



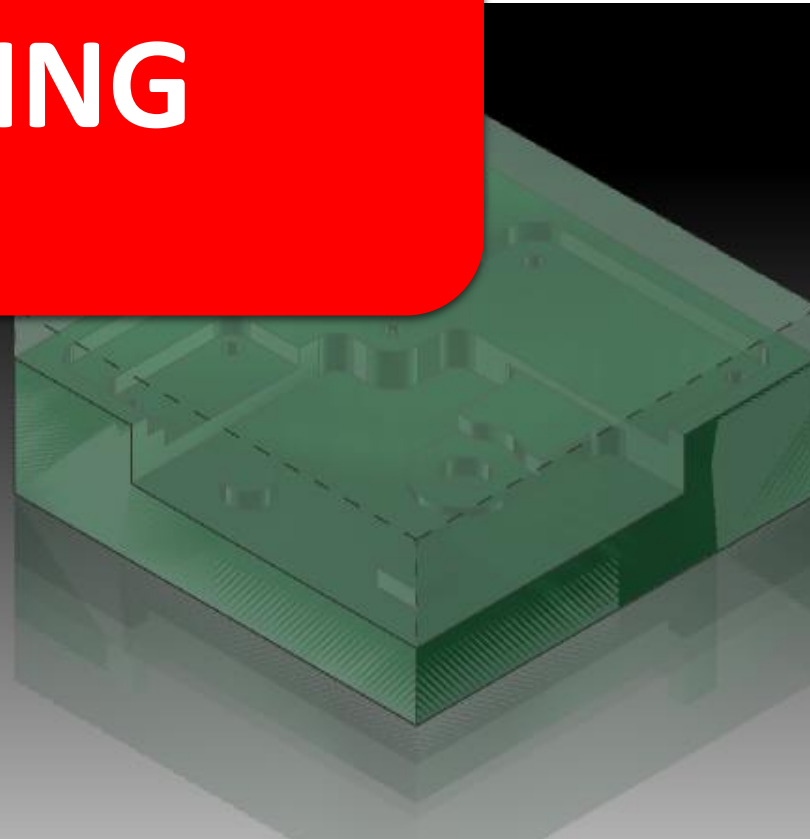
PLM Software

**SIEMENS**

**NX**

# FACE MILLING

Edgard Gonçalves Cardoso  
[www.professoredgard.com](http://www.professoredgard.com)



File View Render Assemblies Analysis Tools Application

Find a Command

Window Zoom 0.5272

Show and Hide Move to Layer Layer Settings Visibility

Edit Section Clip Section More

Preferences Edit Object Display Export Image Visualization

True Shading Global Materials Object Materials Inherit Shaded Background True Shading Setup

Show Shadows Show Floor Reflection Show Floor Grid Scene Lighting 1 True Shading Editor...

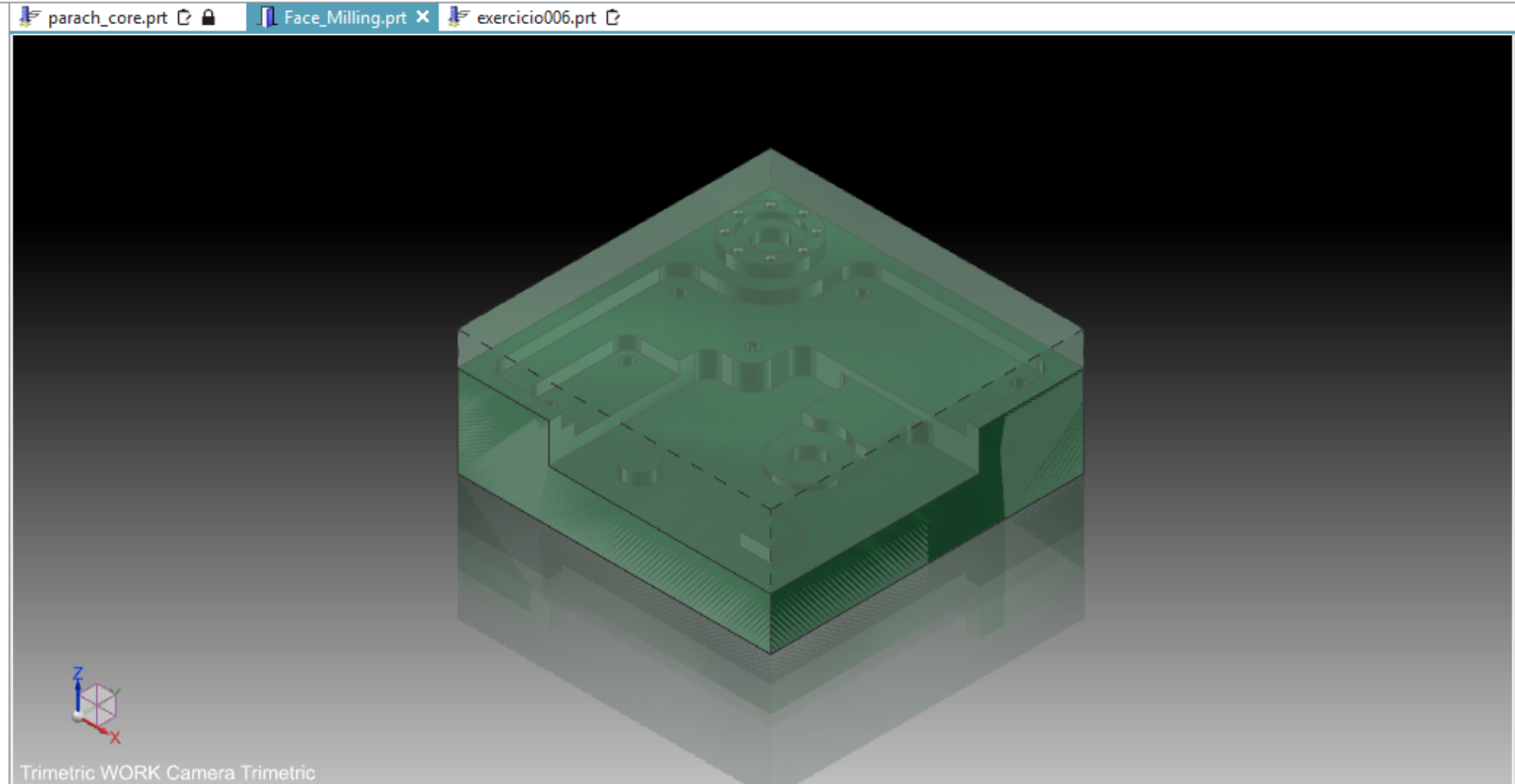
Menu No Selection Filter Entire Assembly

Assembly Navigator

Descriptive Part Name	Info	R.
Sections		
Face_Milling		

Preview

Dependencies



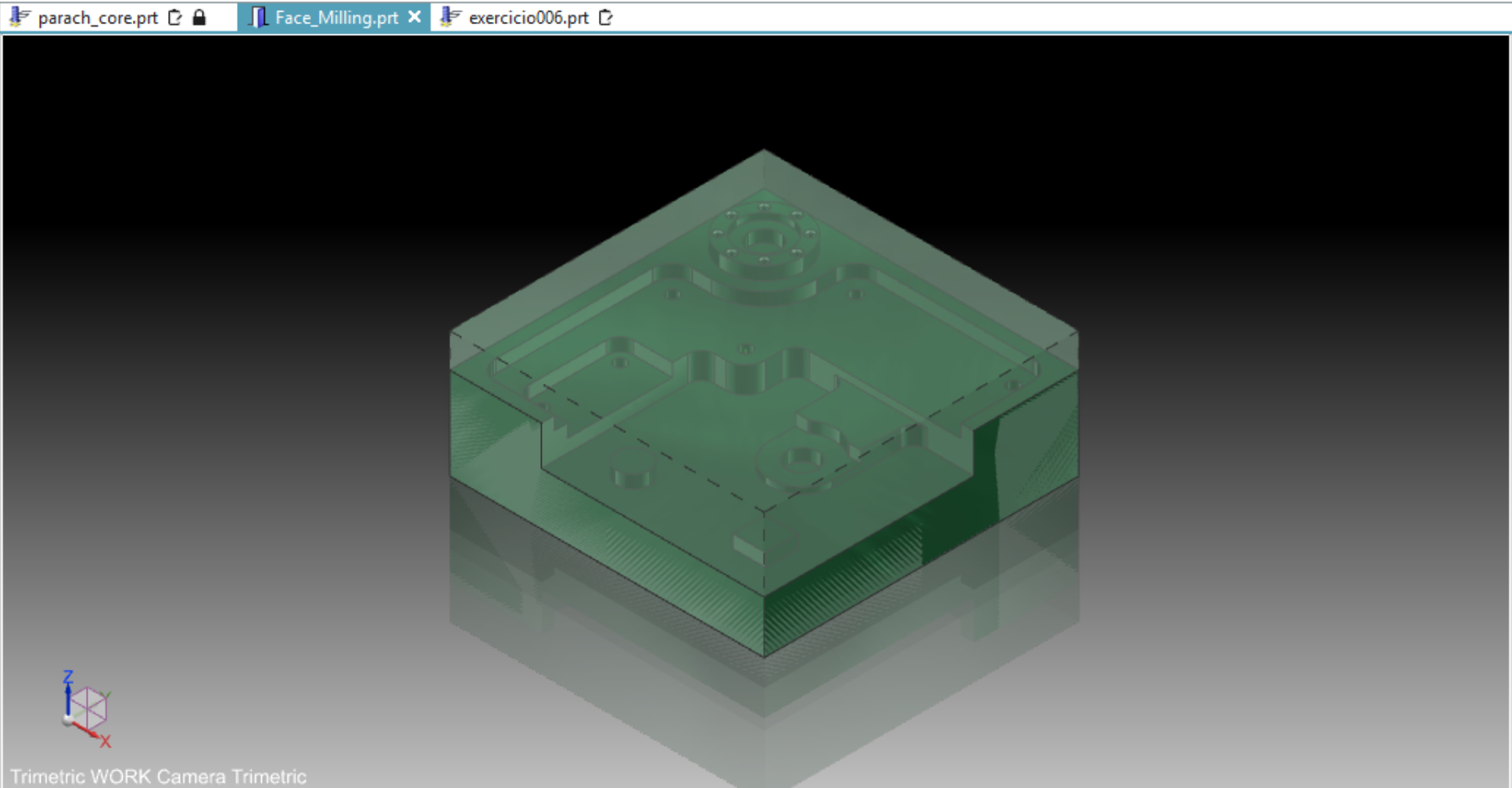
Select objects and use MB3, or double-click an object

Modeling Sheet Metal Shape Studio Drafting Layout DMU Assemblies  
Manufacturing Additive Manufacturing Line Designer  
Pre/Post Motion Design  
Electrical Mechanical Logical  
Mold Progressive Die Electrode Design Engineering Die  
Process Specific

