



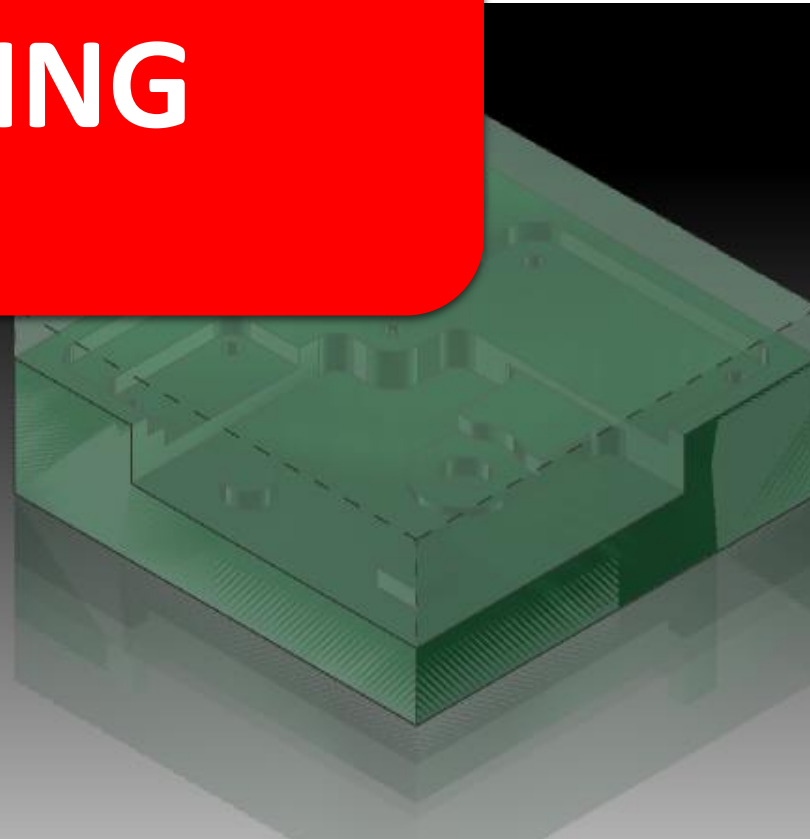
PLM Software

SIEMENS

NX

FACE MILLING

Edgard Gonçalves Cardoso
www.professoredgard.com



NX 12 - Gateway

SIEMENS

File View Render Assemblies Analysis Tools Application

Find a Command

Window Zoom 0.5272

Show and Hide 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...

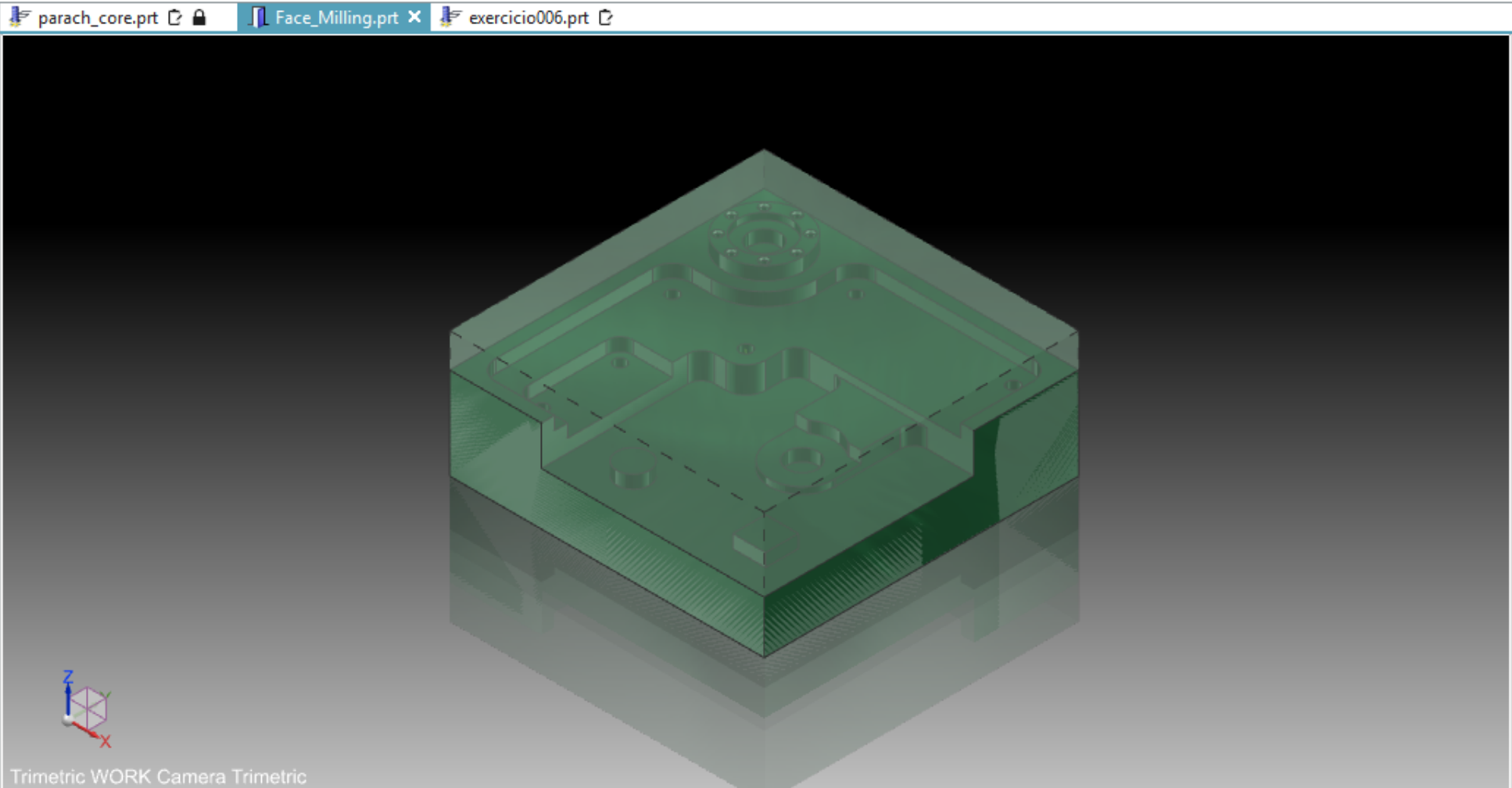
Menu No Selection Filter Entire Assembly

Assembly Navigator

| Descriptive Part Name | Info | R. |
|-----------------------|------|----|
| Sections | | |
| Face_Milling | | |

Preview

Dependencies



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

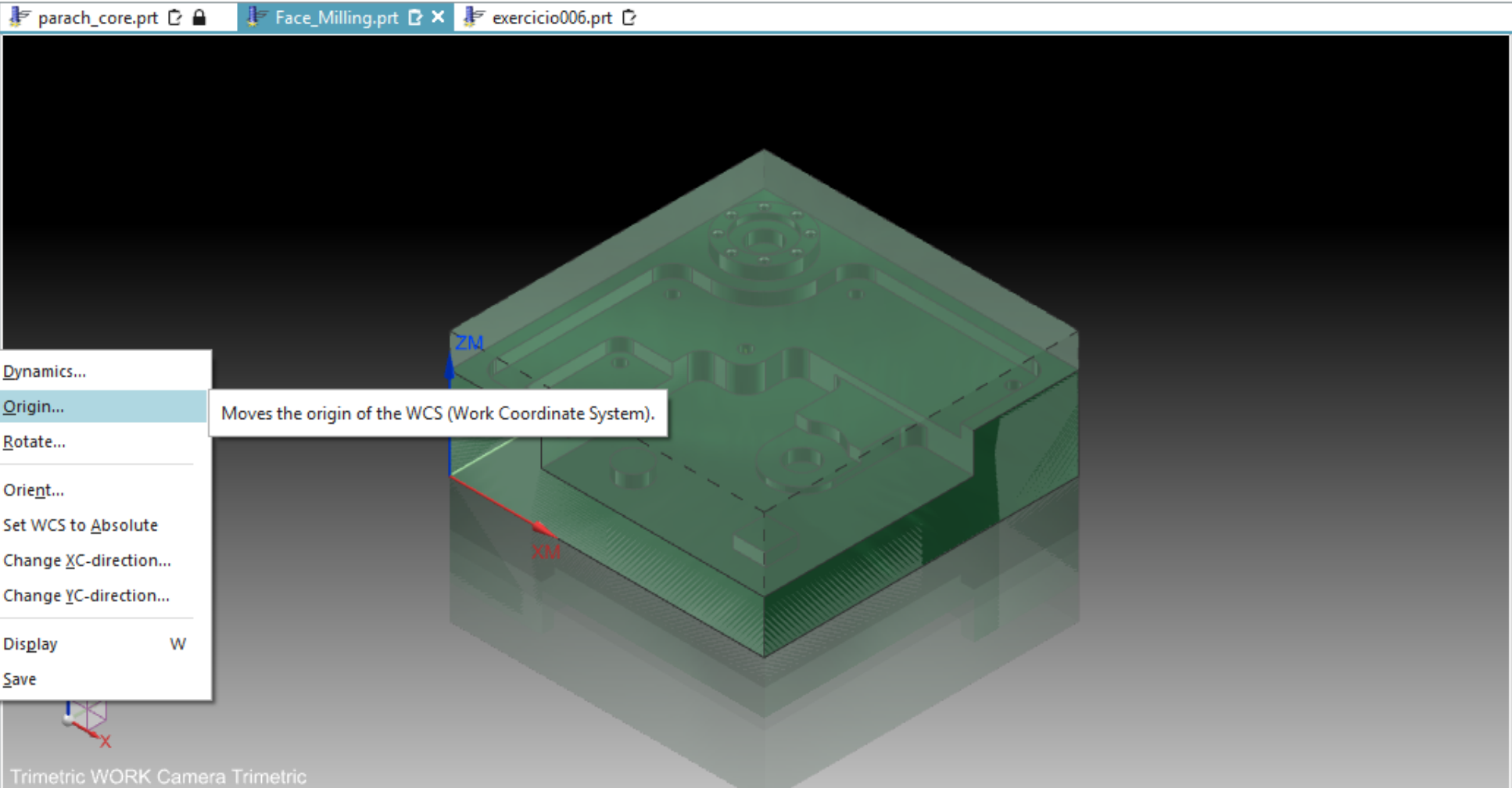
Insert Actions Operations Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

