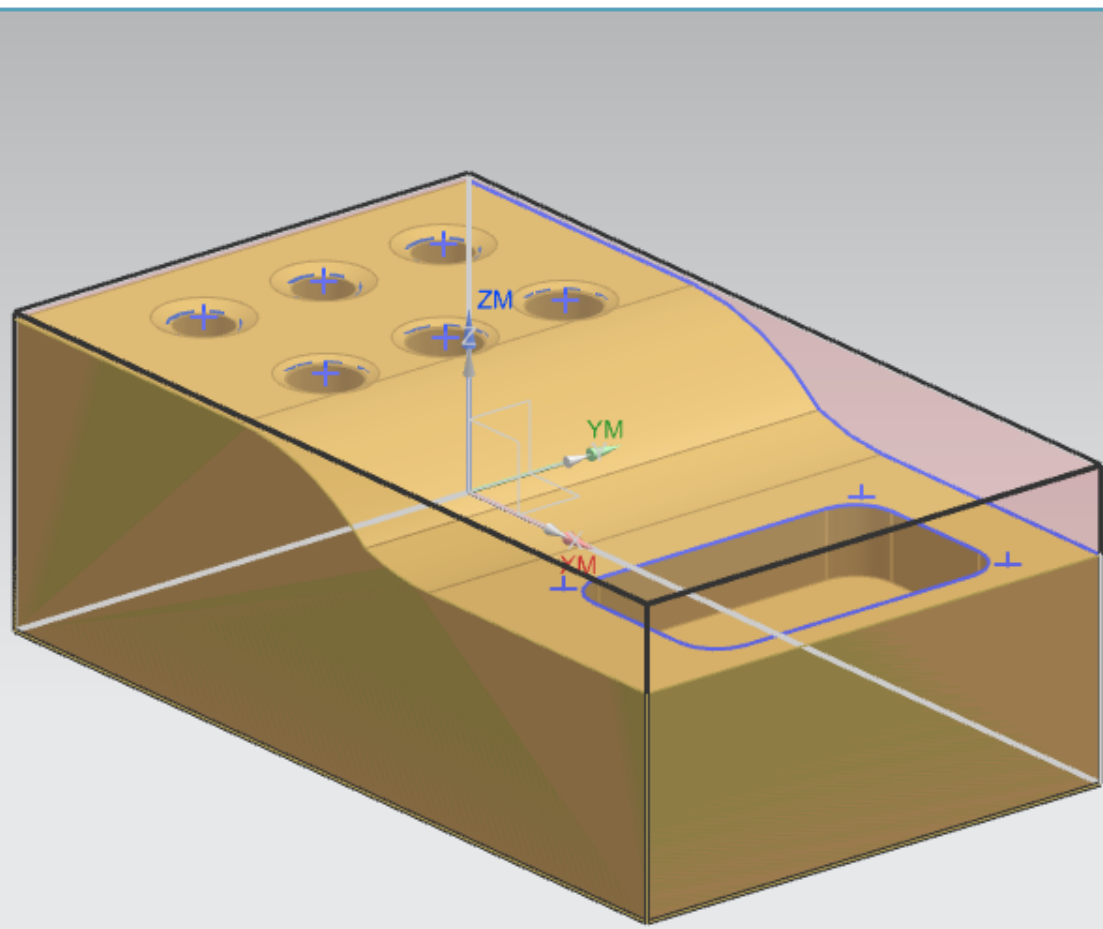
Name

GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE

Dependencies

Details



Specify parameters Current: WORKPIECE

File Home Assemblies

Create Tool Create Geometry Create Operation

Insert

Menu

Geometry

Specify Part

Specify Blank

Specify Check

Offsets

Part Offset: 0.0000

Description

Material: CARBON STEEL

Layout and Layer

OK Cancel

Operation Navigator - Geometry

Name
GEOMETRY
Unused Items
MCS_MILL
WORKPIECE

Dependencies

Details

Application

Find a Command

More

Display

Animation

Speed: 5

Workpiece

Show 3D IPW

Analysis

Geometry

Synchronous Modeling

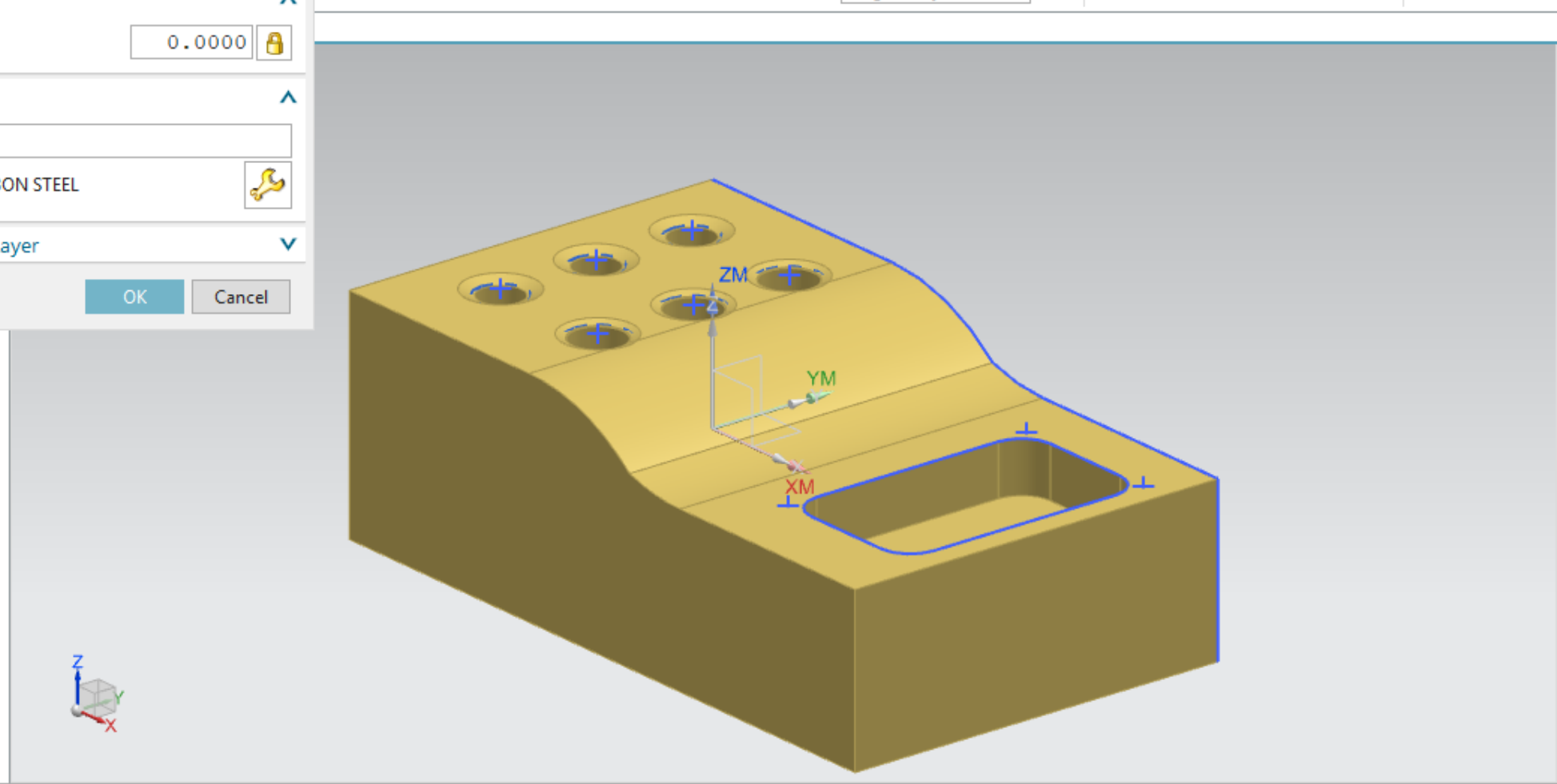
Feature

Tools

Single Face

Single Curve

Single Body



Specify parameters Current: WORKPIECE

File Home Assemblies Curve Analysis View Render Tools Application

Find a Command

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Insert Actions Operations Display Animation Workpiece

Menu No Selection Filter Entire Assembly

supficie.prt

Layer Settings... Ctrl+L

Layer Visible in View...

Layer Category...

Move to Layer...

Copy to Layer...

WCS

- Dynamics...
- Origin... Moves the origin of the WCS (Work Coordinate System).
- Rotate...
- Orient...
- Set WCS to Absolute
- Change XC-direction...