Assembly Navigator

Descriptive Part Name	Info	R.
Sections		
☑ Face_Milling		

Preview Dependencies



Select objects and use MB3, or double-click an object

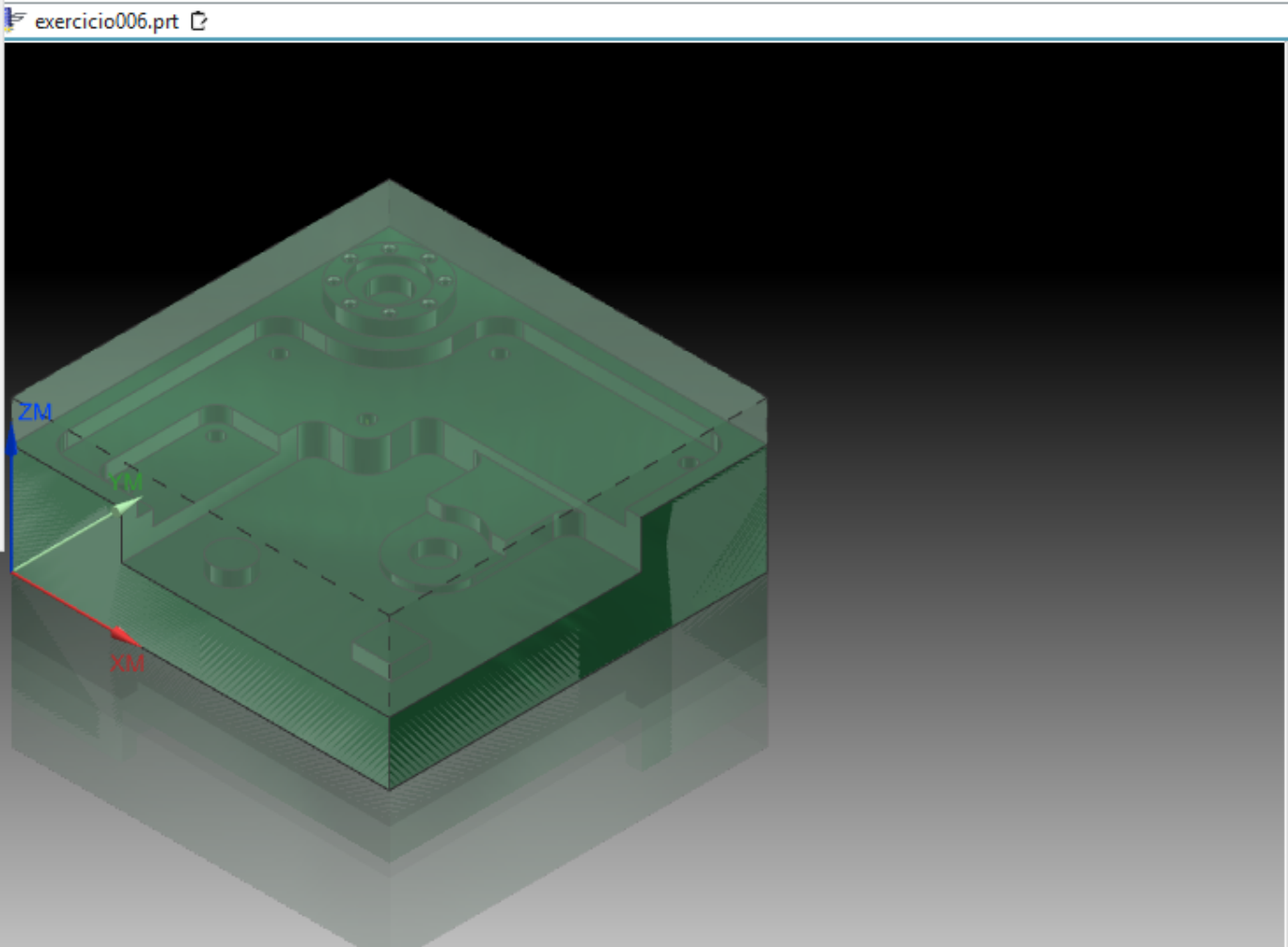
File Home Assemblies Curve Analysis  
Create Tool Create Geometry Create Operation Properties Generate Tool Path  
Insert Actions  
Menu No Selection

Machining Environment  
CAM Session Configuration  
cam\_express  
cam\_express\_part\_planner  
cam\_general  
cam\_library  
cam\_native\_rm\_library  
cam\_part\_planner\_library  
cam\_part\_planner\_mrl  
cam\_teamcenter\_library  
Browse for a Configuration File

Assembly Navigator  
Descriptive Part Name Info R.  
Sections  
Face\_Milling  
Preview  
Dependencies

CAM Setup to Create  
mill\_planar  
mill\_contour  
mill\_multi-axis  
mill\_multi\_blade  
mill\_rotary  
hole\_making  
turning  
wire\_edm  
Browse for a Setup Part  
OK Cancel

NX 12 - Manufacturing  
SIEMENS  
Find a Command  
Display Animation Workpiece  
Speed 5  
Show 3D IPW  
Analysis Geometry Synchronous Modeling Feature Tools



Choose a CAM Setup to initialize



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

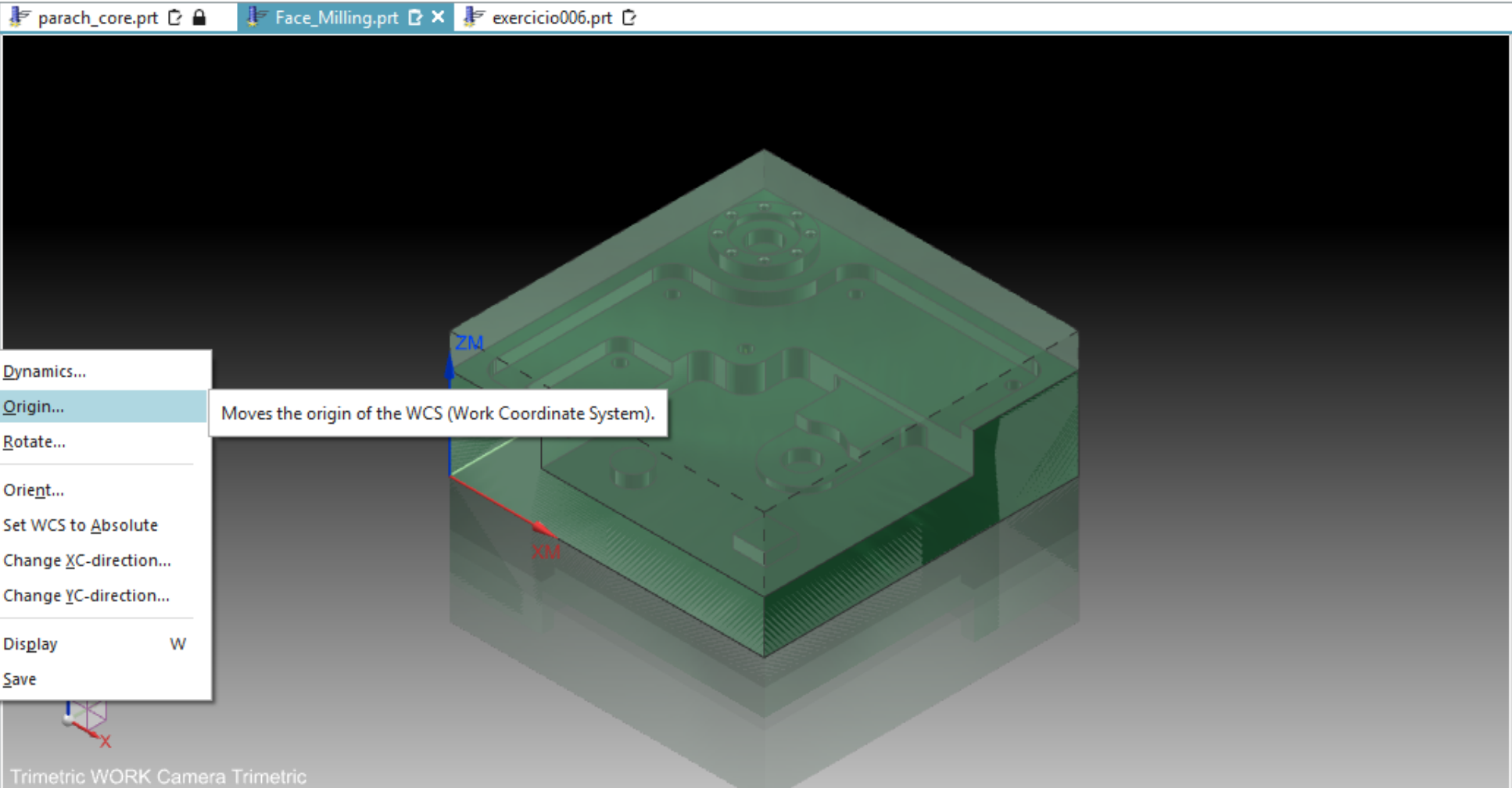
Insert Actions Operations Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu No Selection Filter Entire Assembly

- File
- Edit
- View
- Insert
- Format**
  - Layer Settings... Ctrl+L
  - Layer Visible in View...
  - Layer Category...
  - Move to Layer...
  - Copy to Layer...
  - WCS**
    - Dynamics...
    - Origin...**
    - Rotate...
    - Orient...
    - Set WCS to Absolute
    - Change XC-direction...
    - Change YC-direction...
    - Display W
    - Save
- Tools
- Assemblies
- Information
- Analysis
- Preferences
- Window
- Help

Dependencies

Details



Edit objects in the Operation Navigator or use Insert to create new objects

File Home Assemblies Curve Analysis

Create Tool Create Geometry Create Operation Properties Generate Tool Path

Insert Actions

Menu No Selection

Point on Face

Face

Select Object (0)

Location on Face

U Parameter 0.5

V Parameter 0.5

Output Coordinates

Reference WCS

XC 1075.4759172 mm

YC 357.84505761 mm

ZC 1098.7435346 mm

Offset

Offset Option None

OK Cancel

Find a Command

Speed 5

Display Animation Workpiece

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Operation Navigator - Machine Tool

Name	Path
GENERIC_MACHINE	
Unused Items	

Dependencies

Details

exercicio006.prt

Face of Body(0)

QuickPick

- Face of Block(14)
- Face of Body(0)
- Face of Body(0)
- Face of Body(0)
- Face of Simple Hole(5)
- Face of Simple Hole(5)
- Face of Block(14)
- Face of Body(0)

Trimetric WORK Camera Trimetric

File Home Assemblies Curve Analysis

Create Tool Create Geometry Create Operation Properties Generate Tool Path

Insert Actions

Menu No Selection

Point on Face

Face

Select Object (1)