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 X-direction...
 - Change Y-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

NX | File | Home | Assemblies | Curve | Analysis

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

Insert | Actions

Menu | No Selection

Point

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

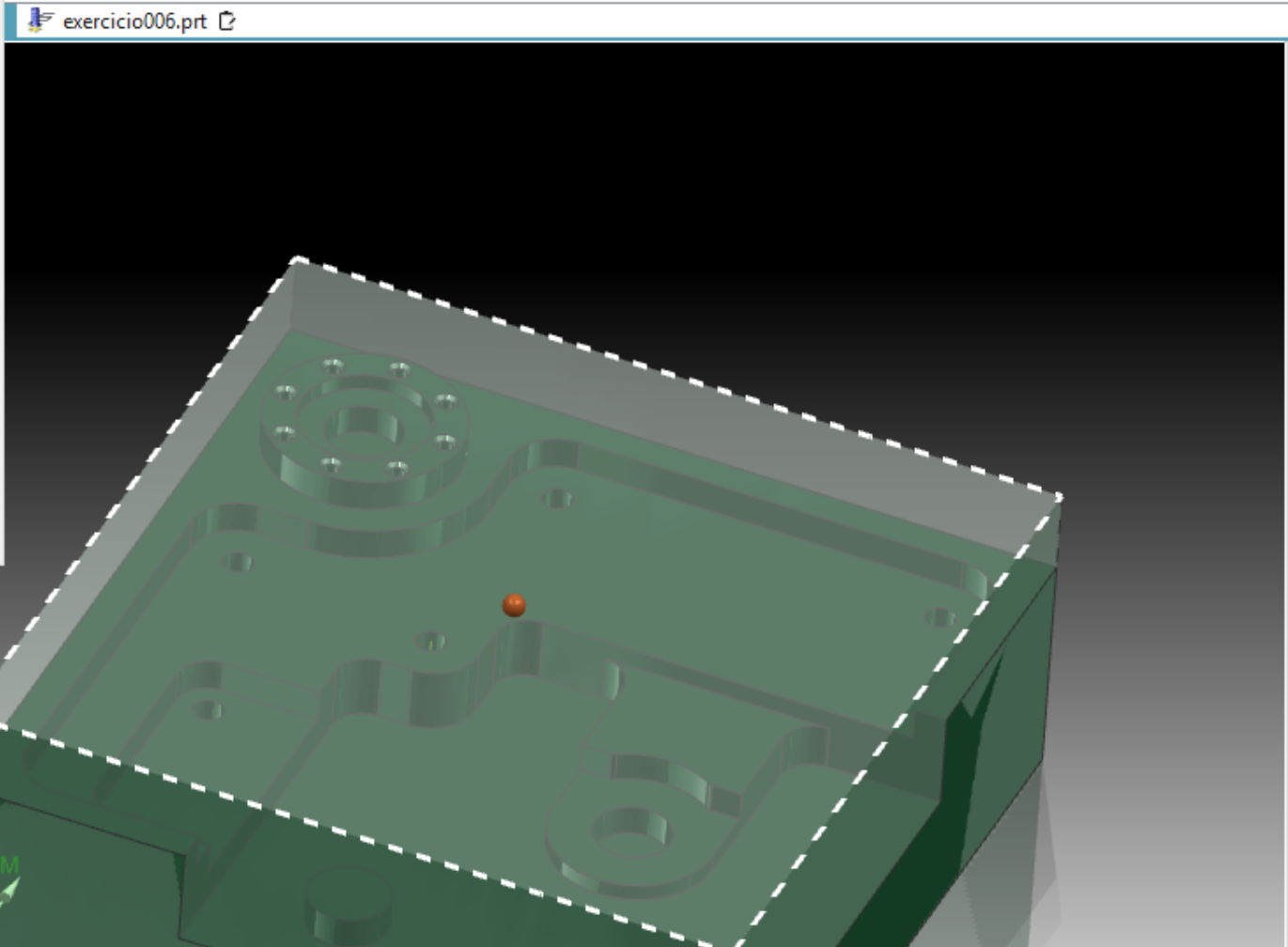
Details

NX 12 - Manufacturing | Find a Command | Tutorials

Display | Animation | Workpiece | Analysis | Geometry | Synchronous Modeling | Feature | Tools

Speed: 5

Show 3D IPW



Specify surface parameter percentages | Non-associative point on surface specified

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

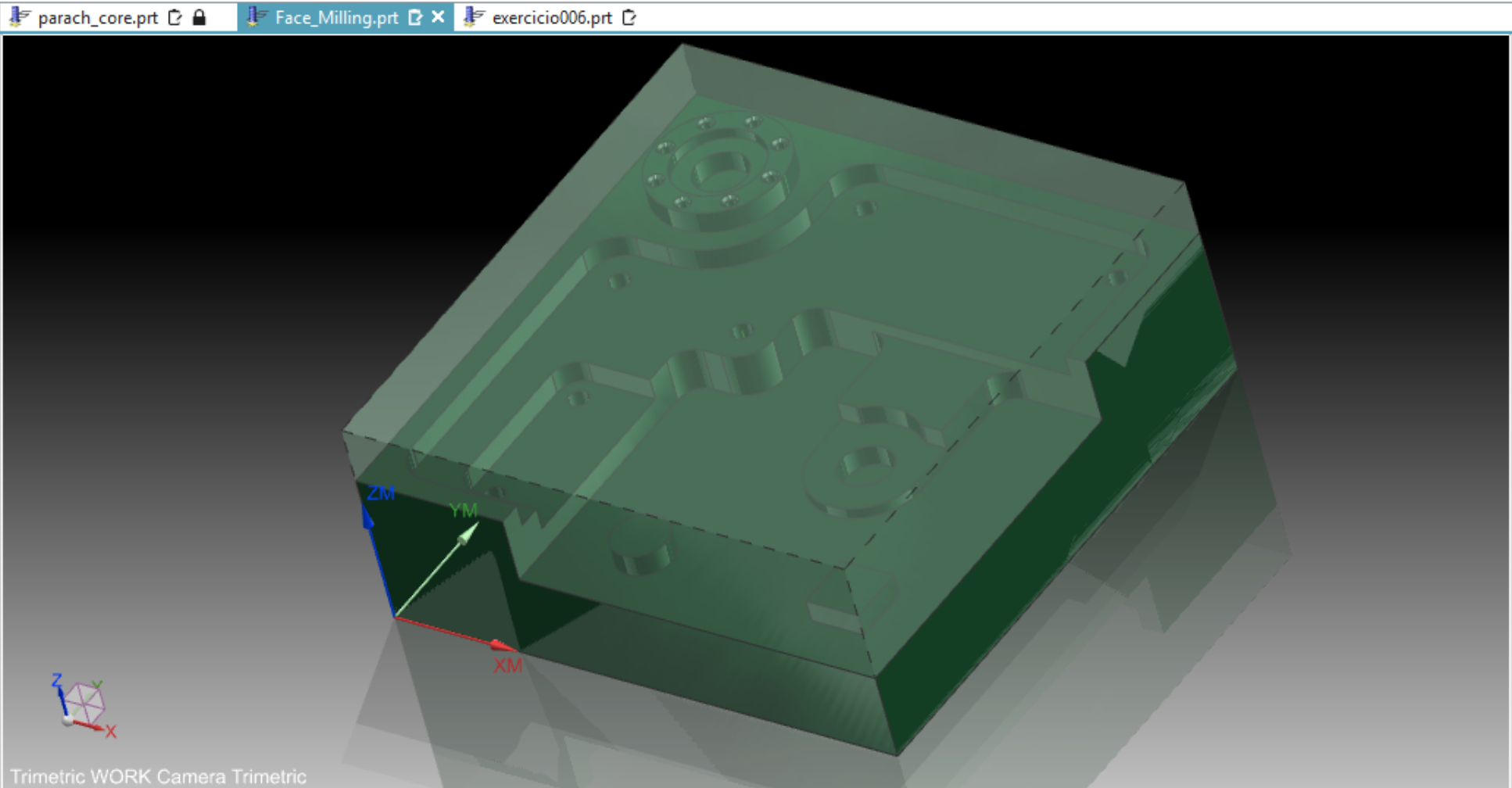
Menu No Selection Filter Entire Assembly Speed: 5 Show 3D IPW