- Change YC-direction...
- Display W
- Save

Dependencies

Details

Operations: Calculate, Post, Shop, Machine, Process, Documentation

More: [Icons]

Display: [Icons]

Animation: [Icons], Speed: 5

Workpiece: [Icons], Show 3D IPW

Analysis: [Icon]

Geometry: [Icon]

Synchronous Modeling: [Icon]

Feature: [Icon]

Tools: [Icon]

Point

- Inferred Point
- Inferred Point
- Cursor Location
- Existing Point
- End Point
- Control Point
- Intersection Point
- Arc/Ellipse/Sphere Center
- Angle on Arc/Ellipse
- Quadrant Point
- Point on Curve/Edge
- Point on Face**
- Between Two Points
- Spline Pole
- Spline Defining Point
- By Expression
- Show Shortcuts

Operation Nav

Name

GEOMETRY

- Unused
- MCS_M
- WO

Dependencies

Details

The image shows a 3D CAD model of a mechanical part. A coordinate system is defined with axes labeled XM (red), YM (green), and ZM (blue). A point is highlighted on the top surface of the part, with a small orange sphere and a crosshair. The part has several circular features on its top surface and a rectangular cutout on its side.

Select object to infer point or use OK to specify point at Coordinates location

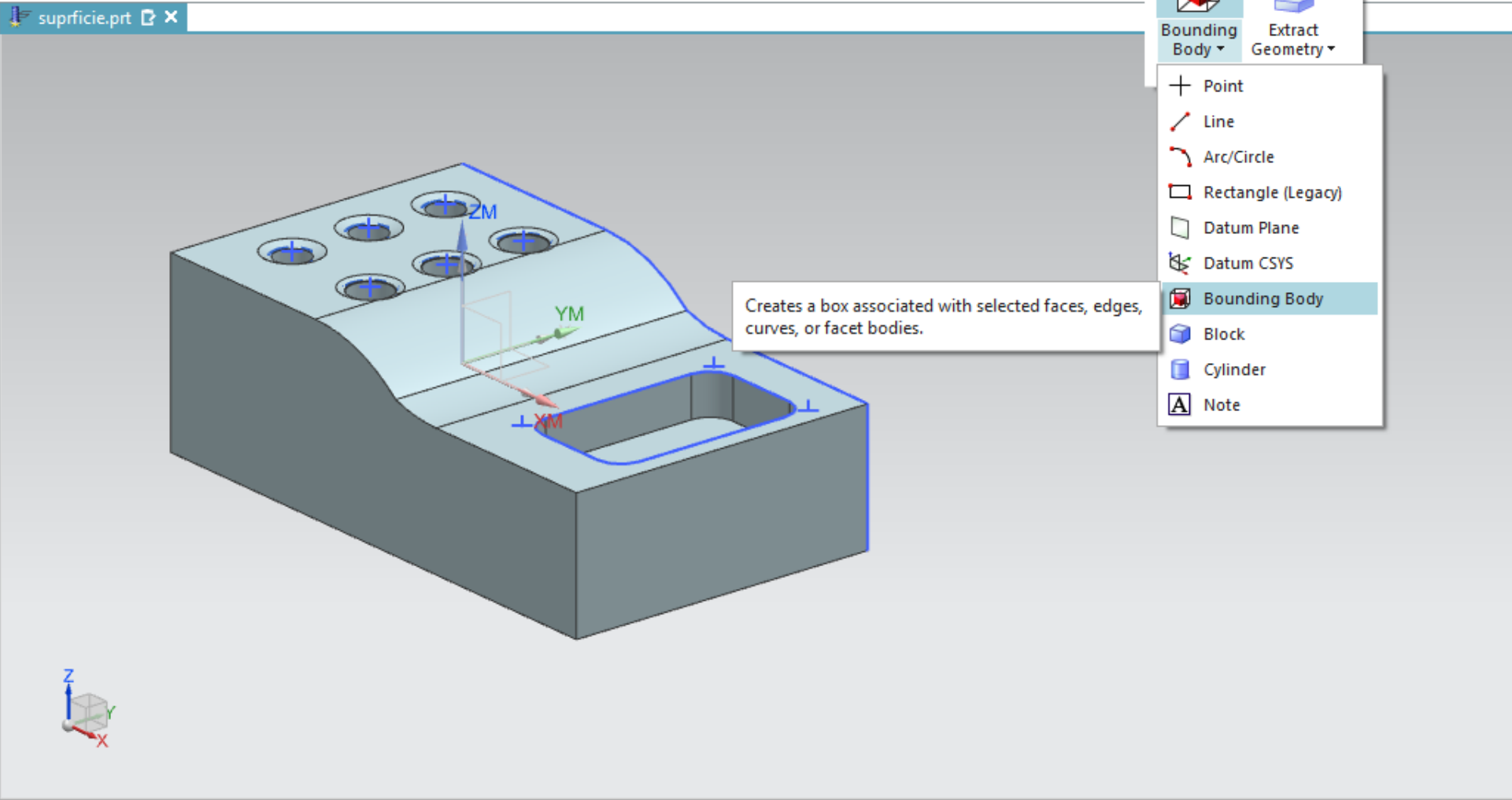
Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu No Selection Filter Entire Assembly