Location on Face

U Parameter: 0.5

V Parameter: 0.5

Output Coordinates

Reference: WCS

XC: 76.2000000001 mm

YC: 76.2000000001 mm

ZC: 50.800 mm

Offset

Offset Option: None

OK Cancel

Operation Navigator - Machine Tool

Name	Path
GENERIC_MACHINE	
Unused Items	

Dependencies

Details

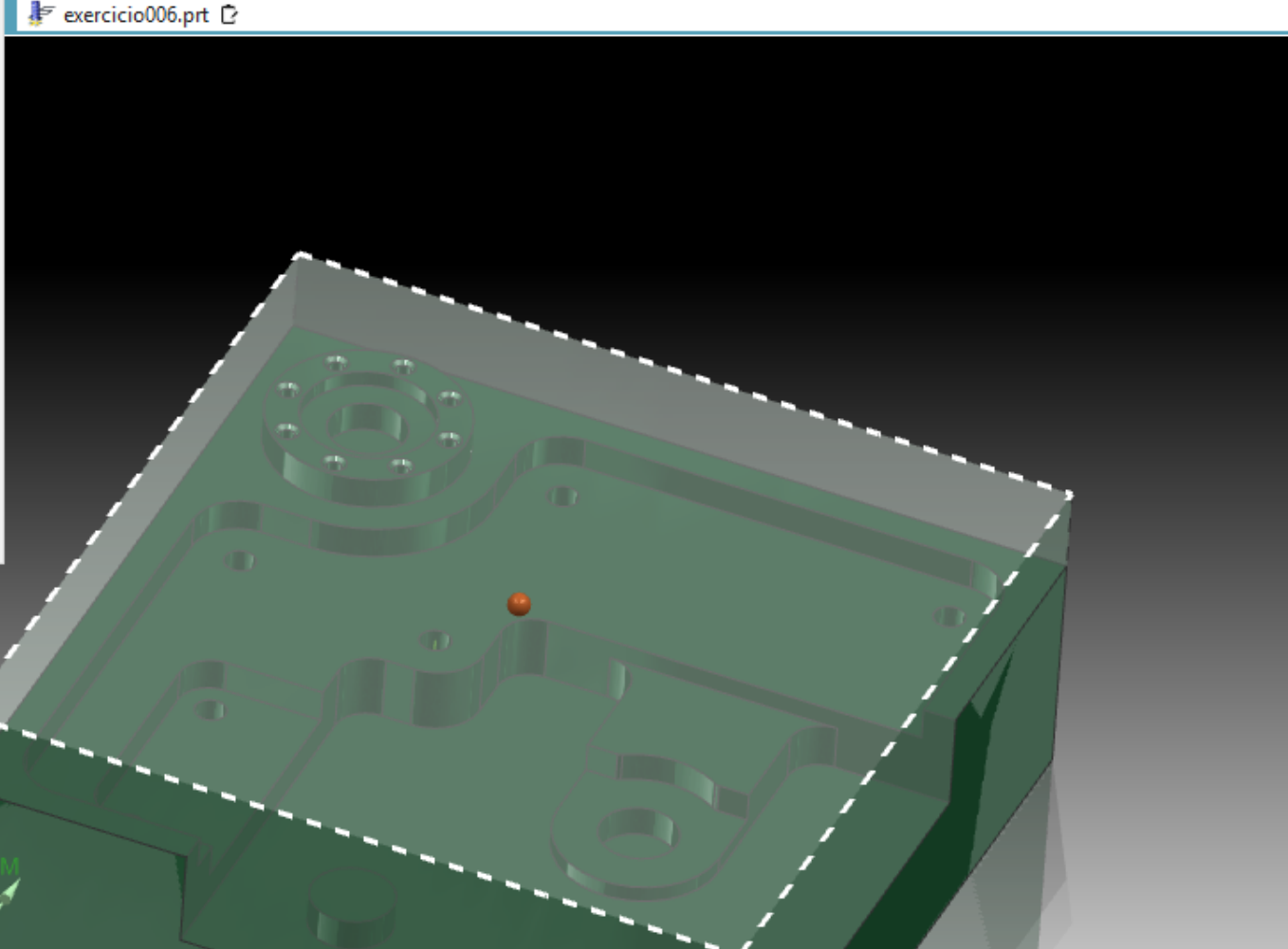
Find a Command

Display Animation Workpiece

Speed: 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools



Specify surface parameter percentages

Non-associative point on surface specified





File Home Assemblies Curve Analysis View Render Tools Application

Switch Window Window

NX 12 - Manufacturing

SIEMENS

Find a Command

Tutorials

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		

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

Dependencies

Details

parach\_core.prt Face\_Milling.prt exercicio006.prt

Trimetric WORK Camera Trimetric

total 1

File Home Assemblies Curve Analysis

Create Tool Create Geometry Create Operation Properties Generate Tool Path

Insert Actions

Dynamic

Reference CSYS

Reference WCS

Manipulator

Specify Orientation

OK Cancel

Find a Command

Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed 5

Show 3D IPW

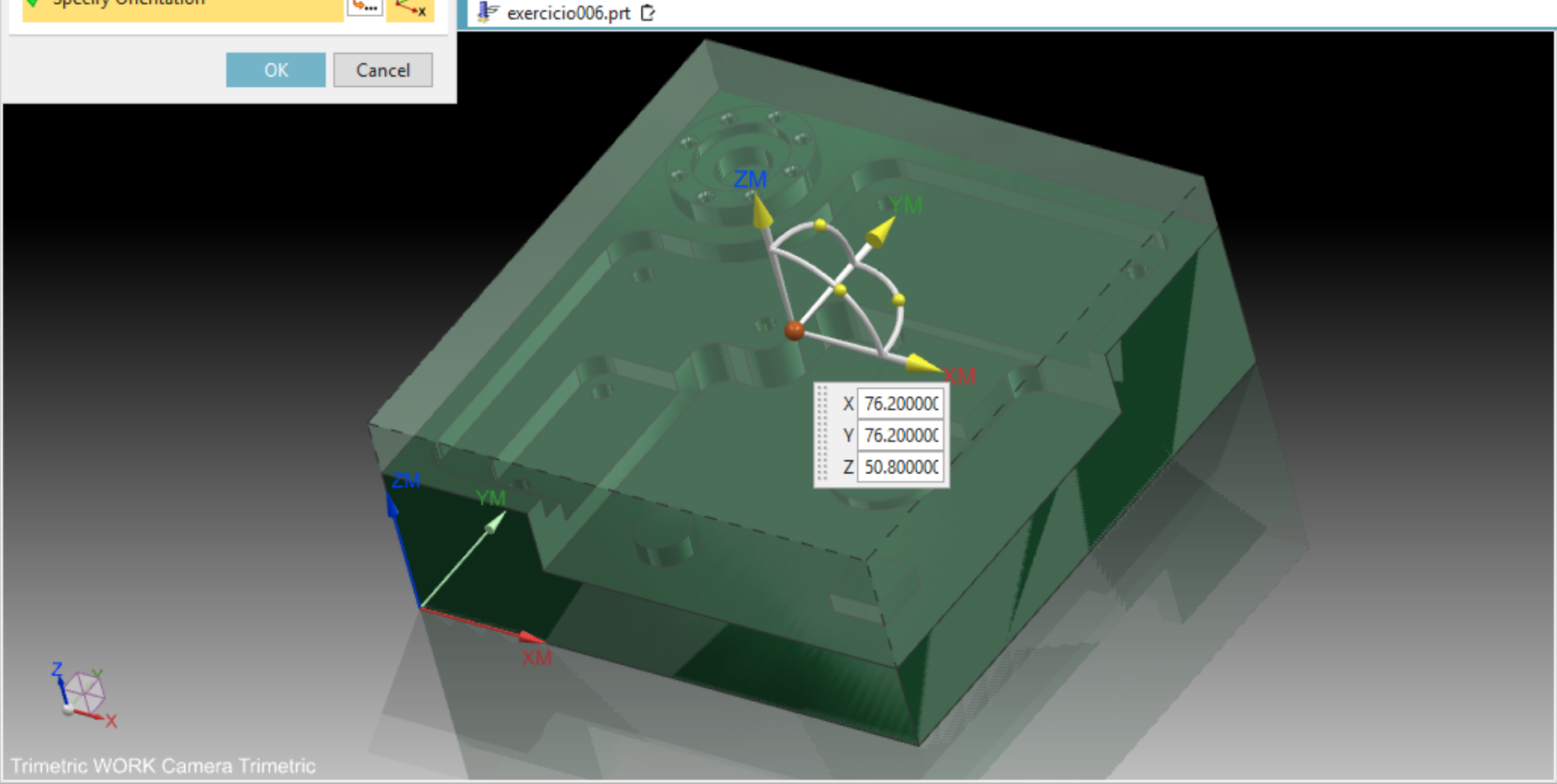
Menu

Operation Navigator - Geometry

Name	Path	Tool
GEOMETRY		
Unused Items		
MCS_MILL		

Dependencies

Details





File Home Assemblies Cur

Create Tool Create Geometry Create Operation

Insert Action

Menu

Geometry

Geometry WORKPIECE

Specify Part

Specify Face Boundaries

Specify Check Body

Specify Check Boundaries

Tool

Tool Axis

Path Settings

Method MILL\_ROUGH

Cut Pattern Zig

Stepover % Tool Flat

Percent of Flat Diameter 75.0000

Blank Distance 3.0000

Depth Per Cut 0.0000

Final Floor Stock 0.0000

Cutting Parameters

Non Cutting Moves

Feeds and Speeds

Machine Control

Program

Operation

Find a Command

More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed 5

Show 3D IPW

Single Face Single Body

Operation Navigator - Geometry

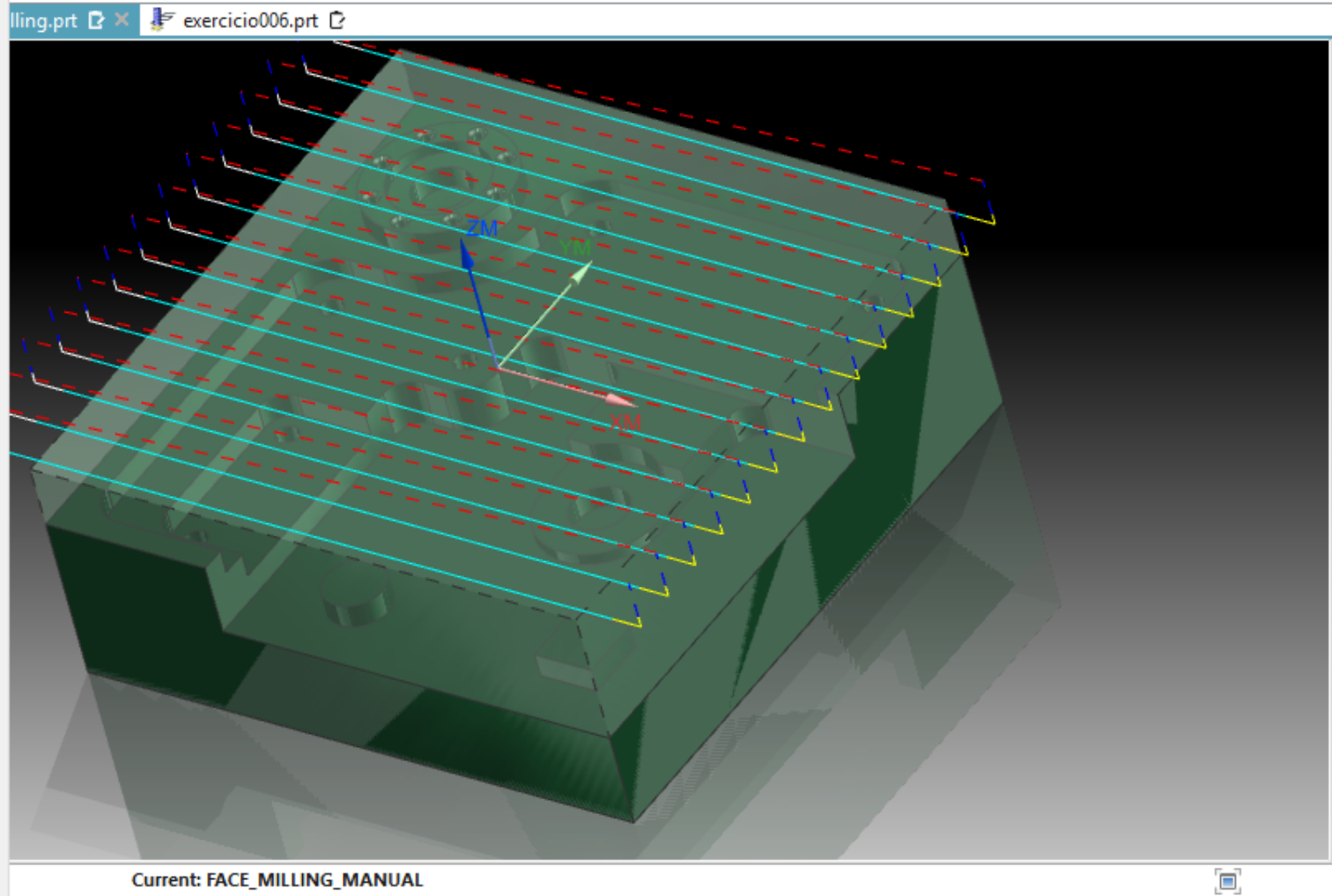
Name

GEOMETRY

- Unused Items
- MCS\_MILL
- WORKPIECE
- FACE\_MILLING\_M...

Dependencies

Details



File Home Assemblies Cur

Create Tool Create Geometry Create Operation

Insert Action

Create Operation

Type: mill\_planar

Operation Subtype

Location

Program: PROGRAM

Tool: FRESA\_16 (Milling Toc)

Geometry: WORKPIECE

Method: MILL\_ROUGH

Name: FACE\_MILLING

OK Apply Cancel

Operation Navigator - Geometry

Name

GEOMETRY

- Unused Items
- MCS\_MILL
- WORKPIECE
- FACE\_MILLING\_M...