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

Dependencie Details



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

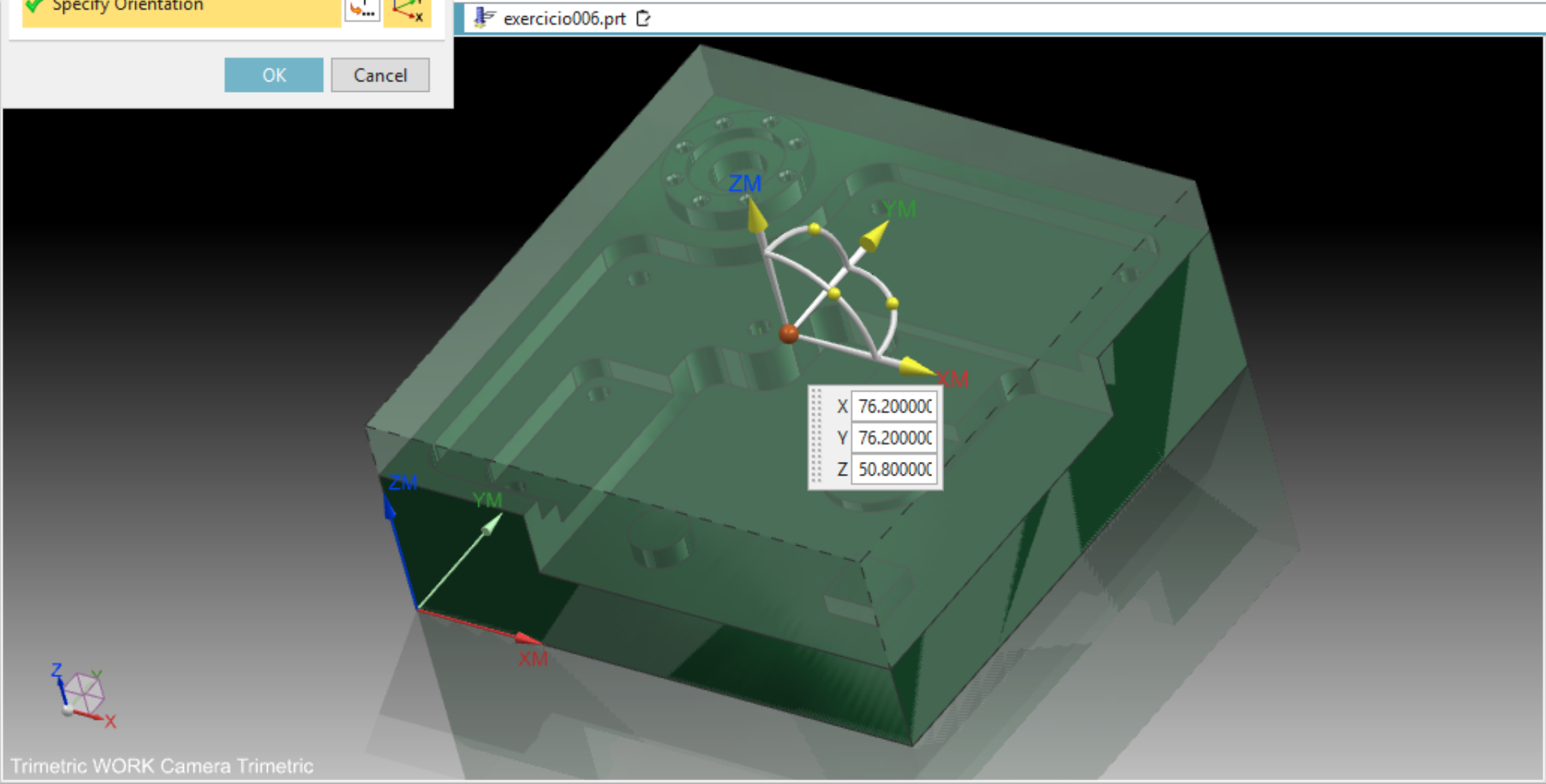
Show 3D IPW

Operation Navigator - Geometry

| Name | Path | Tool |
|--------------|------|------|
| GEOMETRY | | |
| Unused Items | | |
| MCS_MILL | | |

Dependencies

Details



File Home Assemblies Curve Analysis

Create Tool Create Geometry Create Operation Properties Generate Tool Path

Insert Actions

Menu No Selection

Create Operation

Type: mill_planar

Operation Subtype

Location

Program: PROGRAM

Tool: FRESA_16 (Milling Toc)

Geometry: WORKPIECE

Method: MILL_ROUGH

Name: FACE_MILLING_manual

OK Apply Cancel

Operation Navigator - Geometry

| Name | Path | Tool |
|--------------|------|------|
| GEOMETRY | | |
| Unused Items | | |
| MCS_MILL | | |
| WORKPIECE | | |

Dependencies

Details

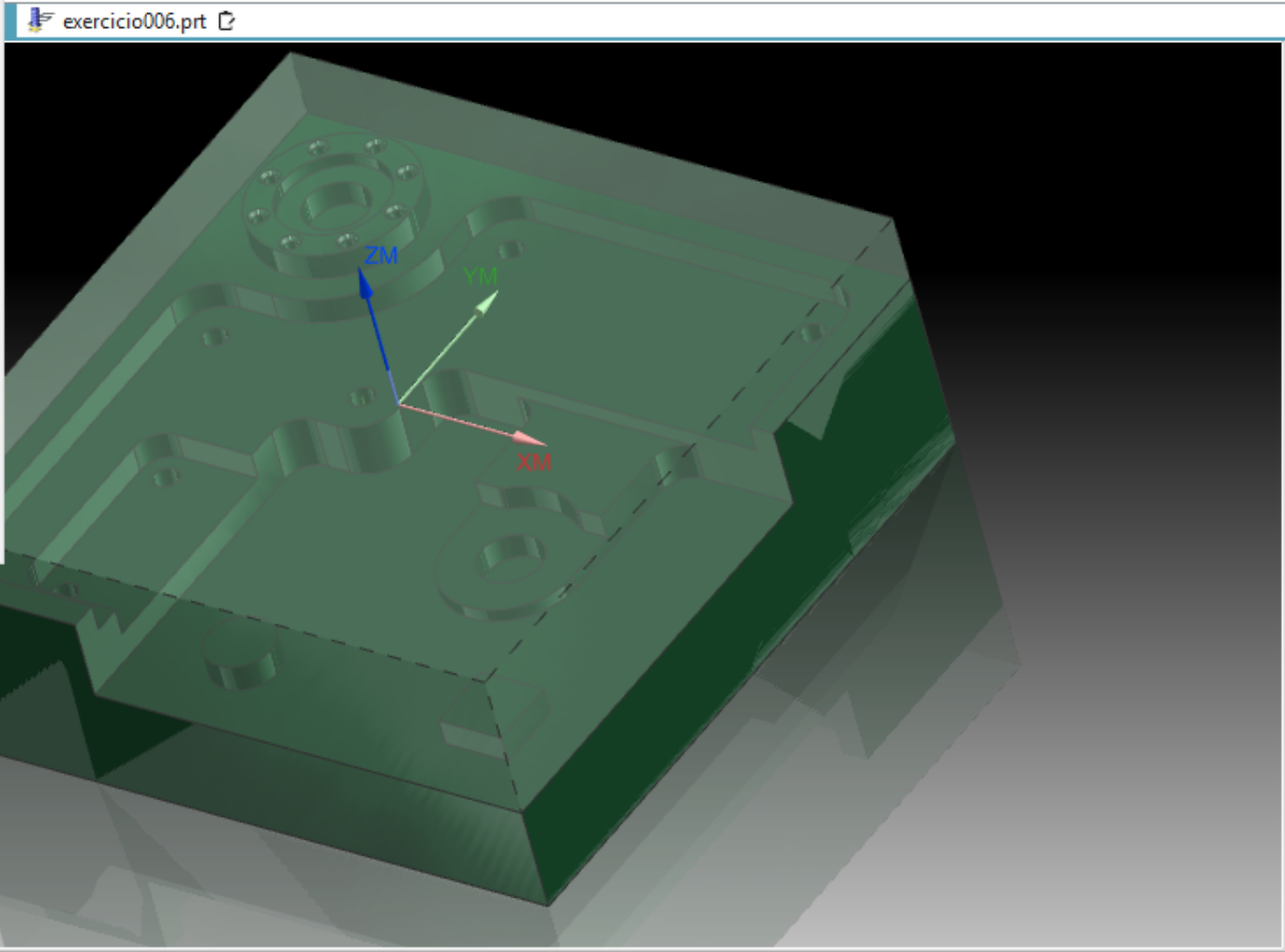
NX 12 - Manufacturing

Find a Command

Speed: 5

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

Menu

Operation Navigator - Geometry

| Name |
|-------------------|
| GEOMETRY |
| Unused Items |
| MCS_MILL |
| WORKPIECE |
| FACE_MILLING_M... |