Operation Navigator - Geometry

Name	Path	Tool
GEOMETRY		
Unused Items		
MCS_MILL		
WORKPIECE		

Dependencies ▼
 Details ▼



Bounding Body

Extract Geometry

- Point
- Line
- Arc/Circle
- Rectangle (Legacy)
- Datum Plane
- Datum CSYS
- Bounding Body**
- Block
- Cylinder
- Note

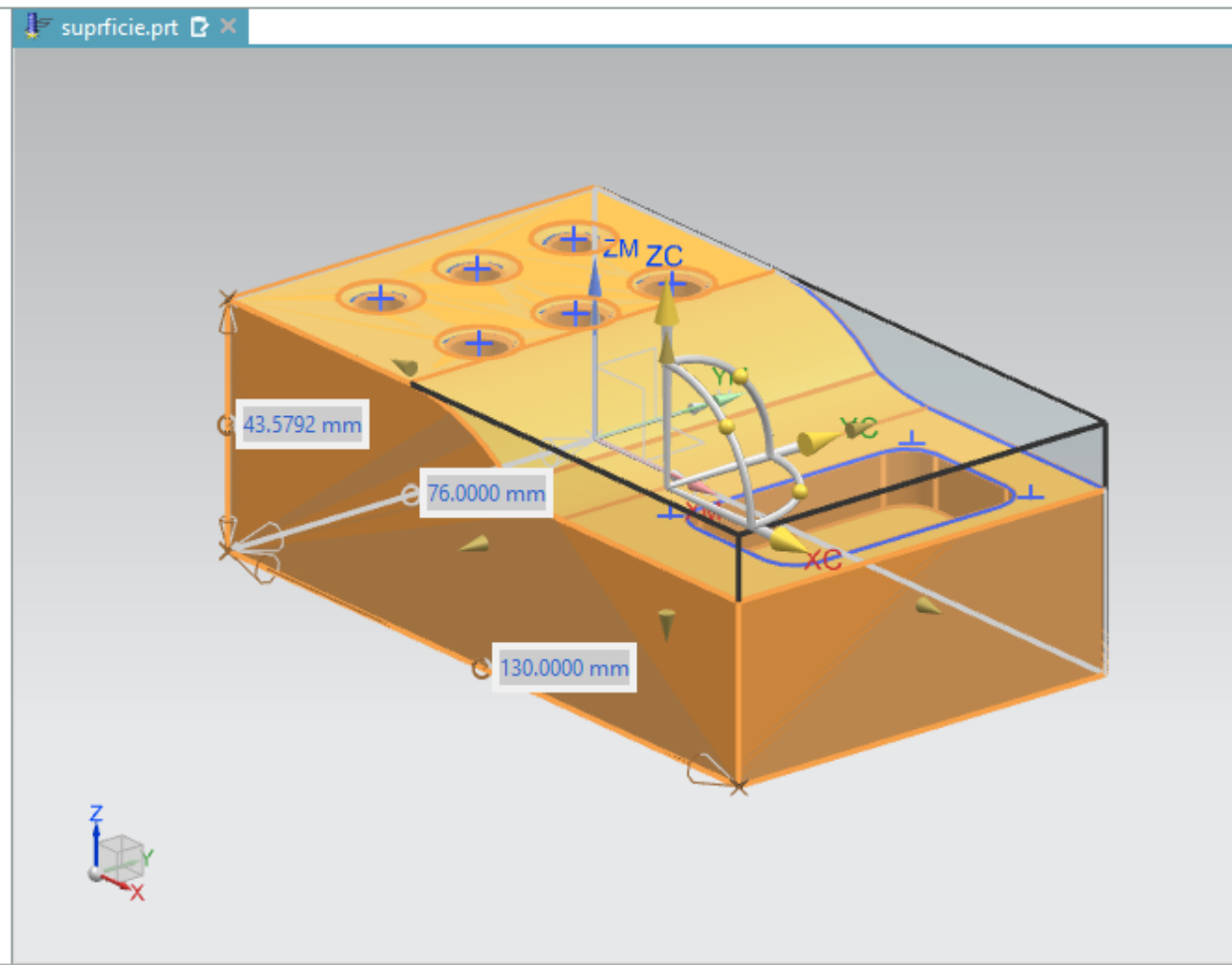
Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu Solid Body Entire Assembly Single Face Single Curve Single Body

Operation Navigator - Geometry

Name	Path	Tool
GEOMETRY		
Unused Items		
MCS_MILL		
WORKPIECE		

Dependencies Details



Bounding Body

Block

Object

Select Object (1)

Orientation

Reference: WCS

Specify Orientation

Parameters

Single Offset:

Offset: 0 mm

Size Rounding: 0

Position Rounding: 0

Settings

Preview: Show Result

< OK > Apply Cancel

Select faces, edges, curves, points, solid bodies or facet bodies

Solid Body selected

Find a Command

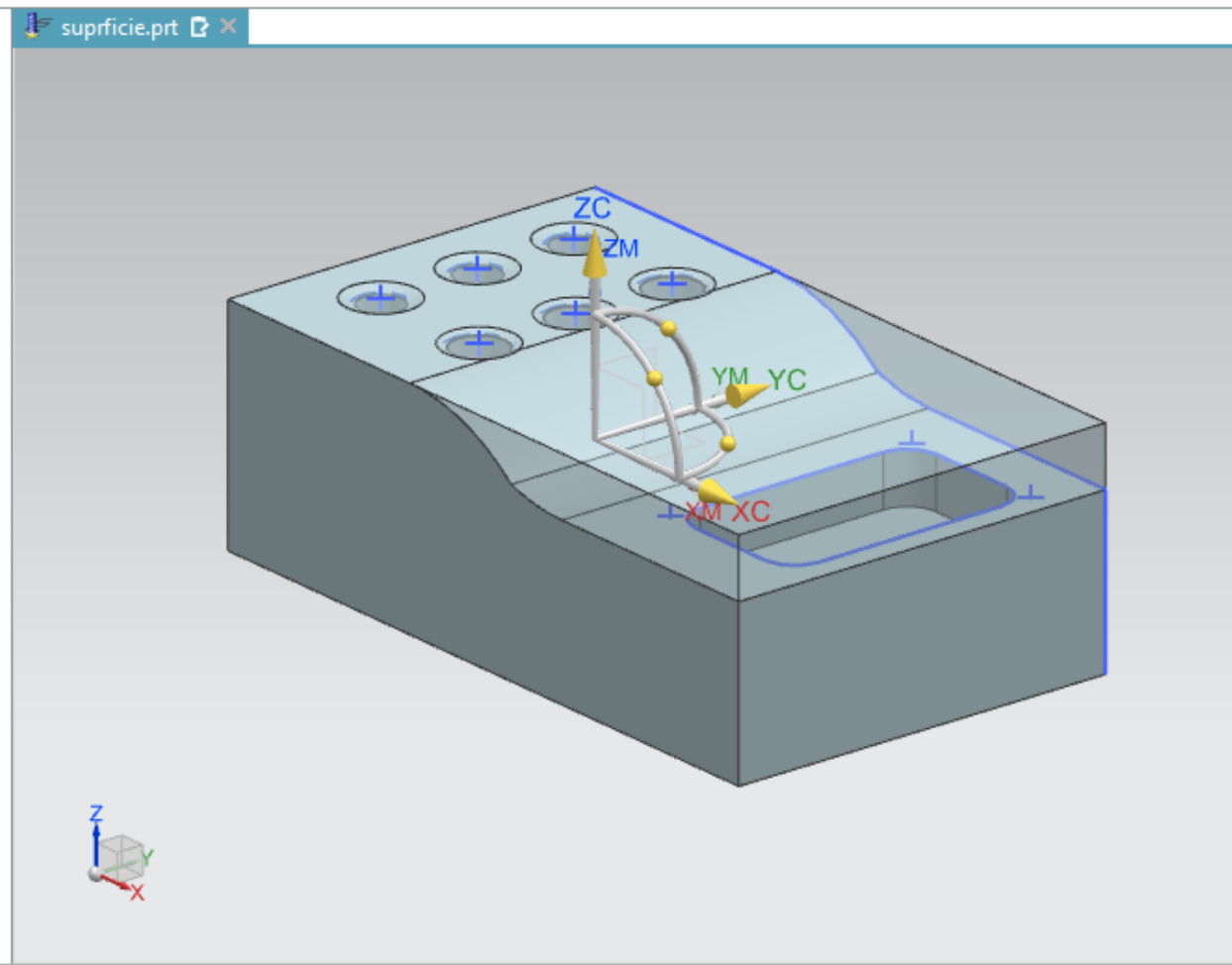
Create Tool, Create Geometry, Create Operation, Properties, Generate Tool Path, Verify Tool Path, Simulate Machine, Post Process, Shop Documentation, More, Display, Animation (Speed: 5), Workpiece (Show 3D IPW), Analysis, Geometry, Synchronous Modeling, Feature, Tools

Menu, Solid Body, Entire Assembly, Single Face, Single Curve, Single Body

Operation Navigator - Geometry

Name	Path	Tool
GEOMETRY		
Unused Items		
MCS_MILL		
WORKPIECE		

Dependencies, Details



Bounding Body

Block

Object: * Select Object (0)

Orientation: Reference: WCS, Specify Orientation

Parameters: Single Offset, Offset: 0 mm, Size Rounding: 0, Position Rounding: 0

Settings: Preview, Show Result

OK, Apply, Cancel

Select faces, edges, curves, points, solid bodies or facet bodies

File Home Assemblies Curve Analysis View Render Tools Application

Find a Command

Speed 5

Show 3D IPW

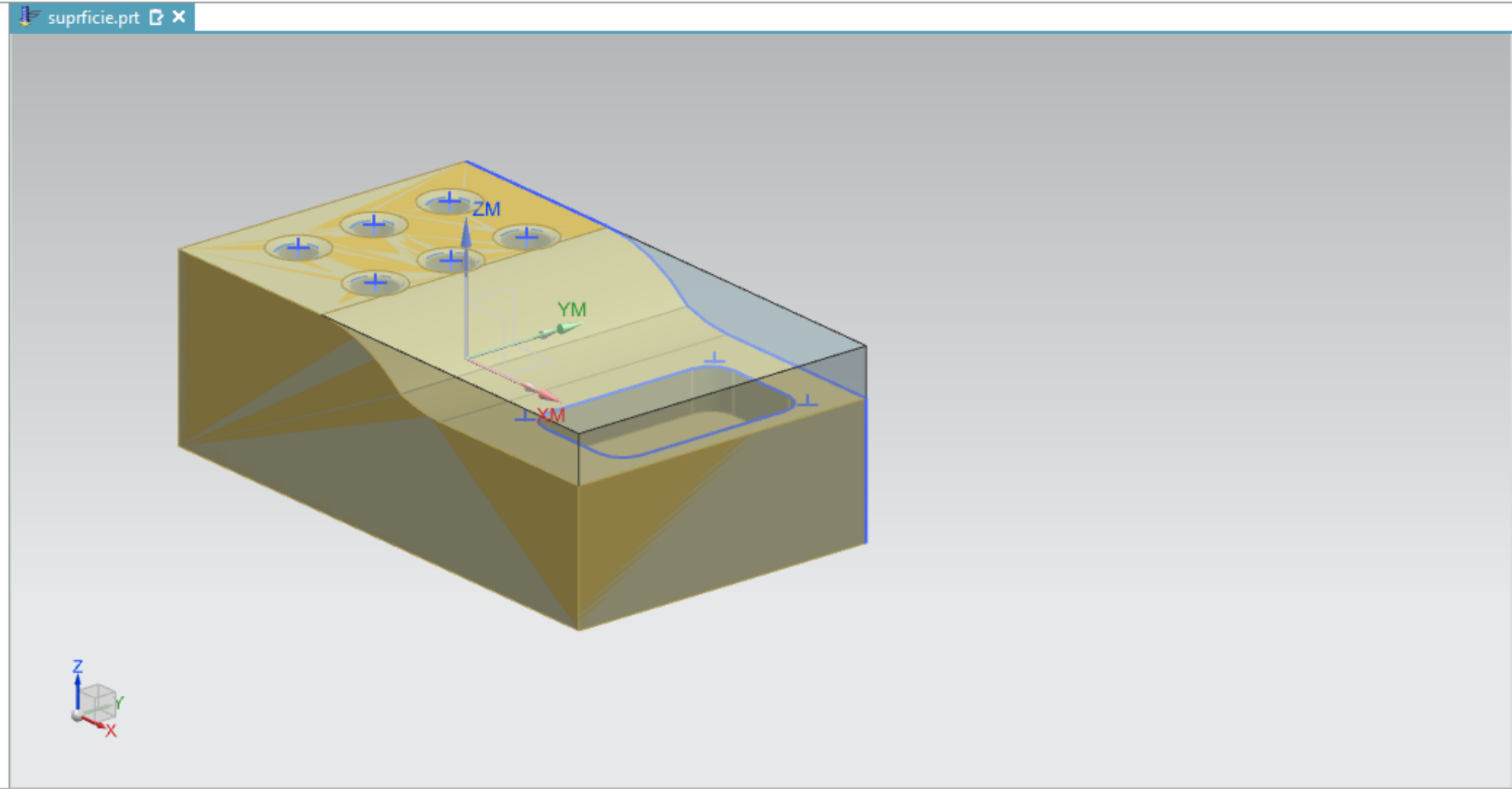
Analysis Geometry Synchronous Modeling Feature Tools