Dependencies

Details

Find a Command

More

Display

Animation

Workpiece

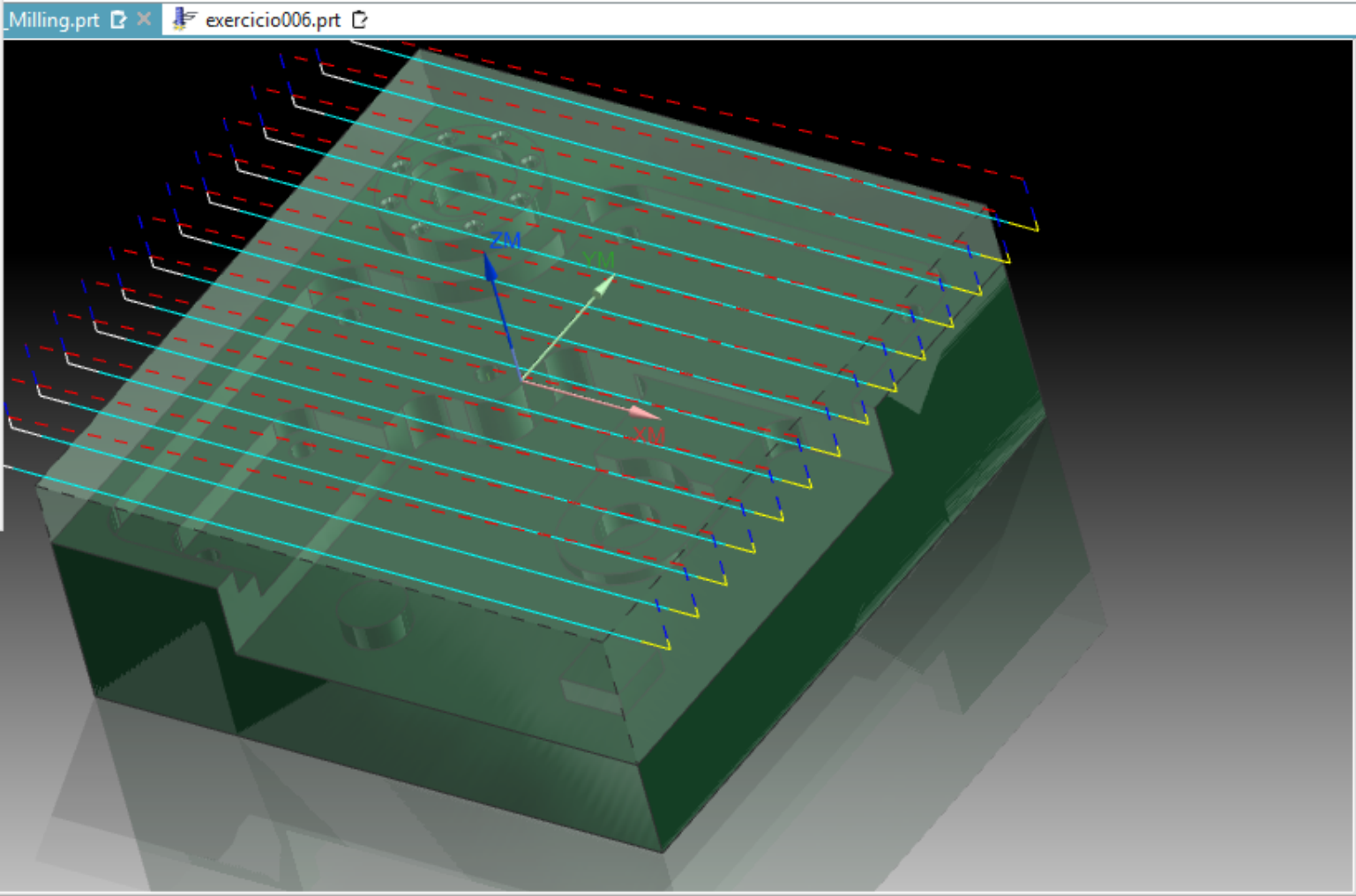
Analysis

Geometry

Synchronous Modeling

Feature

Tools



Choose type, subtype, location and specify operation name

File Home Assemblies Cur

Create Tool Create Geometry Create Operation

Insert Action

Geometry

Geometry WORKPIECE

Specify Part

Specify Cut Area

Specify Wall Geometry

Automatic Walls

Specify Check Body

Tool

Tool Axis

Path Settings

Method MILL\_ROUGH

Cut Pattern Mixed

Stepover % Tool Flat

Percent of Flat Diameter 75.0000

Blank Distance 3.0000

Depth Per Cut 0.0000

Final Floor Stock 0.0000

Cutting Parameters

Non Cutting Moves

Feeds and Speeds

Machine Control

Program

OK Cancel

Operation Navigator - Geometry

Name

GEOMETRY

- Unused Items
- MCS\_MILL
- WORKPIECE
- FACE\_MILLING\_M...
- FACE\_MILLING\_M...

Dependencies

Details

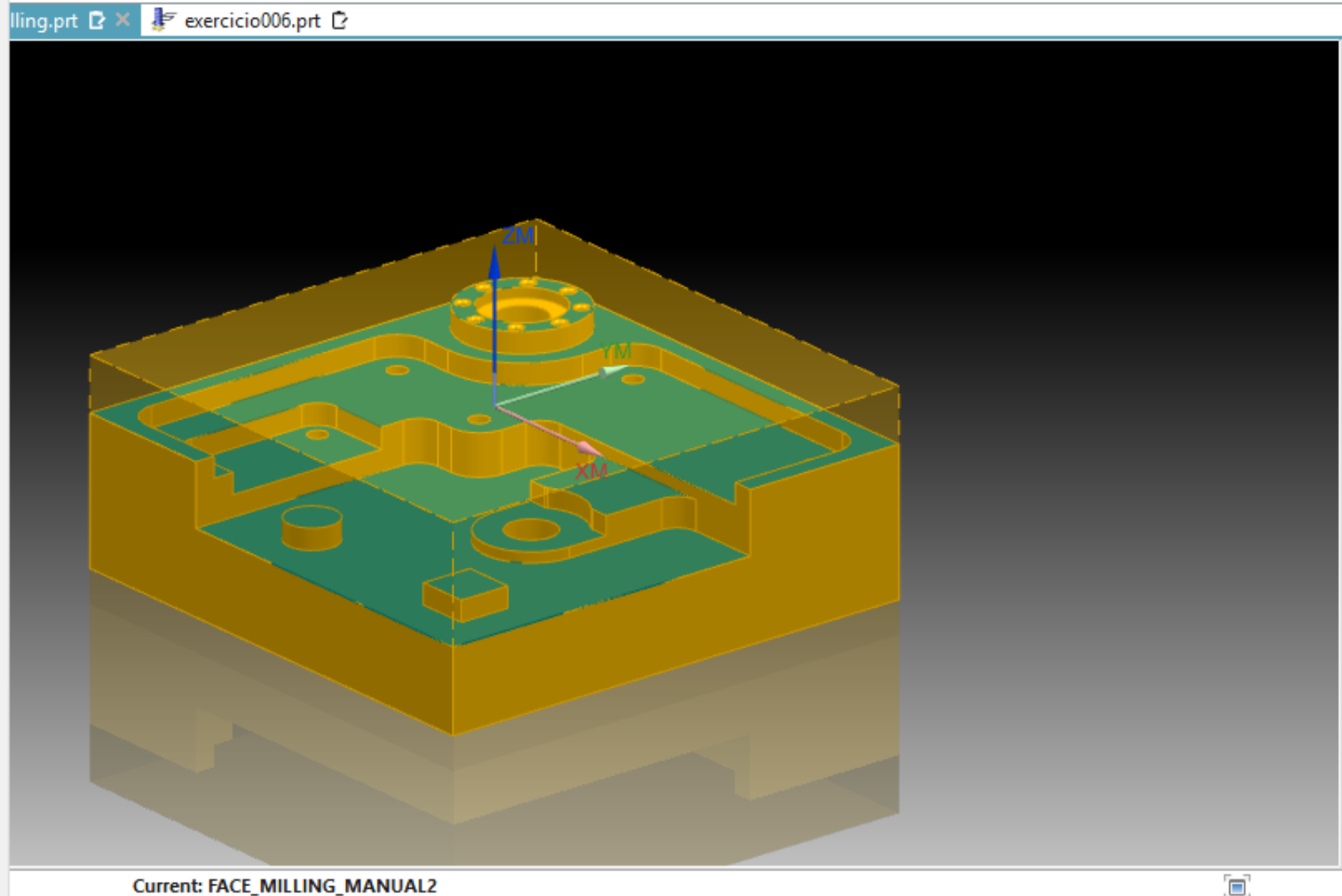
Find a Command

More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed 5

Show 3D IPW

Single Face Single Body



### Region Cut Patterns

Name	Region	Level
Regions		
Unused Items		
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_1_level_4	1	4
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_2_level_2	2	2
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_3_level_6	3	6
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_4_level_10	4	10
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_5_level_14	5	14
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_6_level_10	6	10
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_7_level_12	7	12
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_8_level_9	8	9

Gouge Checking  
Display Mode: All

OK Back Cancel

Application

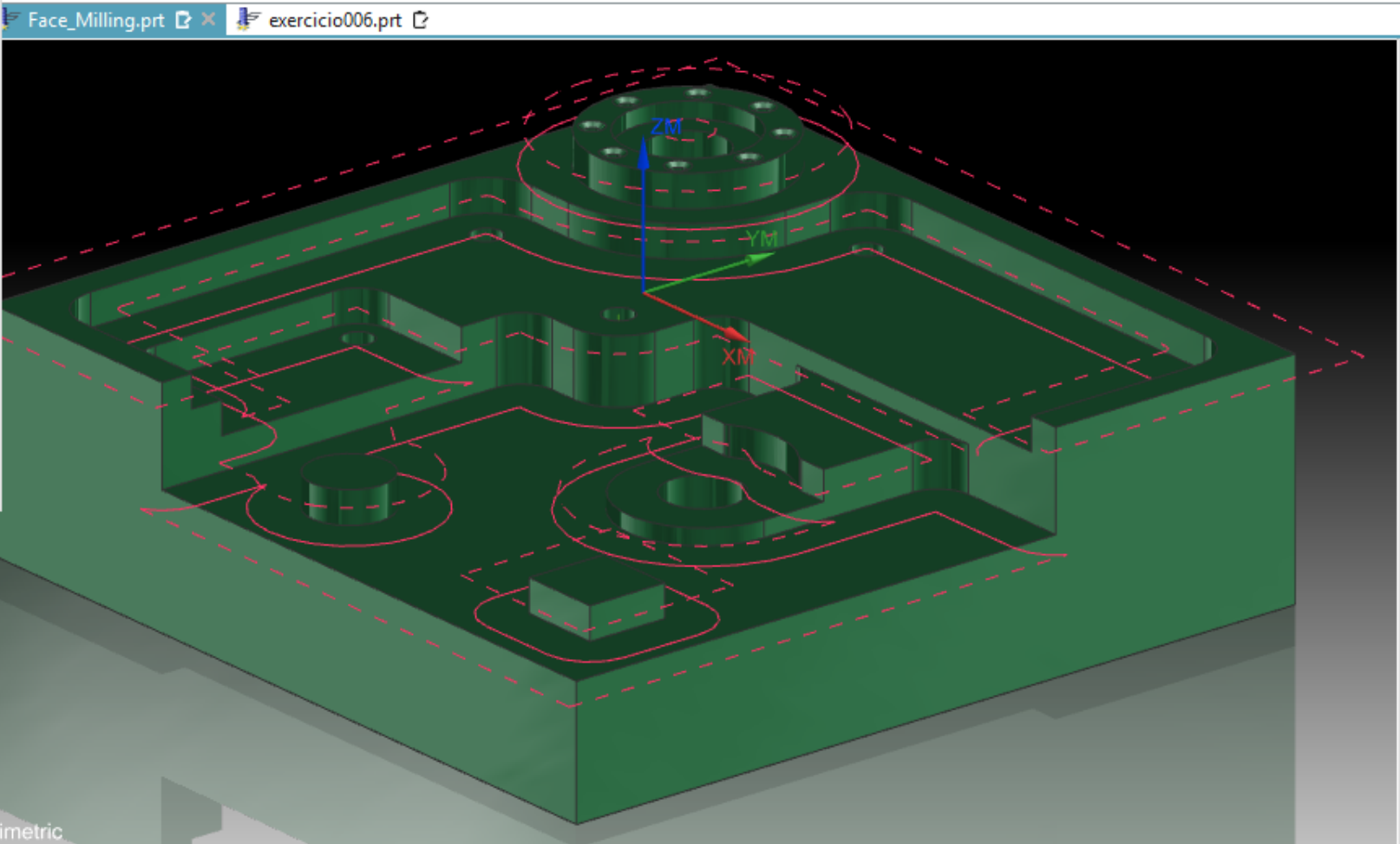
Find a Command

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

Speed 5

Show 3D IPW

Single Face Single Body



Create, copy, or edit the automatic methods or manual patterns for the regions



### Region Cut Patterns

Name	Region	Level
Regions		
Unused Items		
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_1_level_4	1	4
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_2_level_2	2	2
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_3_level_6	3	6
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_4_level_10	4	10
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_5_level_14	5	14
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_6_level_10	6	10
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_7_level_12	7	12
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> region_8_level_9	8	9