Dependencies

Details

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

OK Cancel

Find a Command

More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed 5

Show 3D IPW

Single Face Single Body

exercicio006.prt

Current: FACE_MILLING_MANUAL

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

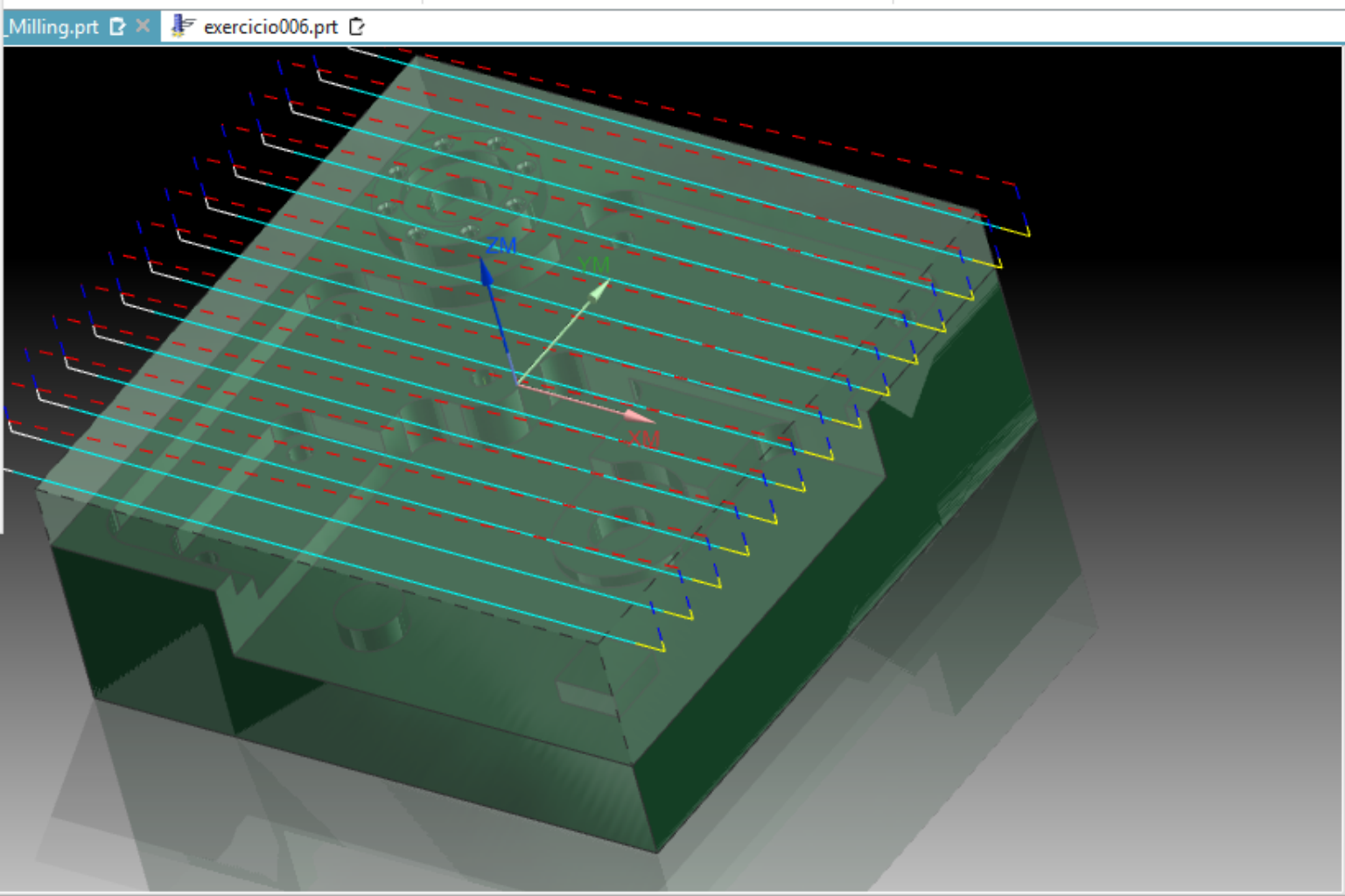
Analysis

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

Menu

Operation Navigator - Geometry

Name

GEOMETRY

- Unused Items
- MCS_MILL
- WORKPIECE
- FACE_MILLING_M...
- FACE_MILLING_M...