Menu Solid Body Entire Assembly

Operation Navigator - Geometry

Name	Path	Tool
GEOMETRY		
Unused Items		
MCS_MILL		
WORKPIECE		

- Edit...
- Cut
- Copy
- Delete
- Rename
- Generate
- Parallel Generate
- Replay
- Post Process
- Insert
- Object
- Tool Path
- Workpiece
- Information
- Properties



Create Tool | Create Geometry | Create Operation | Properties | Generate Tool Path | Verify Tool Path | Simulate Machine | Post Process | Shop Documentation | More | Display | Animation | Workpiece | Analysis | Geometry | Synchronous Modeling | Feature | Tools

Blank Geometry

Geometry

* Select Object (0)

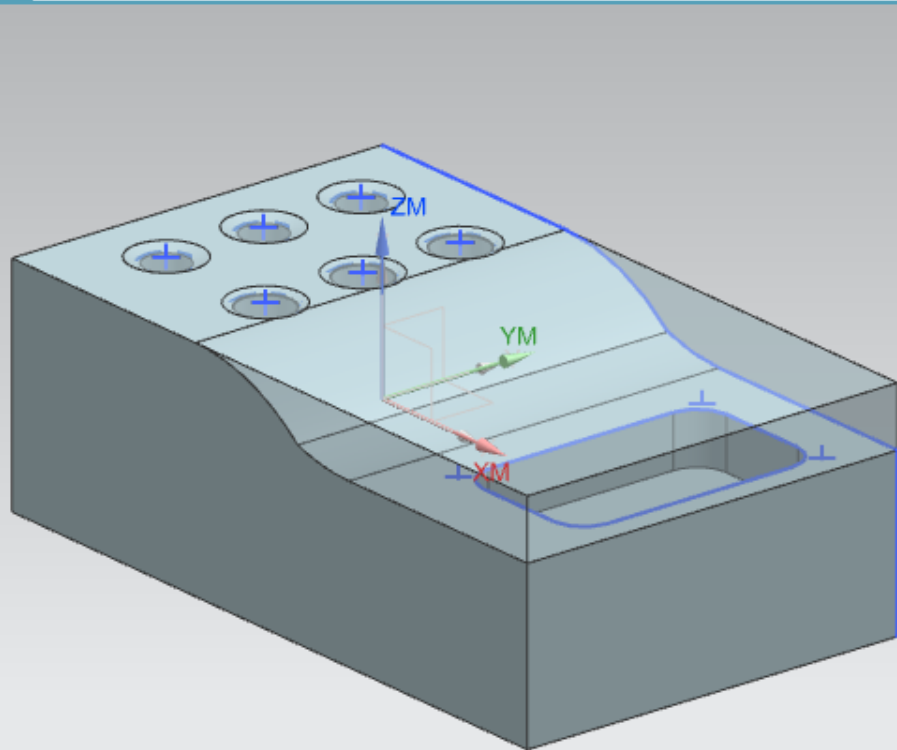
Add New Set

Set	Number Of Items
New	0

IPW Position

OK Cancel

Single Face | Single Curve | Single Body



Operation Navigator

Name

GEOMETRY

Unused

MCS_M

WC

Dependencies

Details

Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Blank Geometry

Geometry

✓ Select Object (1)

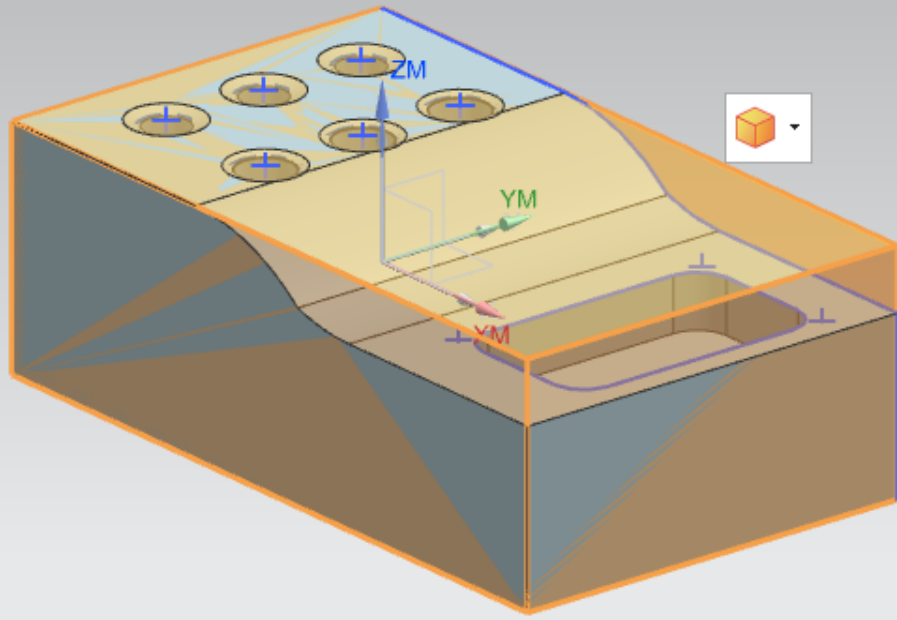
Add New Set

Set	Number Of Items
1	1

Topology

IPW Position

OK Cancel



Create Tool | Create Geometry | Create Operation | Properties | Generate Tool Path | Verify Tool Path | Simulate Machine | Post Process | Shop Documentation | More | Display | Animation (Speed: 5) | Workpiece (Show 3D IPW) | Analysis | Geometry | Synchronous Modeling | Feature | Tools

Blank Geometry

Geometry

✓ Select Object (1)