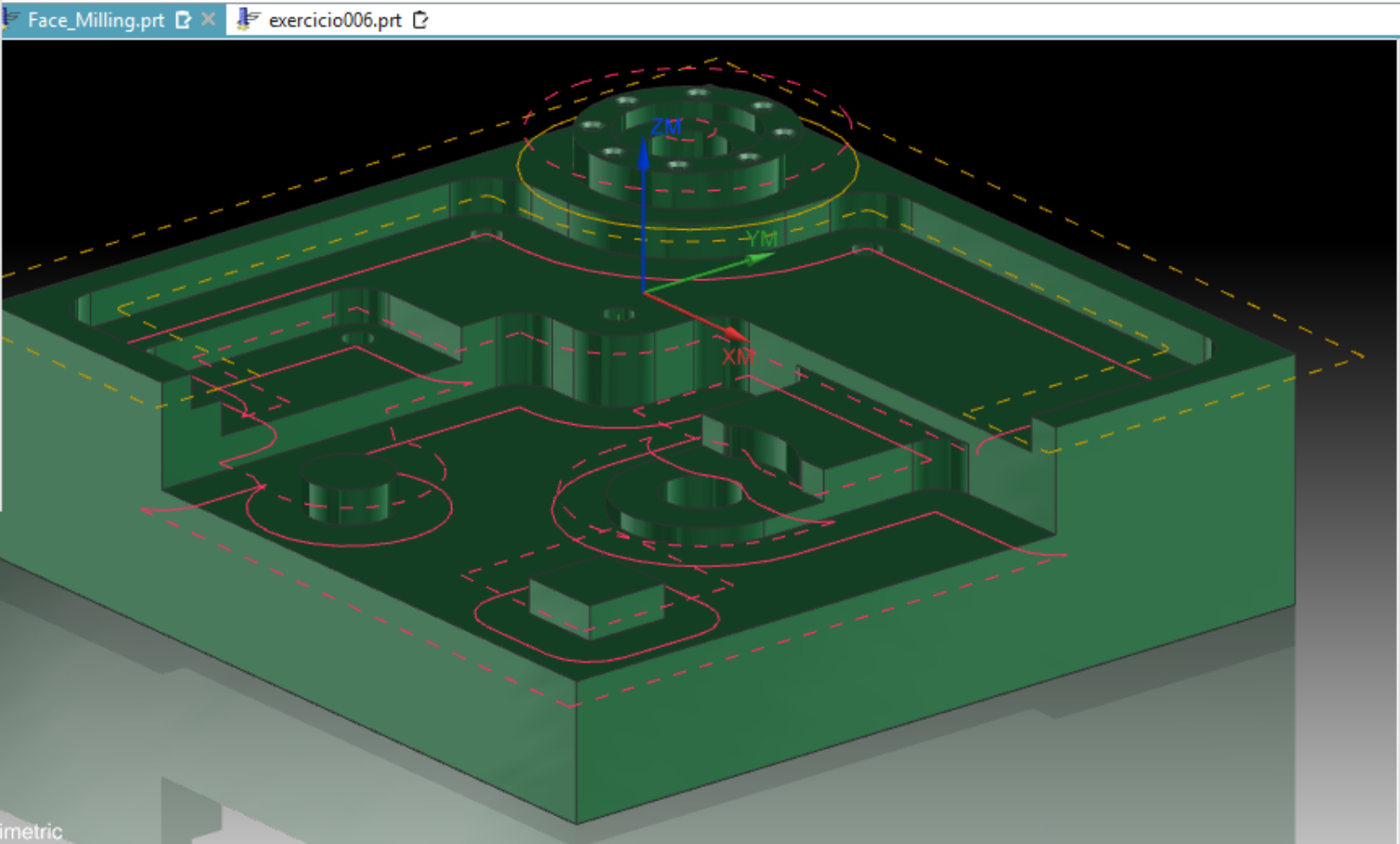
Checking  
Zig-Zag

OK Back Cancel

Application

Shop Documentation More Display Animation Speed 5 Workpiece Show 3D IPW Analysis Geometry Synchronous Modeling Feature Tools

Single Face Single Body



Create, copy, or edit the automatic methods or manual patterns for the regions

### Region Cut Patterns

Name	Region	Level
Regions		
Unused Items		
✓ region_1_level_4	1	4
✓ region_2_level_2	2	2
✓ region_3_level_6	3	6
✓ region_4_level_10	4	10
✓ region_5_level_14	5	14
✓ region_6_level_10	6	10
✓ region_7_level_12	7	12
✗ region_8_level_9	8	9

Gouge Checking  
 Display Mode: All

OK Back Cancel

Application

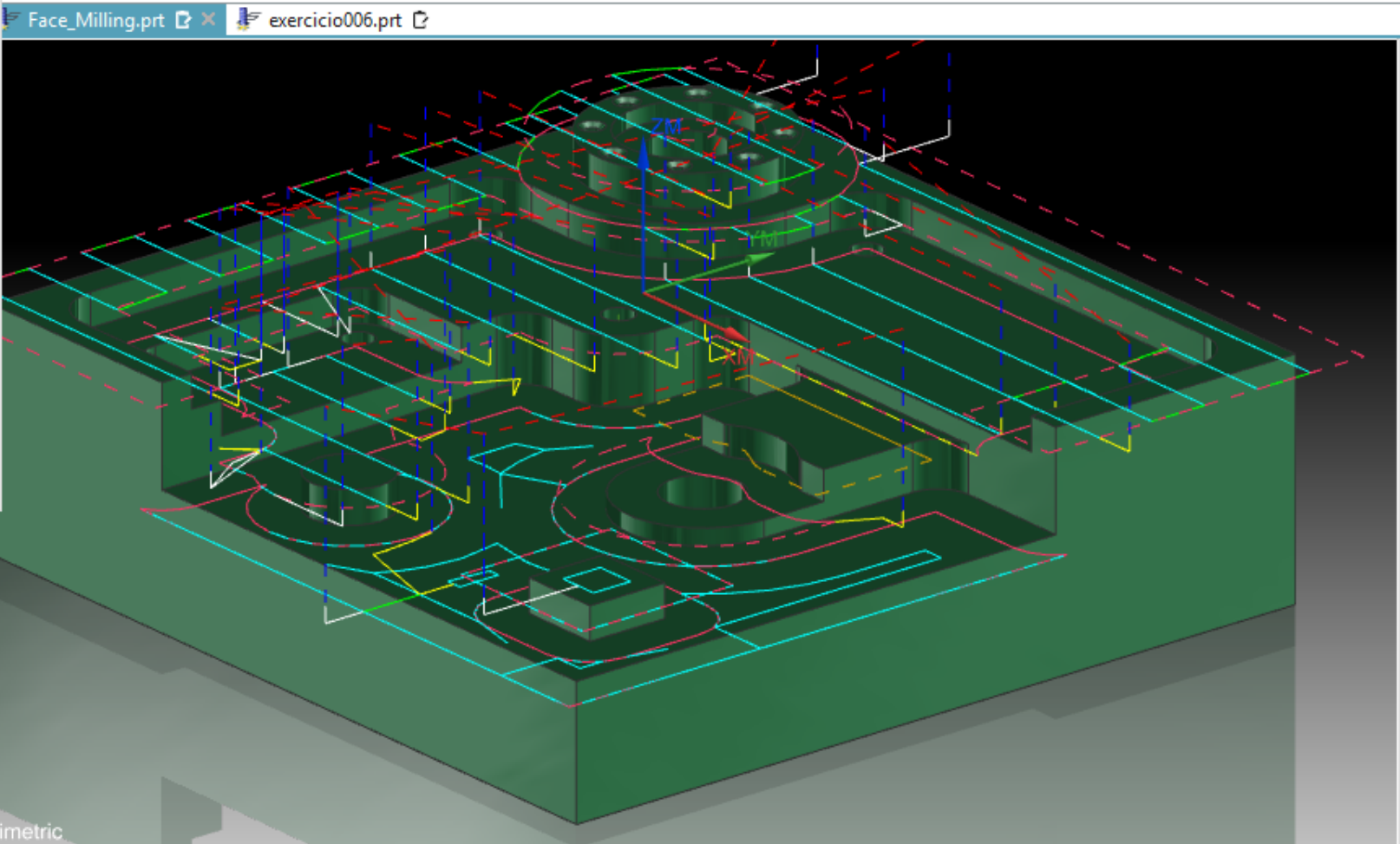
Find a Command

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

Speed 5

Show 3D IPW

Single Face Single Body



### Create Manual Cut Pattern

Reposition To Point

Shapes: **Cut Region**

Offset Distance: **0.0000**

Combine Shapes

Simplify Shapes: **None**

Helical Ramp

Apply Delta

Delta XC: **0.0000**

Delta YC: **0.0000**

Decimal Places: **.1**

OK Apply Cancel

Dependencies

Details

Render Tools Application

Find a Command

Simulate Post Shop More

Operations

Display

Animation

Workpiece

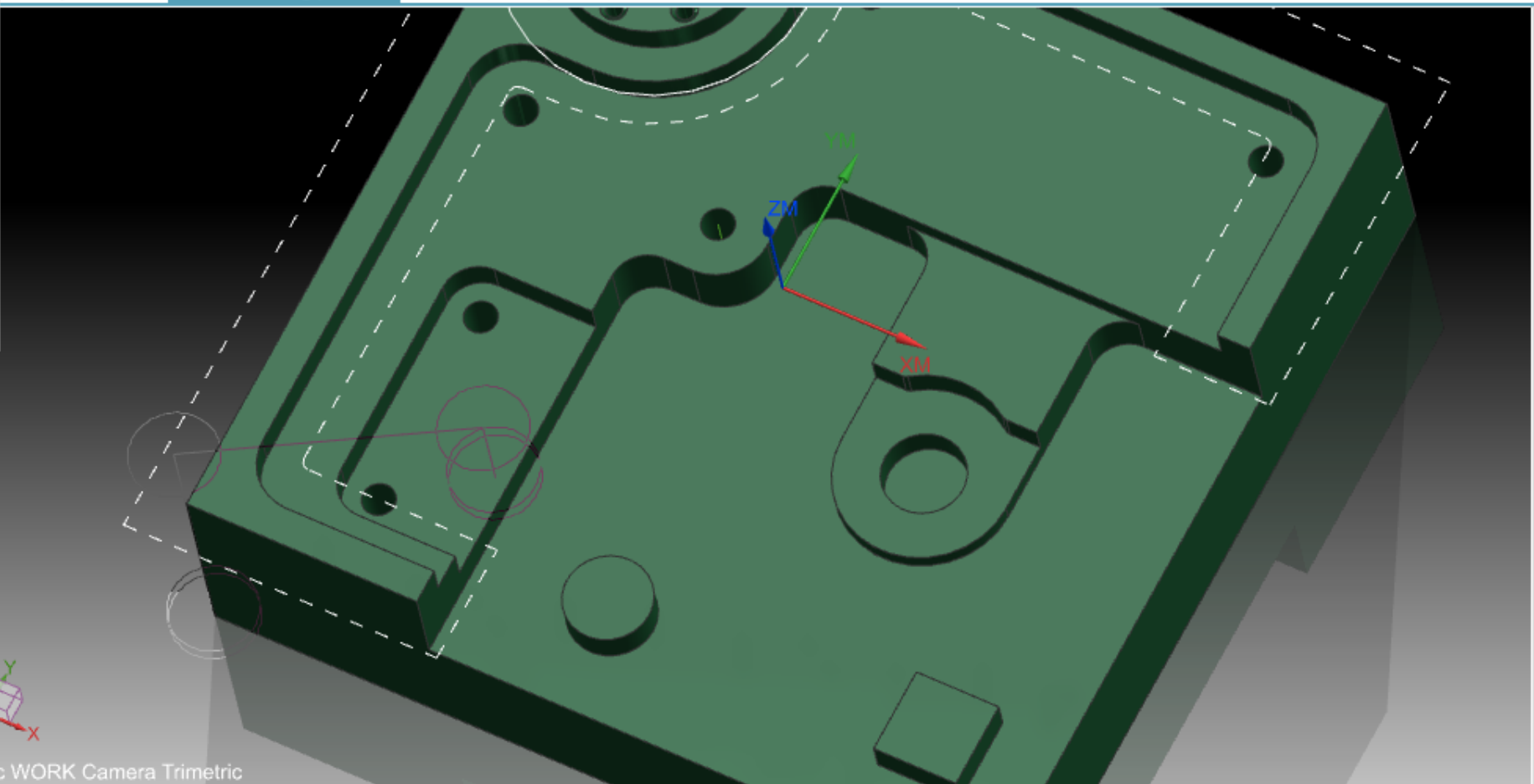
Analysis Geometry Synchronous Modeling Feature Tools

Speed: 5

Show 3D IPW

Single Face Single Body

h\_core.prt Face\_Milling.prt exercicio006.prt



Define Point - Select object to infer point      Reposition To Point

### Region Cut Patterns

Name	Region	Level
Regions		
Unused Items		
region_1_level_4	1	4
region_2_level_2	2	2
region_3_level_6	3	6
region_4_level_10	4	10
region_5_level_14	5	14
region_6_level_10	6	10
region_7_level_12	7	12
region_8_level_9	8	9