Dependencies

Details

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

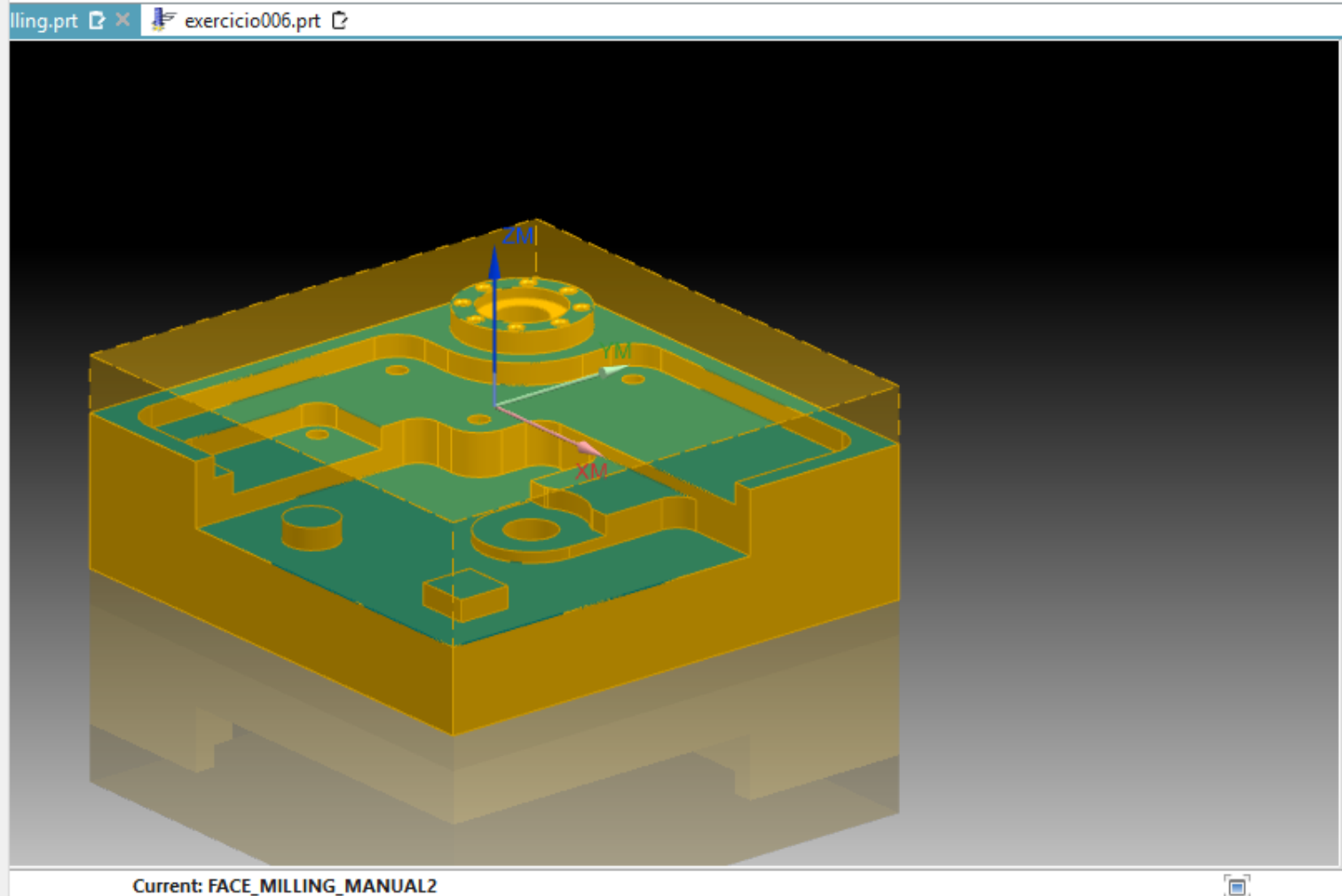
Find a Command

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

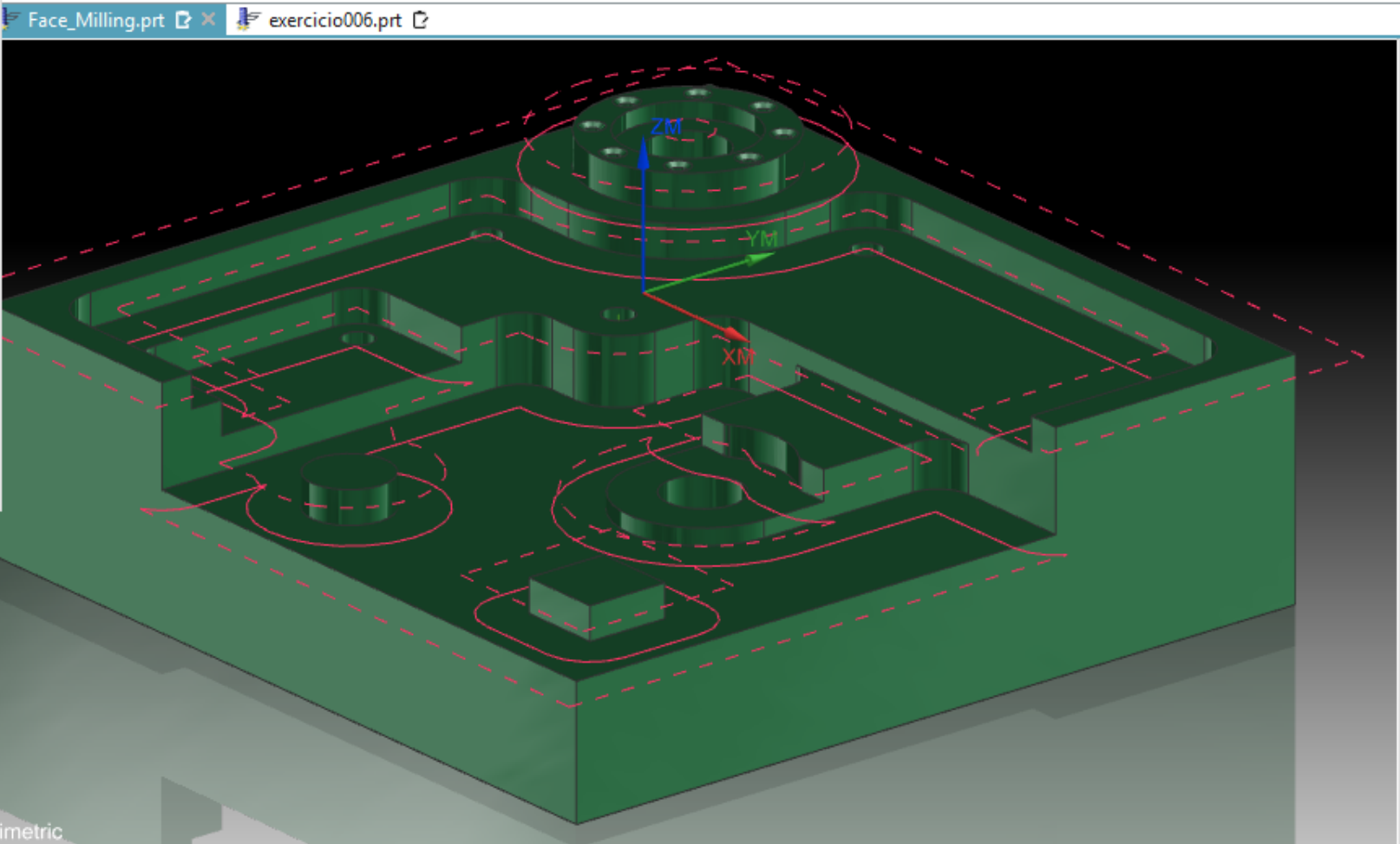
Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Speed 5

Show 3D IPW

Find a Command

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

Face_Milling.prt exercicio006.prt

Trimetric WORK Camera Trimetric

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

Application

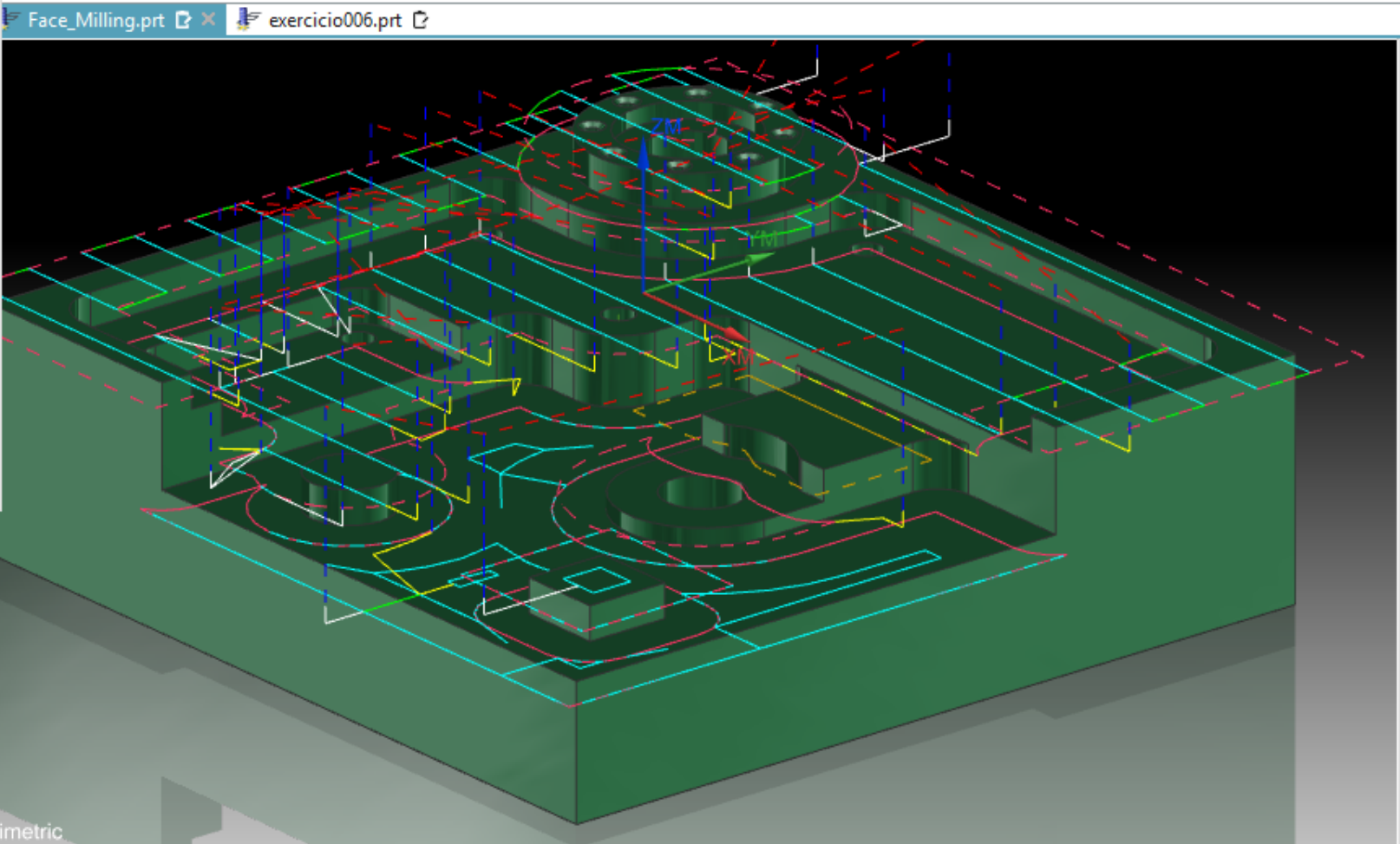
Find a Command

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

Speed: **5**

Operations: Simulate Machine, Post Process, Shop Documentation, More

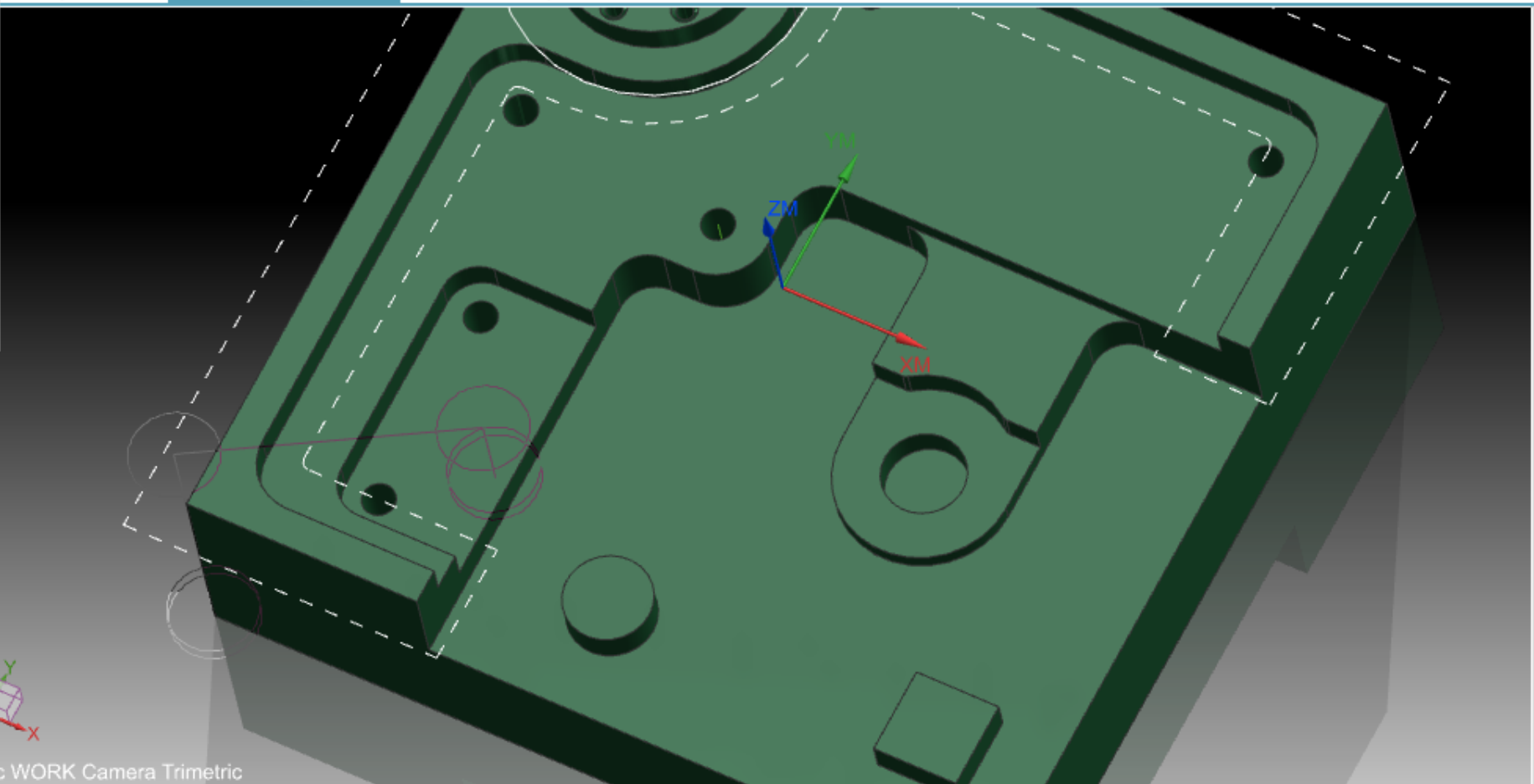
Display: [Icons]