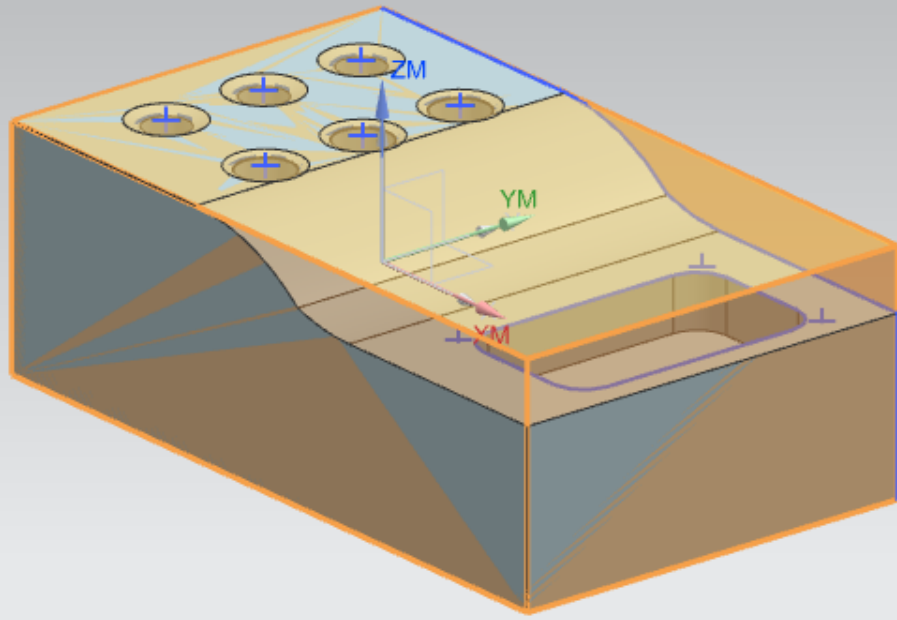
Add New Set

Set	Number Of Items
1	1

Topology

IPW Position

OK Cancel







Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools



Menu Single Face Single Curve Single Body

Workpiece


Geometry

Specify Part  


Specify Blank  

Specify Check  

Offsets

Part Offset 

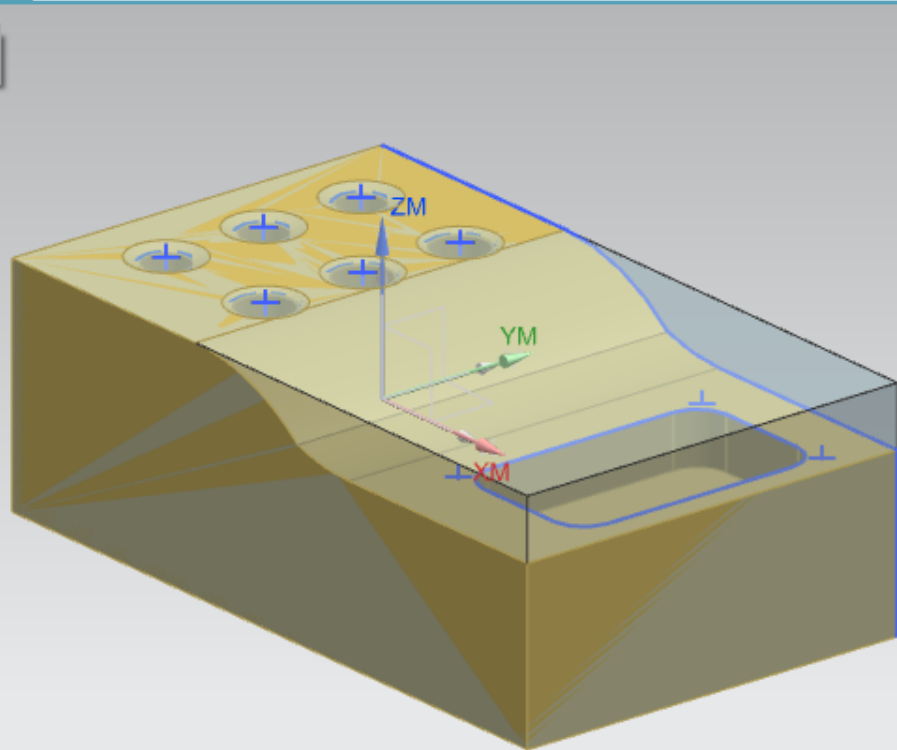
Description

Material: CARBON STEEL 

Layout and Layer

OK Cancel

Display



Current: WORKPIECE

Create Tool | Create Geometry | Create Operation | Properties | Generate Tool Path | Verify Tool Path | Simulate Machine | Post Process | Shop Documentation | More | Display | Animation (Speed: 5) | Workpiece (Show 3D IPW) | Analysis | Geometry | Synchronous Modeling | Feature | Tools

Menu | Single Face | Single Curve | Single Body

Workpiece

Geometry

- Specify Part
- Specify Blank
- Specify Check

Offsets

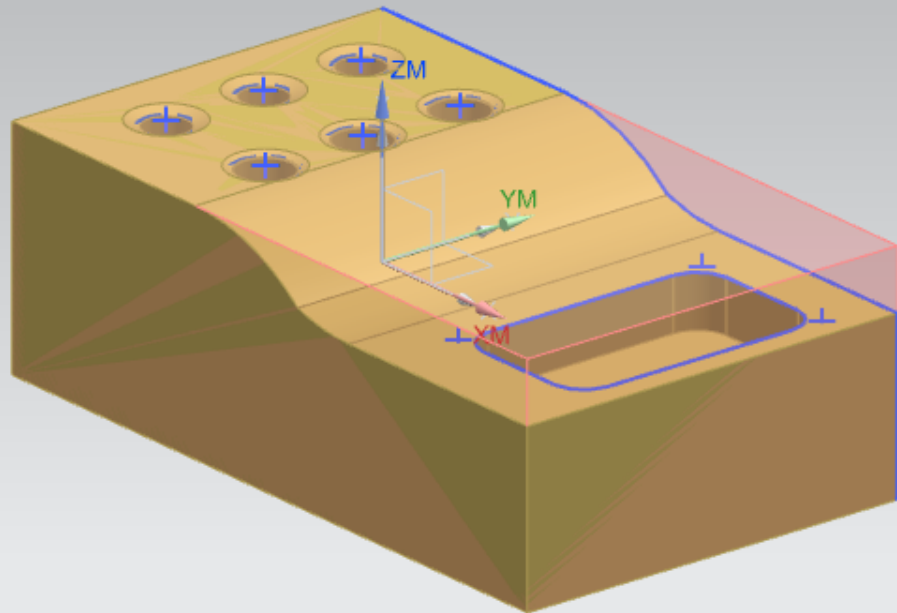
Part Offset: 0.0000

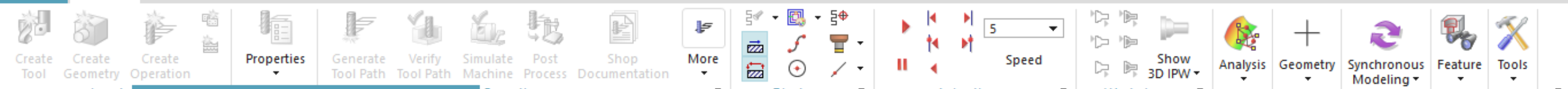
Description

Material: CARBON STEEL

Layout and Layer

OK Cancel





Move Face

Face

✓ Select Face (1)