Gouge Checking  
 Display Mode: All

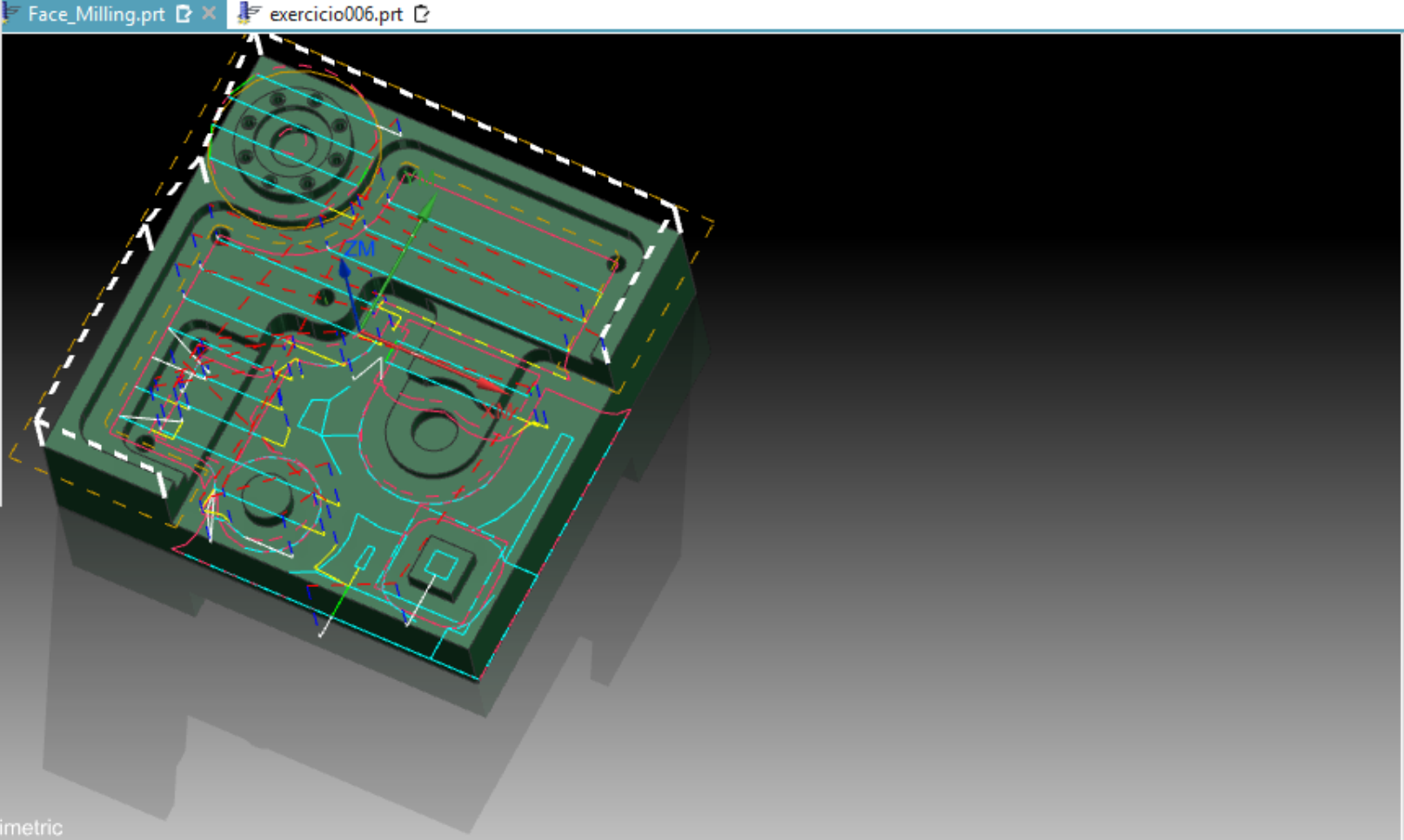
OK Back Cancel

Application

Find a Command

Shop Documentation More Display Animation Speed 5 Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Single Face Single Body



Create, copy, or edit the automatic methods or manual patterns for the regions

**Geometry**

Geometry: WORKPIECE

Specify Part

Specify Cut Area

Specify Wall Geometry

Automatic Walls

Specify Check Body

---

**Tool**

Tool Axis

---

**Path Settings**

Method: MILL\_ROUGH

Cut Pattern: Mixed

Stepover: % Tool Flat

Percent of Flat Diameter: 75.0000

Blank Distance: 3.0000

Depth Per Cut: 0.0000

Final Floor Stock: 0.0000

Cutting Parameters

Non Cutting Moves

Feeds and Speeds

---

**Machine Control**

Program

OK Cancel

Render Tools Application

Find a Command

Simulate Machine Post Process Shop Documentation More

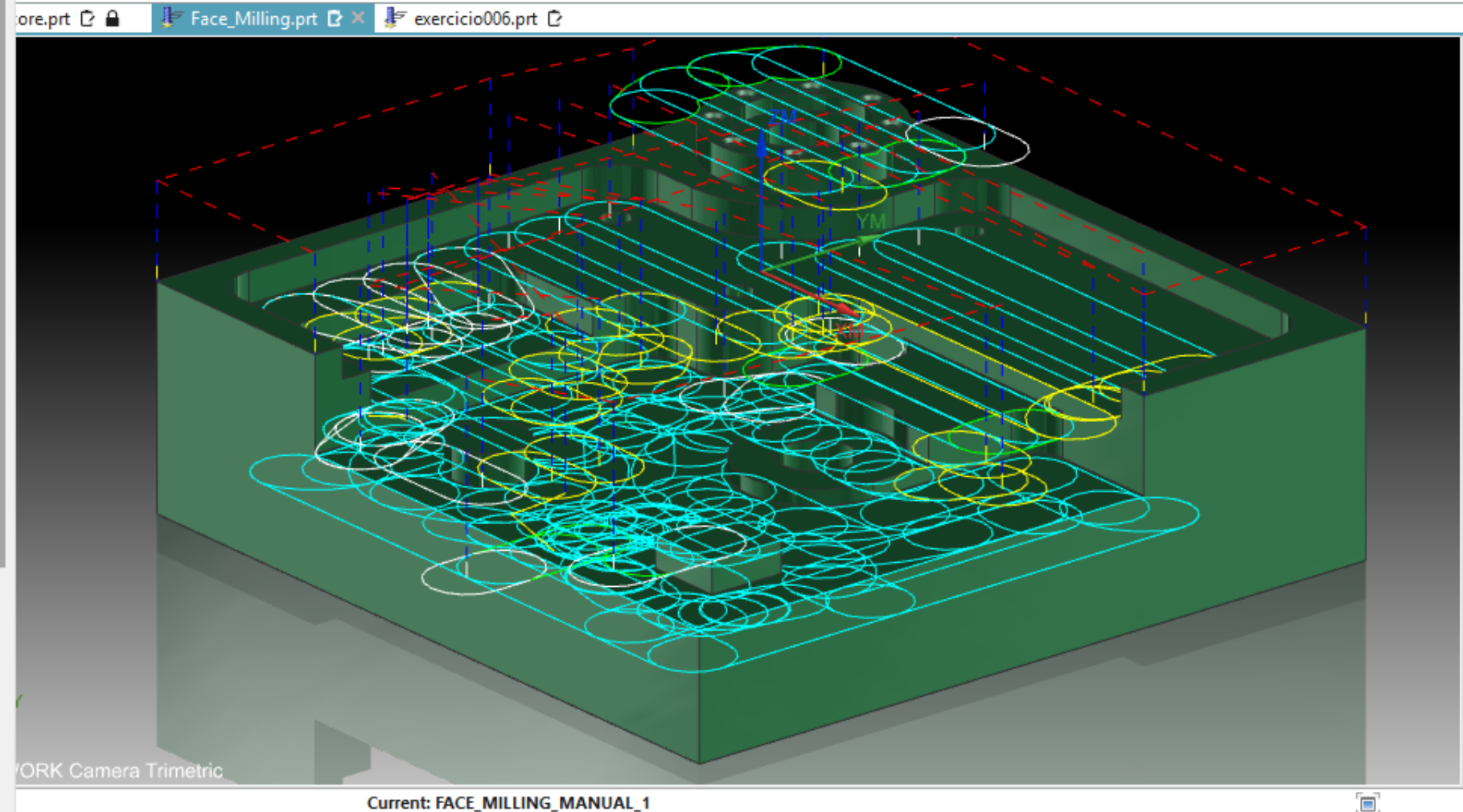
Display Animation Workpiece

Speed: 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Operations: Single Face Single Body



Specify Wall Geometry

Automatic Walls

Specify Check Body

Tool

Tool Axis

Path Settings

Method: MILL\_ROUGH

Cut Pattern: Mixed

Stepover: % Tool Flat

Percent of Flat Diameter: 75.0000

Blank Distance: 3.0000

Depth Per Cut: 0.0000

Final Floor Stock: 0.0000

Cutting Parameters

Non Cutting Moves

Feeds and Speeds

Machine Control

Program

Description

Options

Actions

Generate OK Cancel

Render Tools Application

Find a Command

Simulate Machine Post Process Documentation More

Display Animation

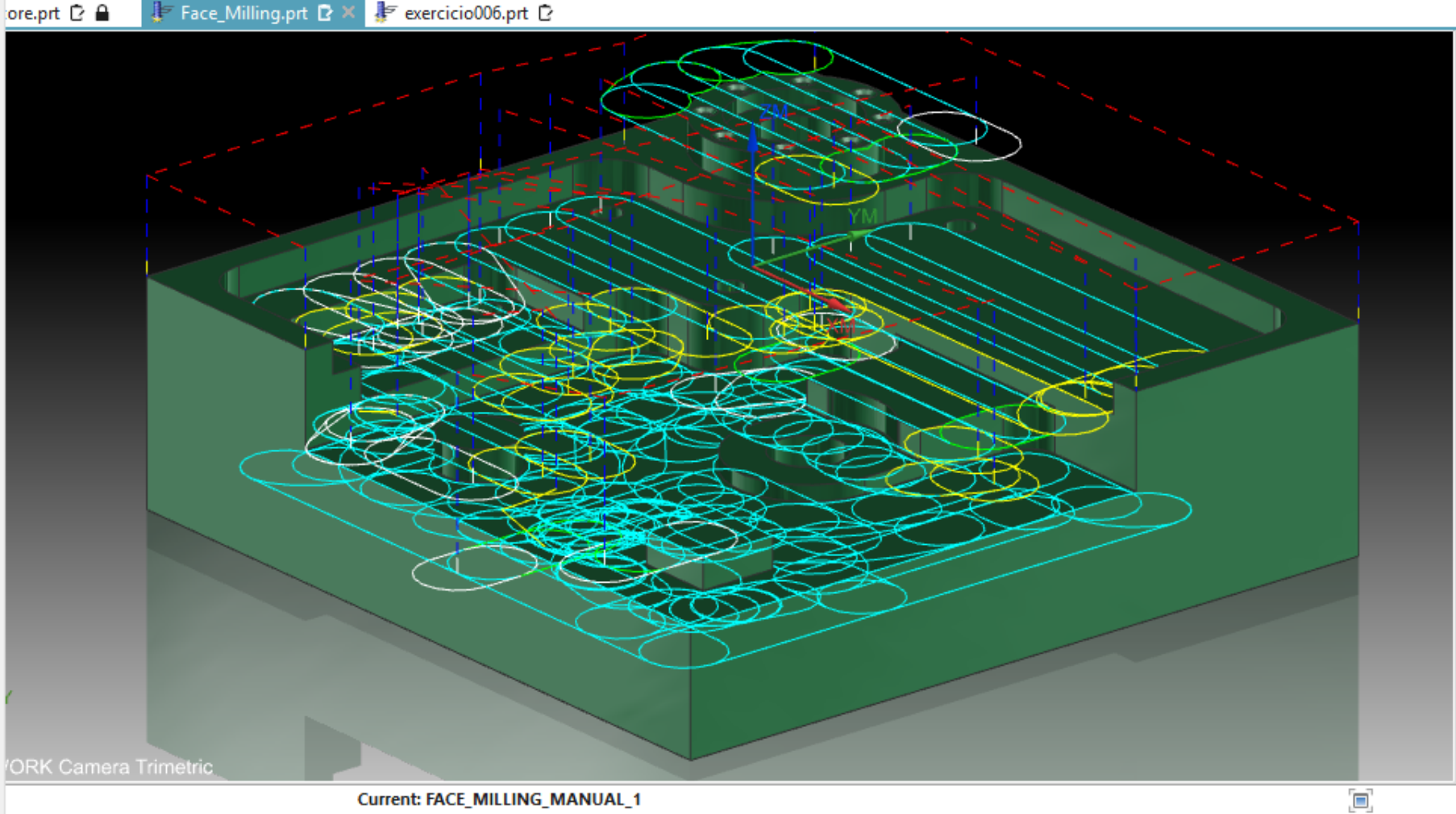
Workpiece

Analysis Geometry Synchronous Modeling Feature Tools

Speed: 5

Show 3D IPW

Single Face Single Body



Name	Region	Level
Regions		
Unused Items		
region_1_level_4	1	4
region_2_level_2	2	2
region_3_level_6	3	6
region_4_level_10	4	10
region_5_level_14	5	14
region_6_level_10	6	10
region_7_level_12	7	12
region_8_level_9	8	9