Animation: [Icons]

Workpiece: Show 3D IPW, Analysis, Geometry, Synchronous Modeling, Feature, Tools

Single Face Single Body

h_core.prt Face_Milling.prt exercicio006.prt



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

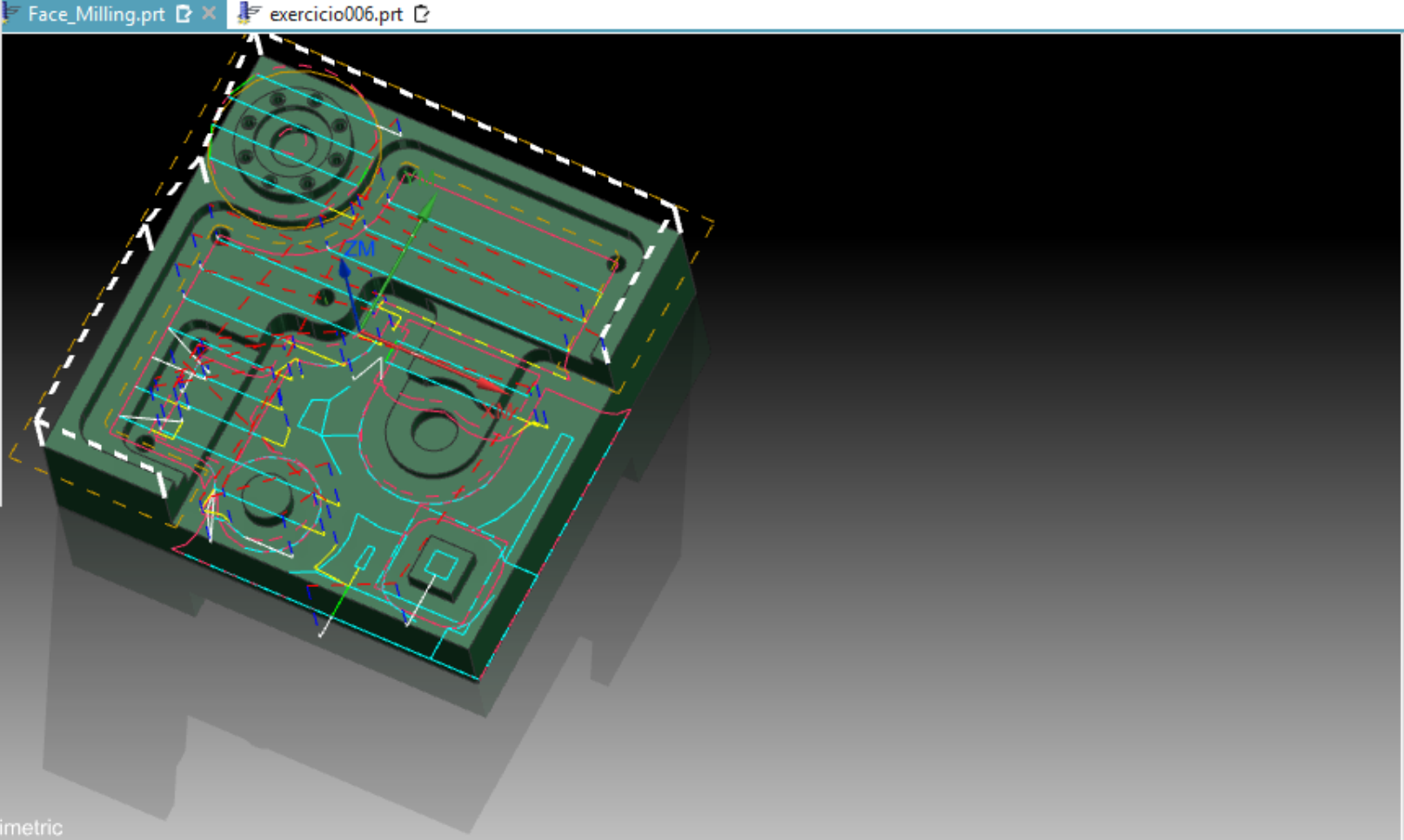
OK Back Cancel

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

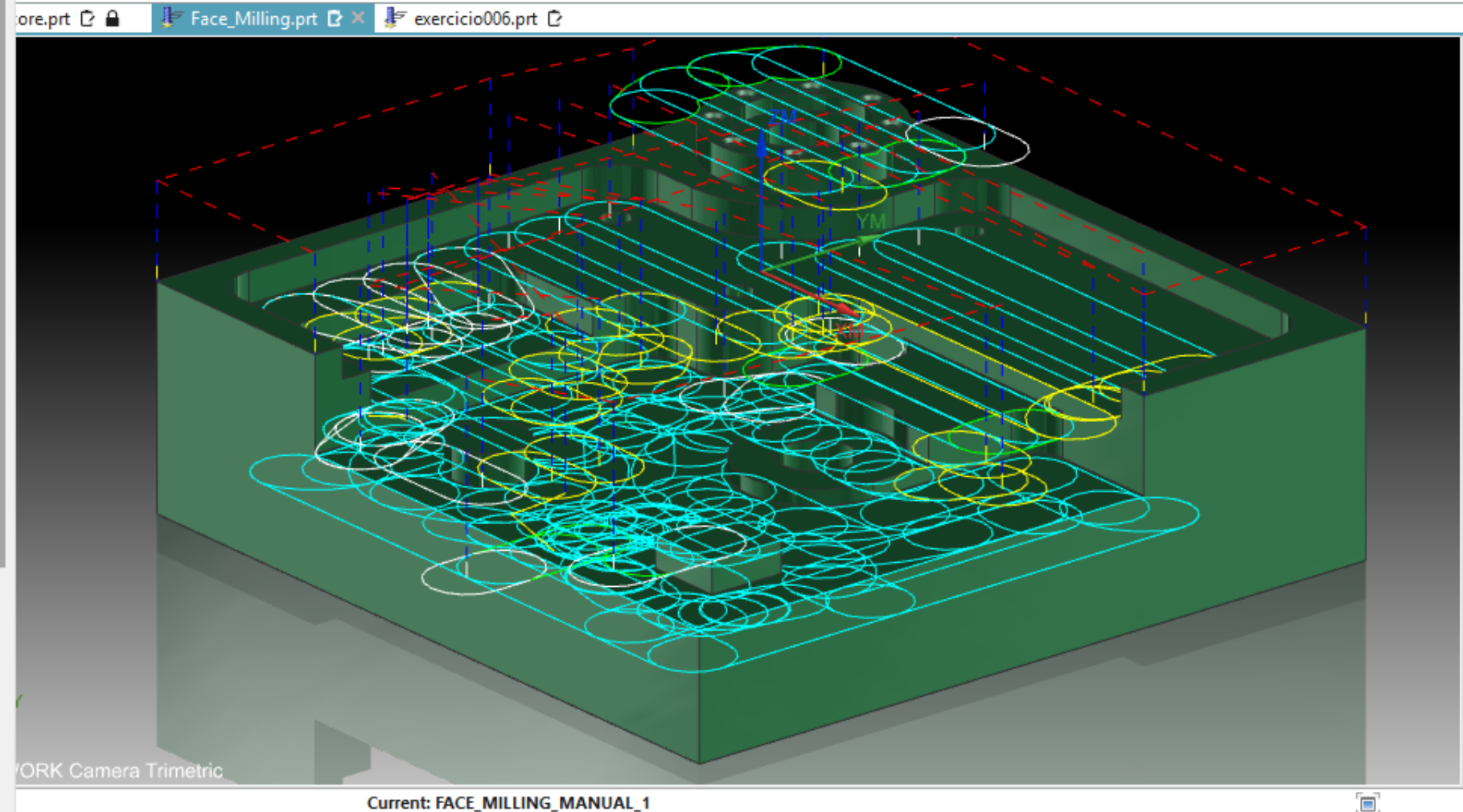
Display Animation Workpiece

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

Speed: 5

Operations: Simulate Machine, Post Process, Shop Documentation, More

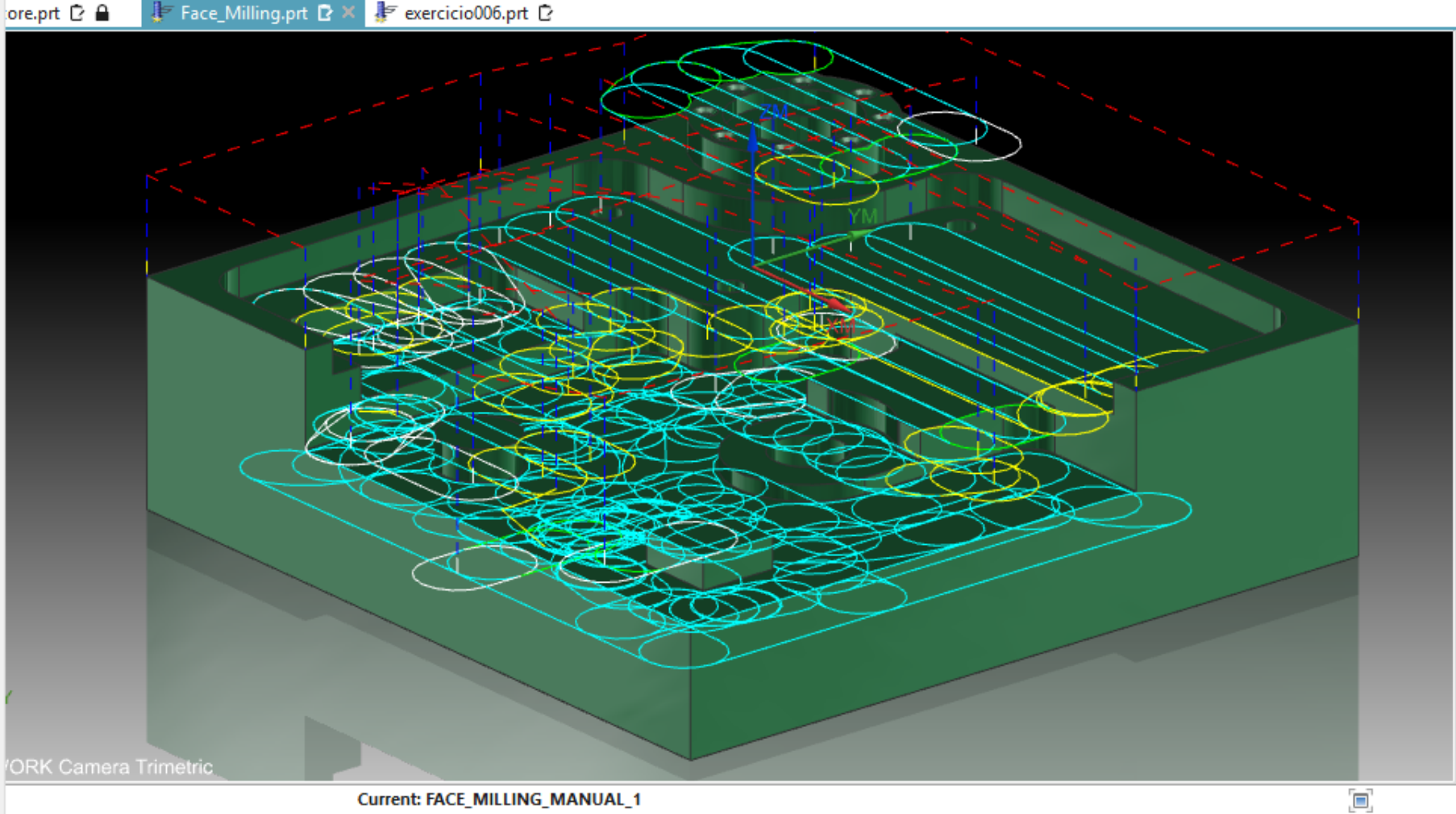
Display: [Icons]

Animation: [Icons]