Face Finder

Results Settings Reference

Found

Offset

Transform

Motion Distance-Angle

✓ Specify Distance Vector

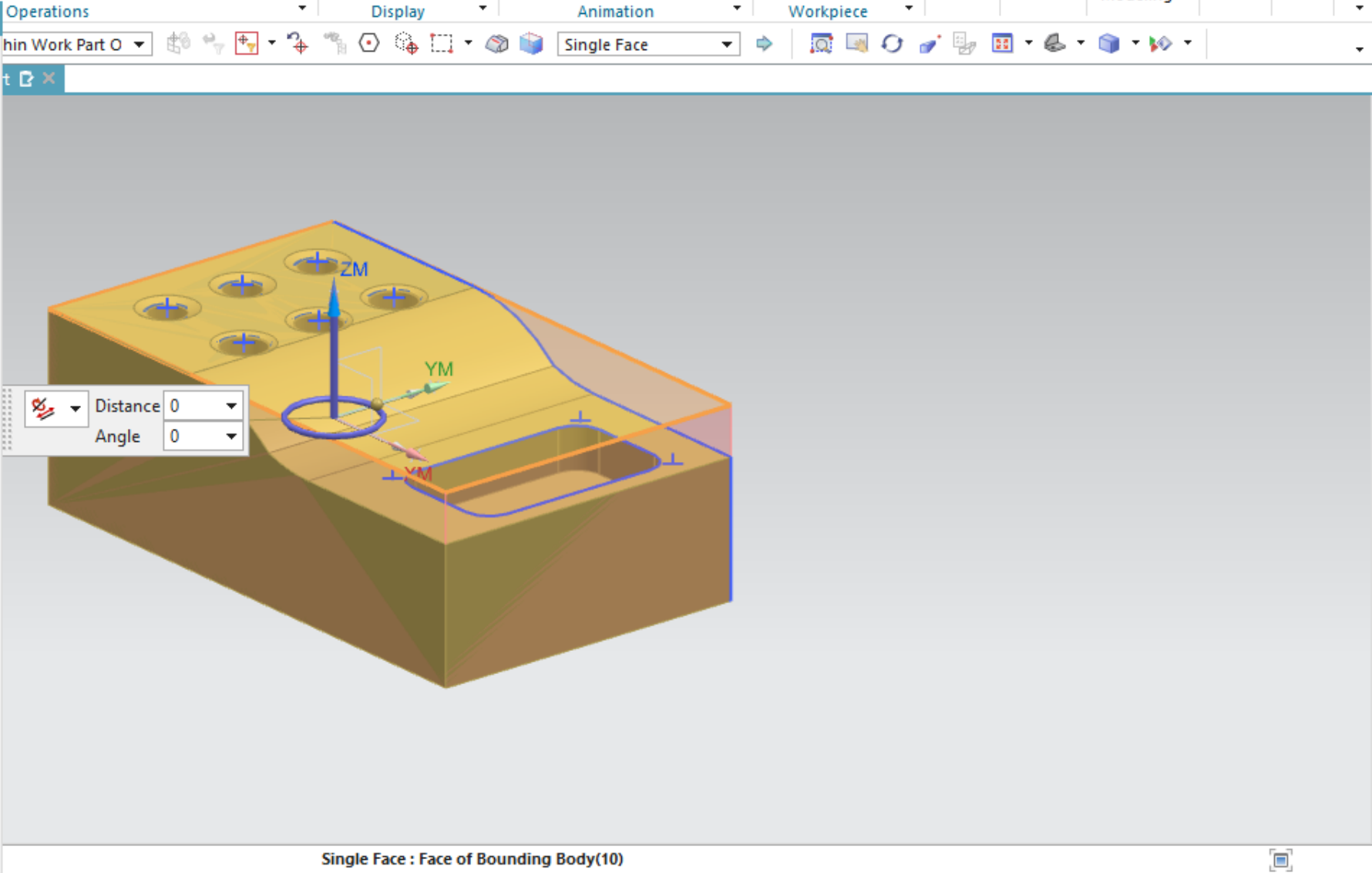
* Specify Pivot Point

Distance 0 mm

Angle 0 °

Preview Show Result

OK Apply Cancel



Create Tool | Create Geometry | Create Operation | Properties | Generate Tool Path | Verify Tool Path | Simulate Machine | Post Process | Shop Documentation | More | Display | Animation (Speed: 5) | Workpiece (Show 3D IPW) | Analysis | Geometry | Synchronous Modeling | Feature | Tools

Move Face

Face

* Select Face (0)