Gouge Checking

Display Mode All

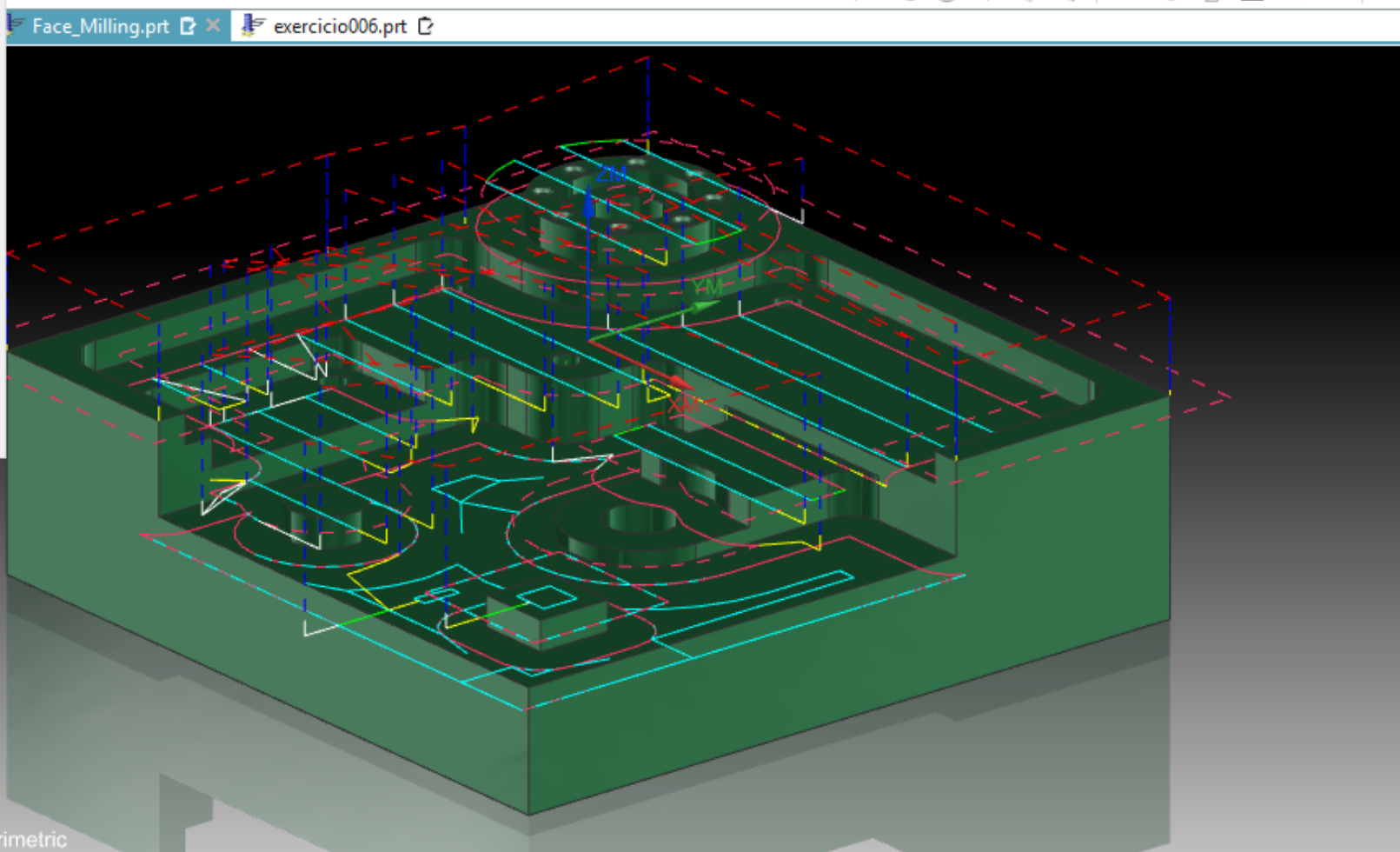
OK Back Cancel

Application

Find a Command

Shop Documentation More Display Animation Speed 5 Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Single Face Single Body



Create, copy, or edit the automatic methods or manual patterns for the regions

File Home

GOTO/-18.722,-93.894,13.000  
GOTO/-18.722,-93.894,-3.350  
GOTO/-18.722,-93.894,-3.350

1

1 49

Feed Rate 0.000000

Replay 3D Dynamic

Tool Display Tool

Tool Path None

Number of Motions 10

IPW Resolution Medium

Display Options

Enhance IPW Resolution

IPW None

Create Delete

Analyze

Show 3D Show Spinning 3D

Check for IPW Collisions

Check Tool and Holder

Collision Settings List

Reset

Suppress Animation

Animation Speed

6

OK Cancel

Render Tools Application

Find a Command

Simulate Post Shop More

Machine Process Documentation

Operations Display Animation Workpiece

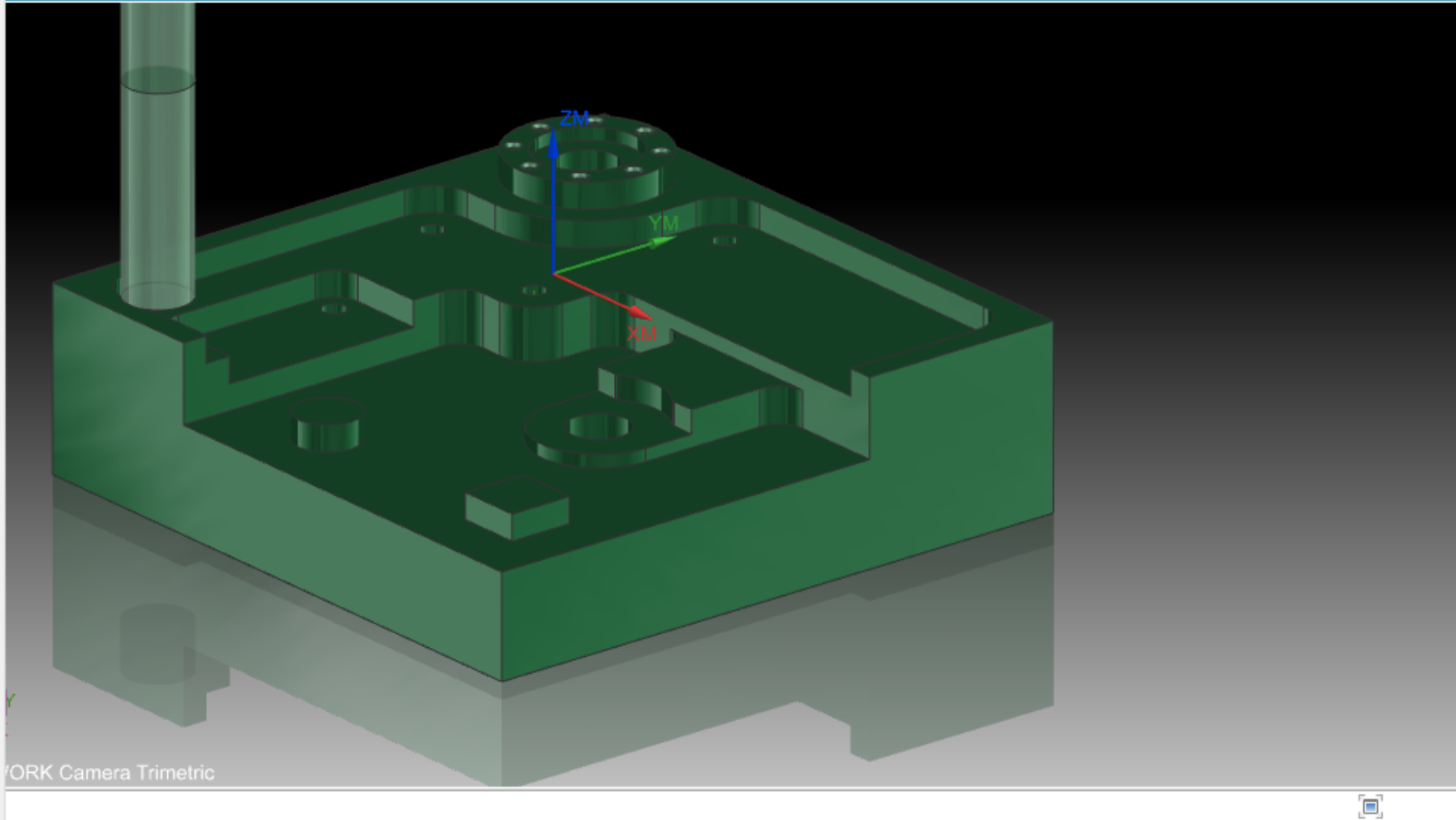
Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

entire Assembly

ore.prt Face\_Milling.prt exercicio006.prt





File Edit View

1 49

Feed Rate 0.000000

Replay 3D Dynamic

Tool Display Tool

Tool Path None

Number of Motions 10

IPW Resolution Medium

Display Options

Enhance IPW Resolution

IPW None

Create Delete

Analyze

Show 3D Show Spinning 3D

Check for IPW Collisions

Check Tool and Holder

Collision Settings List

Reset

Suppress Animation

Animation Speed

6

1 10

OK Cancel

Send Tools Application

Find a Command

Speed 5

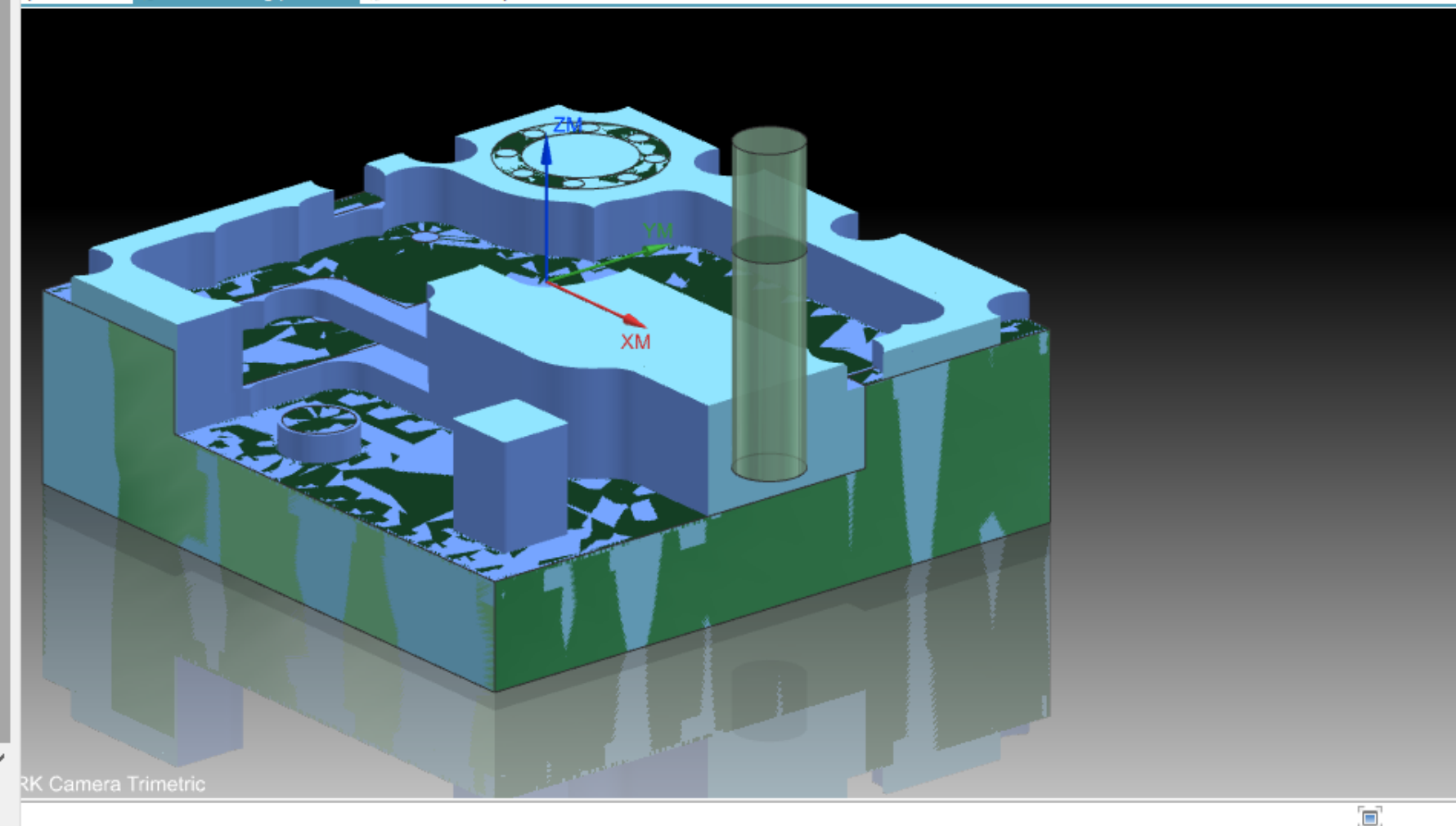
Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Operations

Display Animation Workpiece

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File Edit View Tools Application