Face Finder

Results Settings Reference

Found

Transform

Motion: Distance-Angle

Specify Distance Vector

Specify Pivot Point

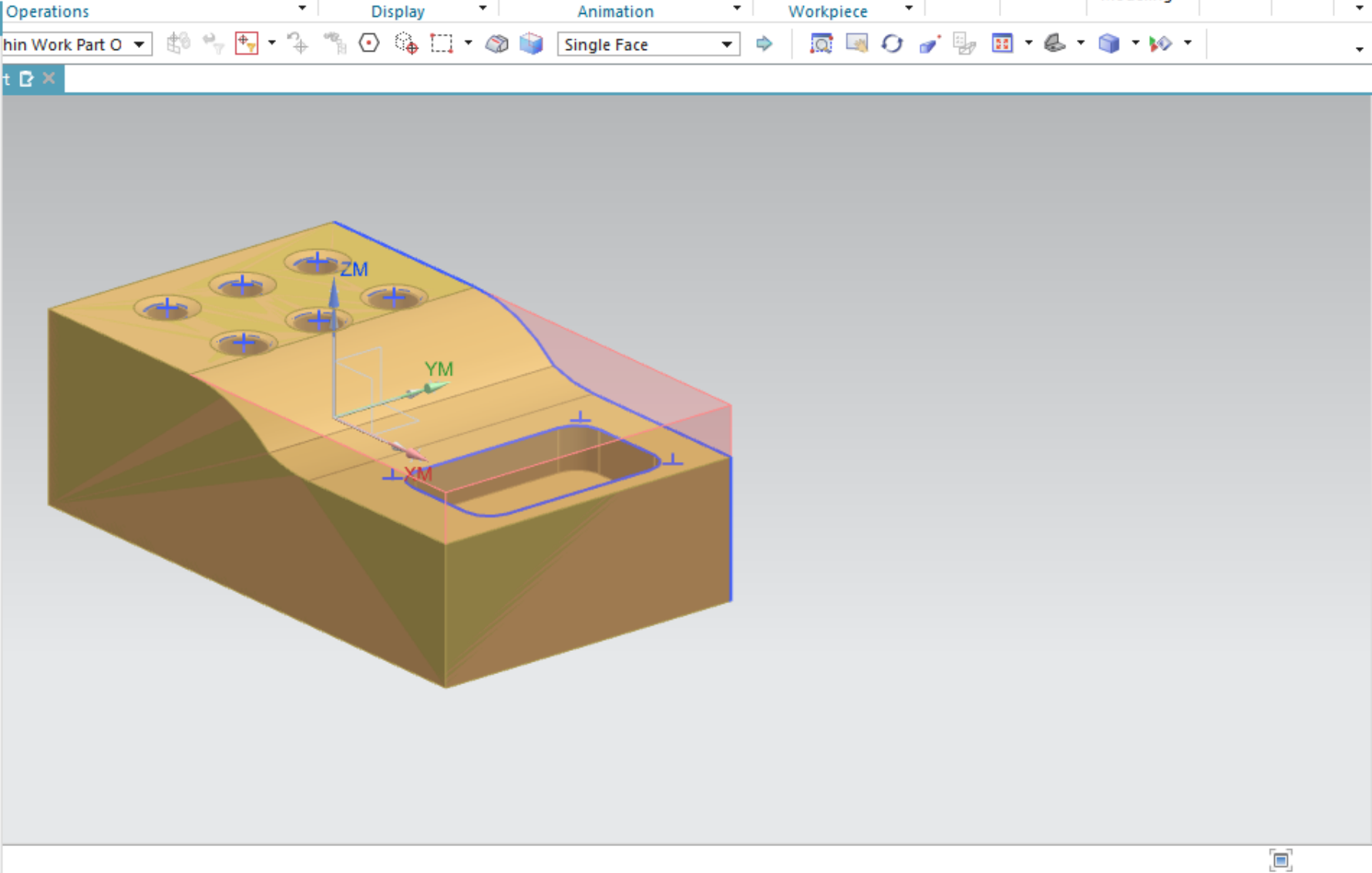
Distance: 1 mm

Angle: 0 °

Preview

Show Result

OK Apply Cancel





Move Face

Face

✓ Select Face (1)

Face Finder

Results Settings Reference

Found

- Offset

Transform

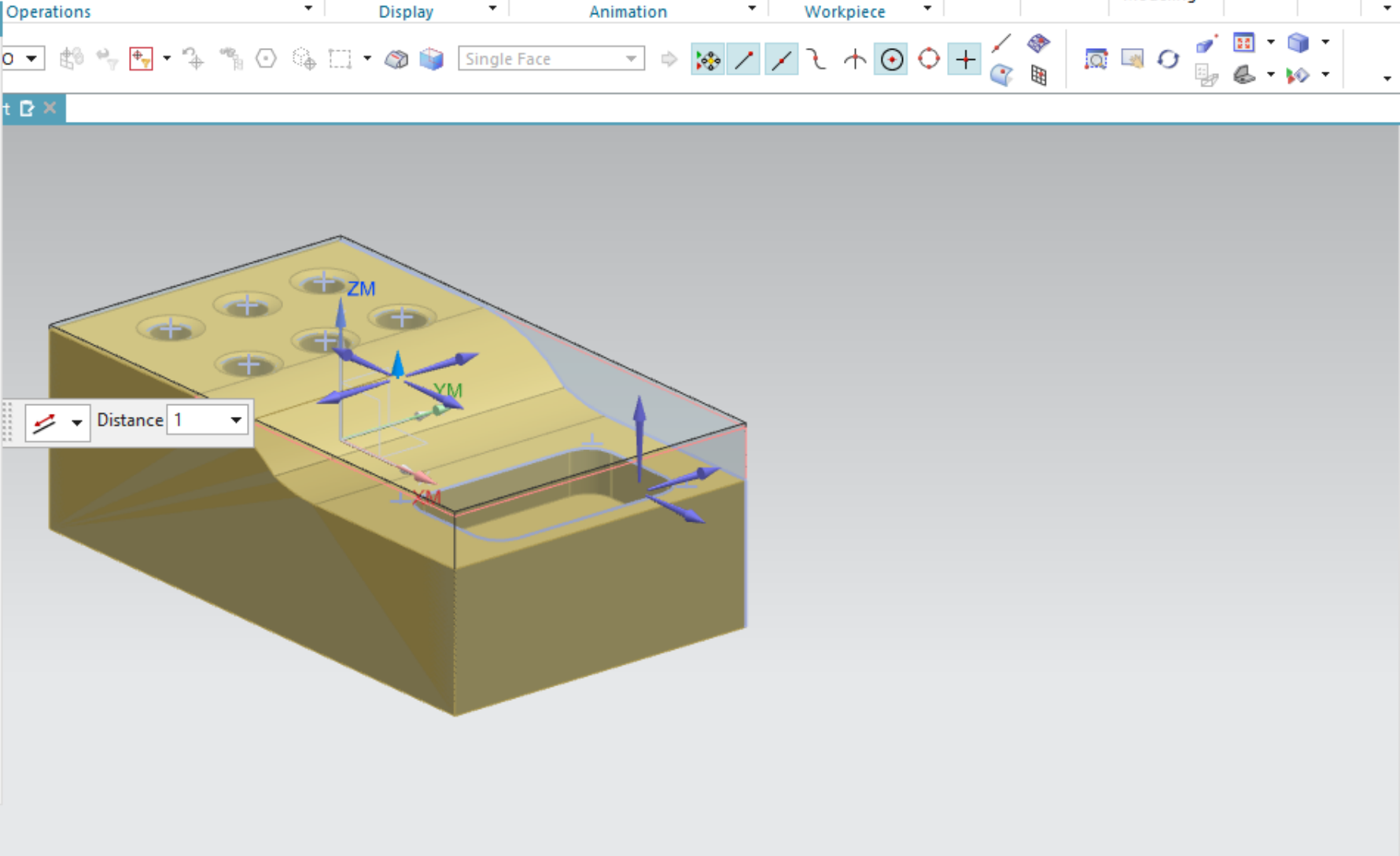
Motion Distance

✓ Specify Vector

Distance 1 mm

Preview Show Result

< OK > Apply Cancel



Create Tool | Create Geometry | Create Operation | Properties | Generate Tool Path | Verify Tool Path | Simulate Machine | Post Process | Shop Documentation | More | Display | Animation | Workpiece | Analysis | Geometry | Synchronous Modeling | Feature | Tools

Move Face

Face

* Select Face (0)

Face Finder

Results Settings Reference

Found

Transform

Motion Distance

* Specify Vector

Distance 0 mm

Preview Show Result

OK Apply Cancel