Find a Command

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Operations

Display Animation Workpiece

Face\_Milling.prt exercicio006.prt

Feed Rate 0.000000

Replay 3D Dynamic

Tool Display Tool

Tool Path None

Number of Motions 10

IPW Resolution Medium

Display Options

Enhance IPW Resolution

IPW None

Create Delete

Analyze

Show 3D Show Spinning 3D

Check for IPW Collisions

Check Tool and Holder

Collision Settings List

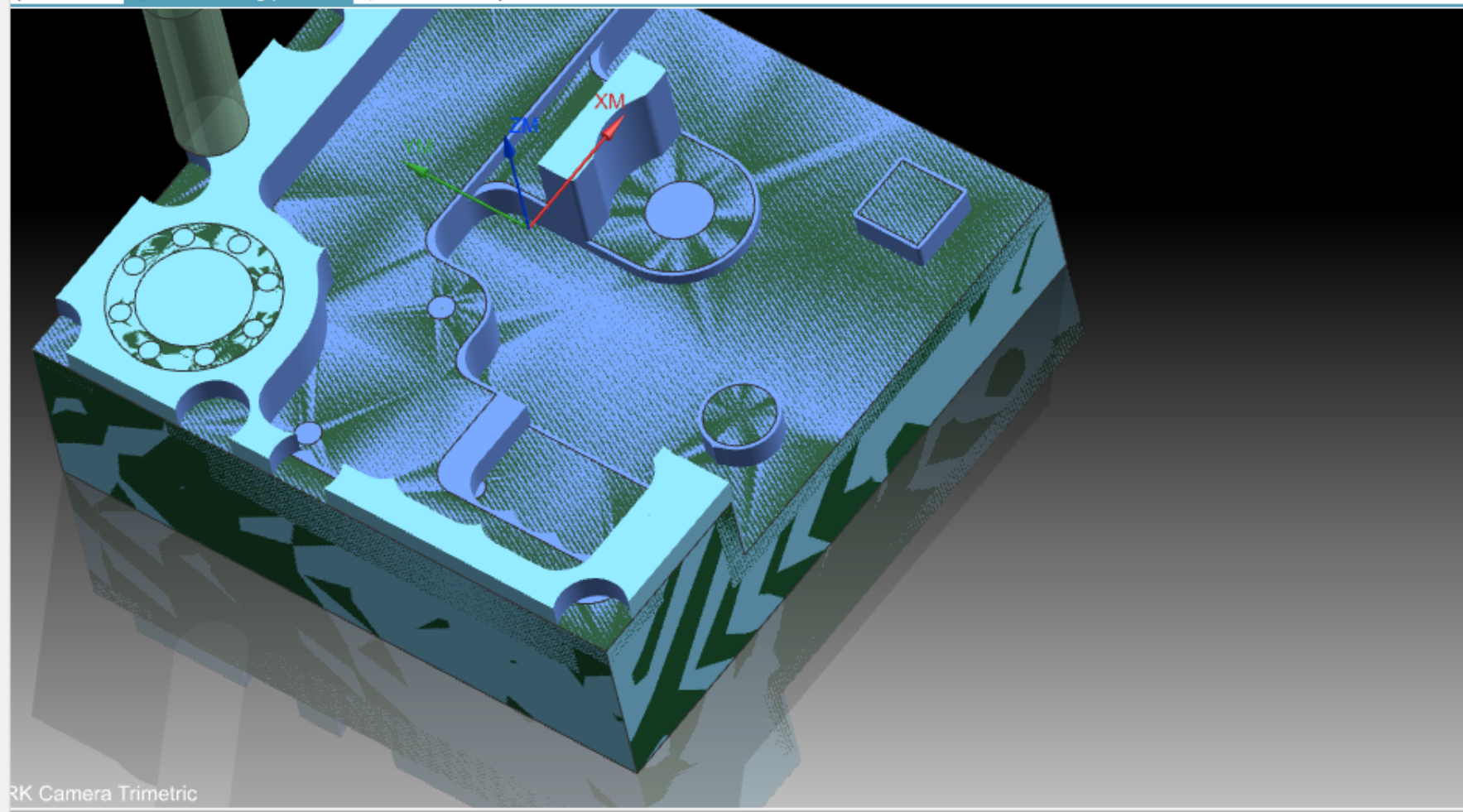
Reset

Suppress Animation

Animation Speed 6

1 10

OK Cancel



feed = 0.000, x = -19.73, y = 67.03, z = 13.00

File Home Assemblies Curve Analysis View Render Tools Application

Find a Command [ ] [ ] [ ? ] [ ] Tutorials

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

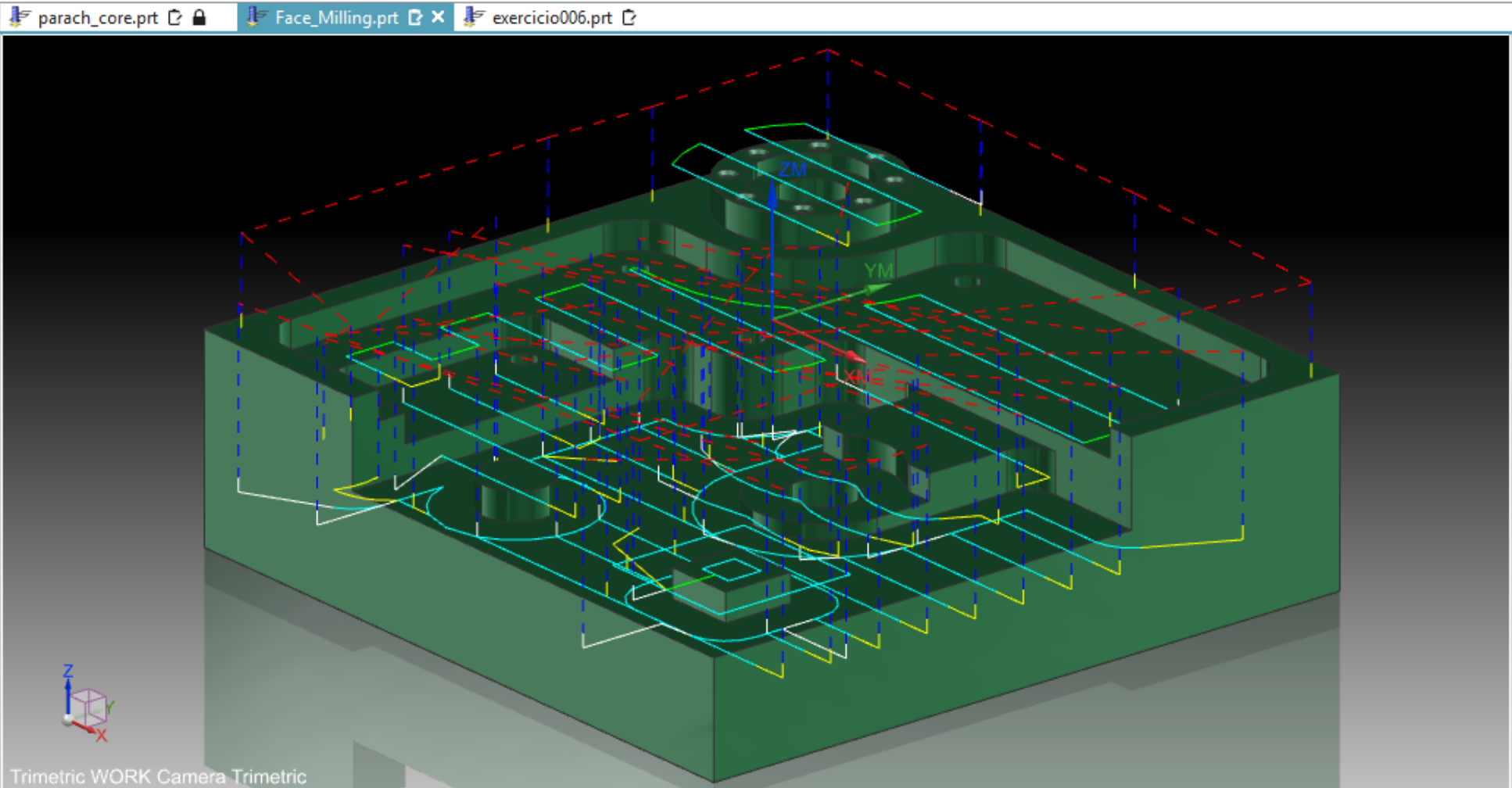
Menu No Selection Filter Entire Assembly

Operation Navigator - Machine Tool

Name	Path
GENERIC_MACHINE	
Unused Items	
FRESA_16	
! FACE_MILLING_MANUAL	✓

Dependencies ✓

Details ✓

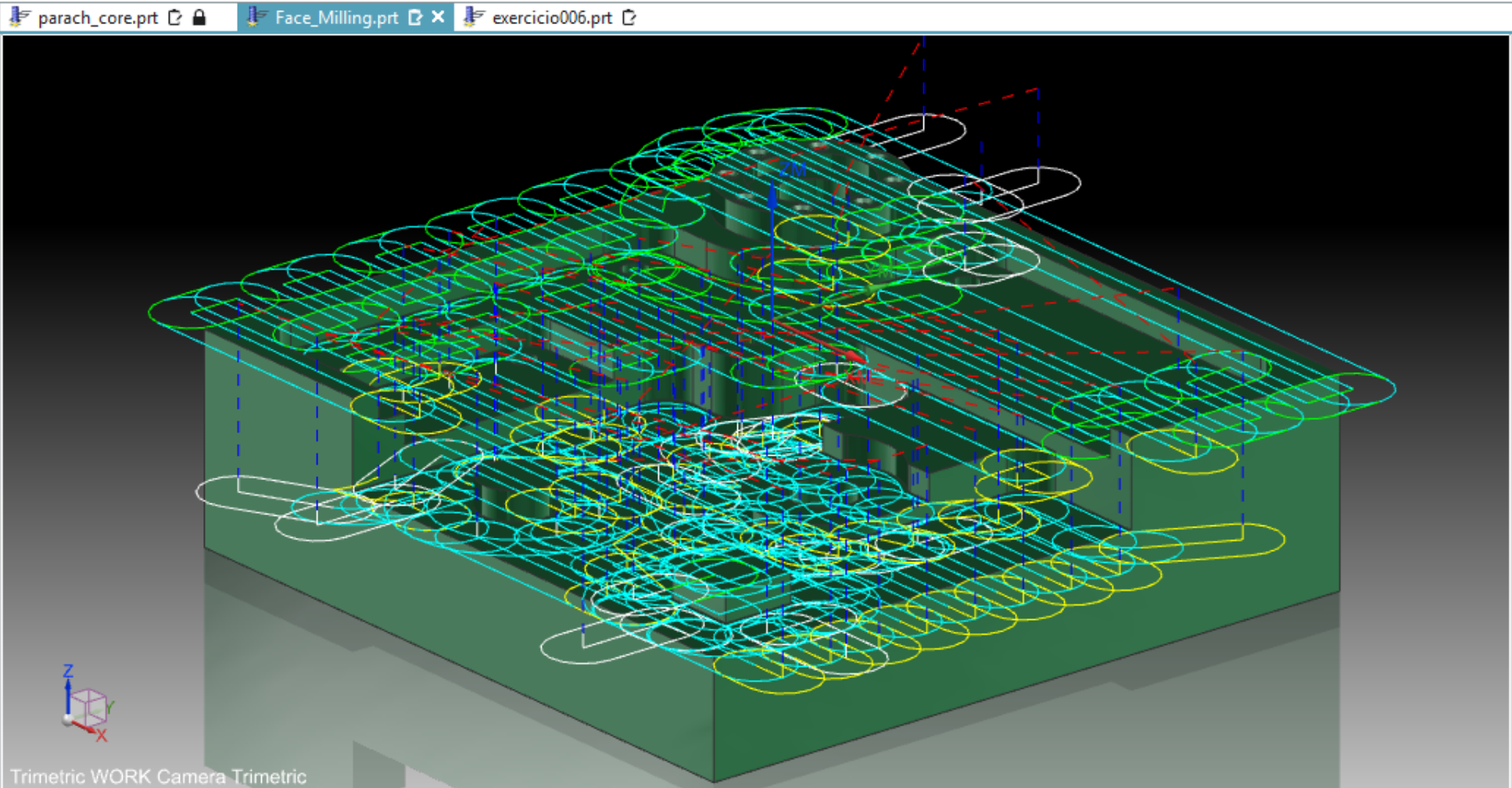


Operation Navigator - Machine Tool

Name	Path
GENERIC_MACHINE	
Unused Items	
FRESA_16	
FACE_MILLING_MANUAL	✓

Dependencies

Details



Select existing CSYS total 1