Workpiece: Show 3D IPW, Analysis, Geometry, Synchronous Modeling, Feature, Tools

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

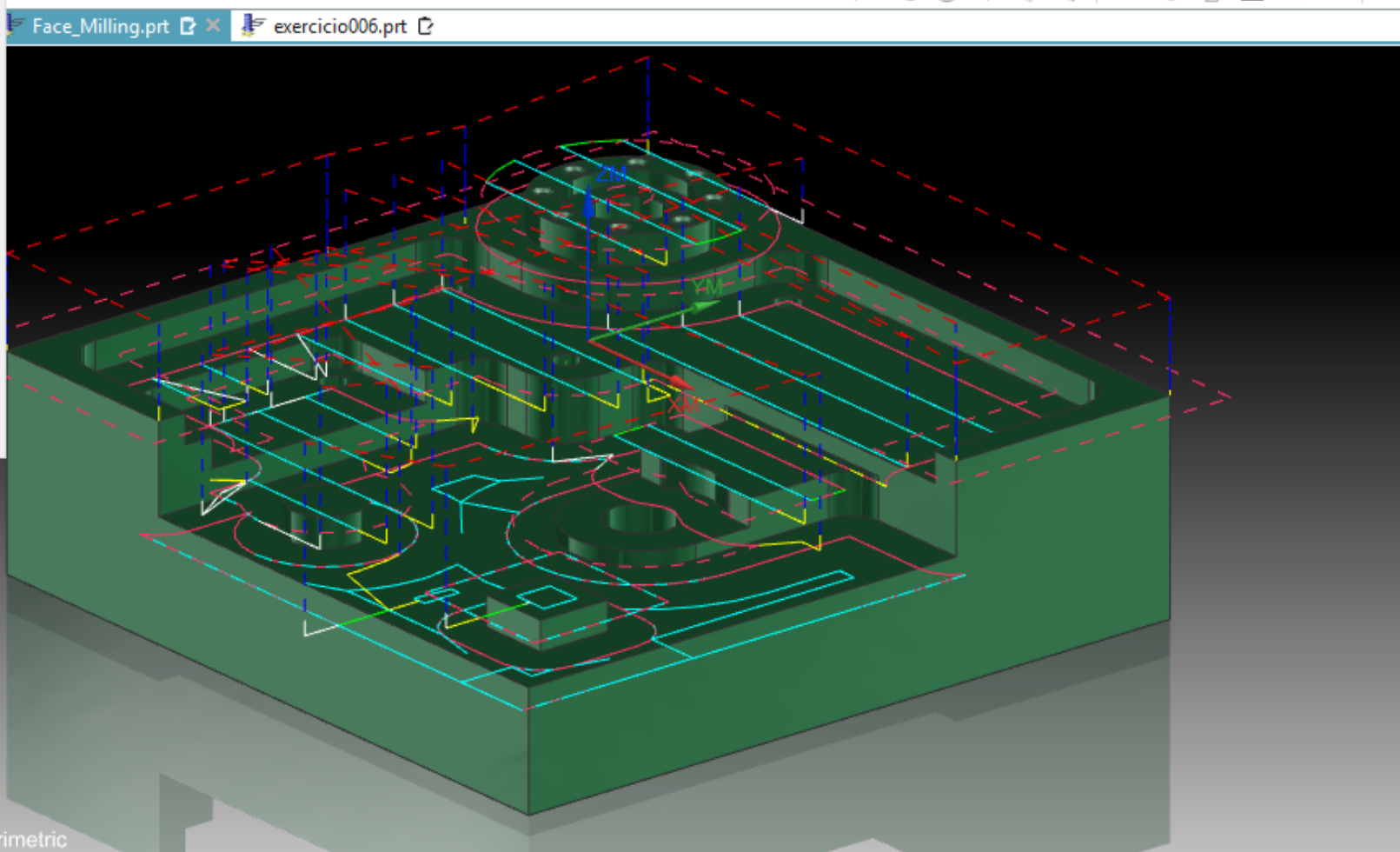
OK Back Cancel

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

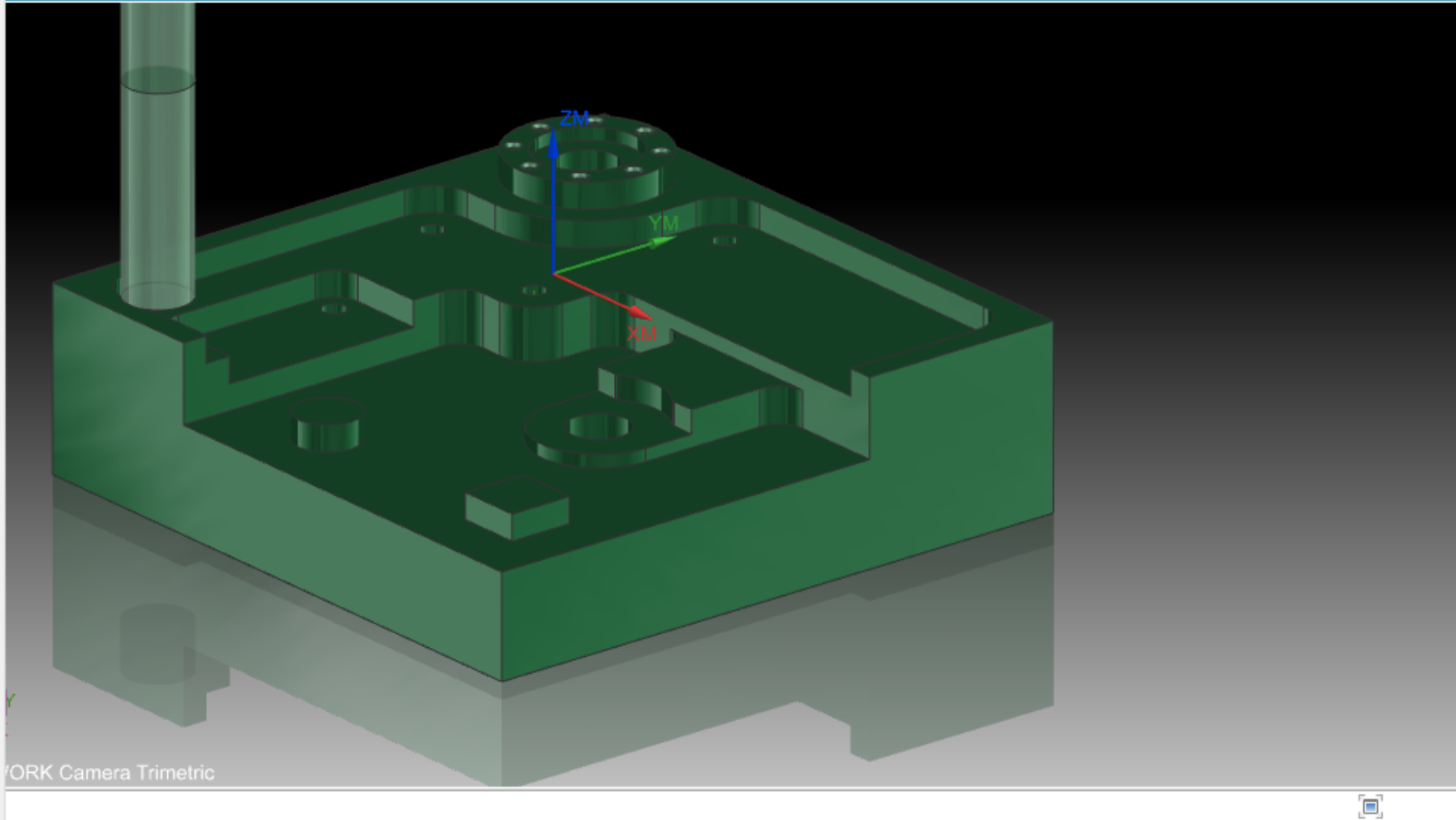
Speed 5

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

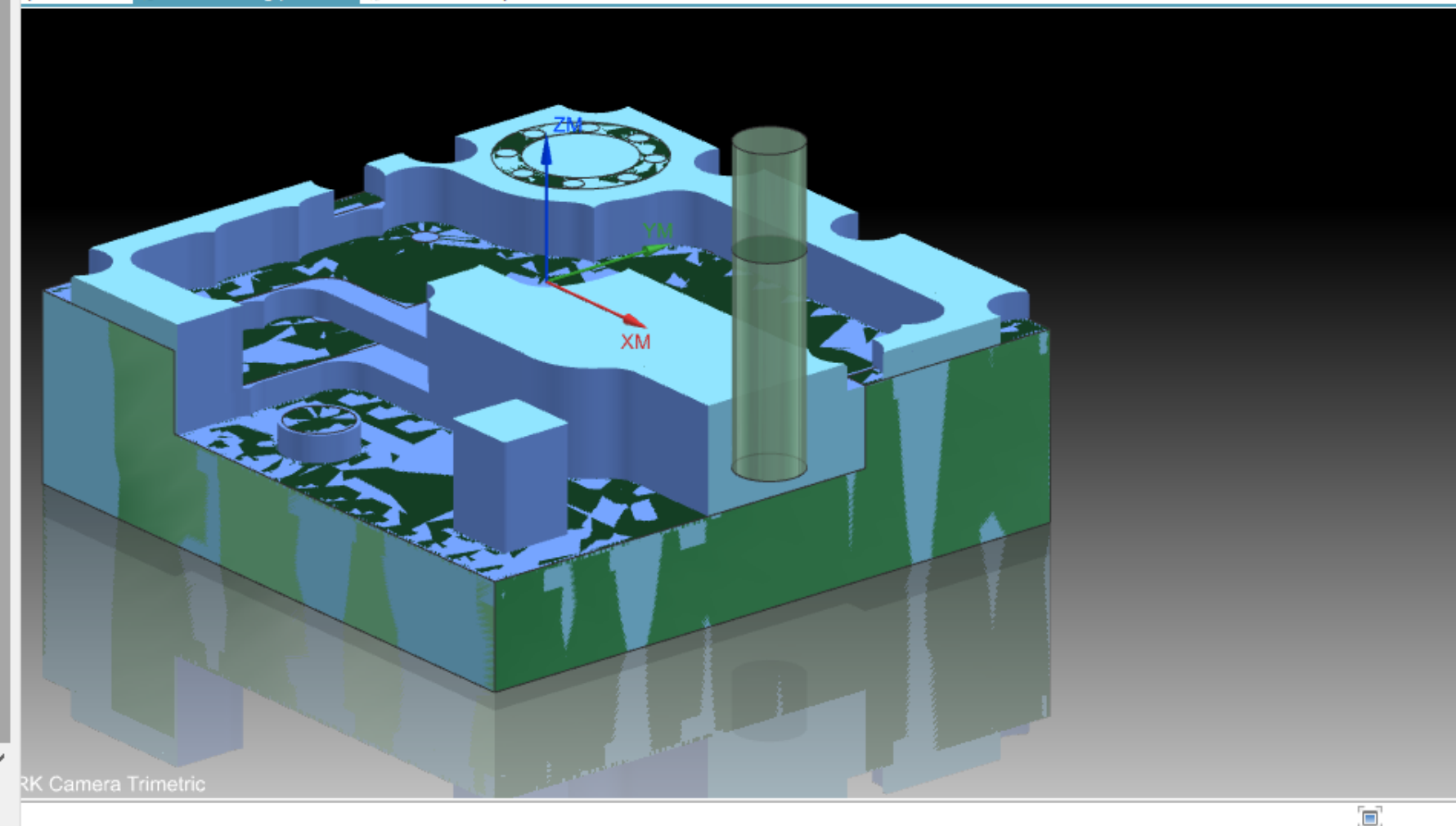
Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Operations Display Animation Workpiece

Face_Milling.prt exercicio006.prt



File Edit View Tools Application

Find a Command

Speed 5

Show 3D IPW

Analysis Geometry Synchronous Modeling Feature Tools

Operations

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

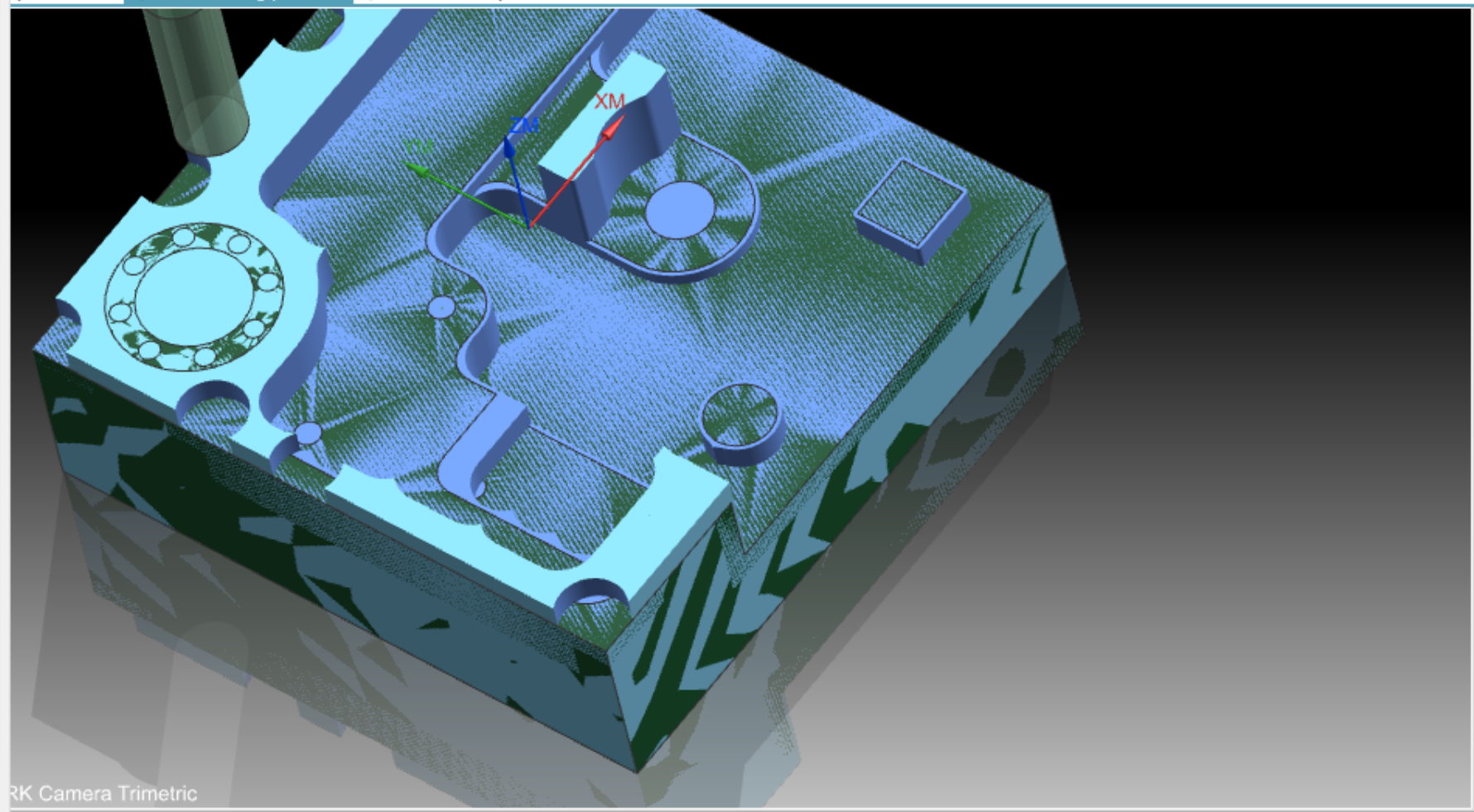
Reset

Suppress Animation

Animation Speed 6

1 10

OK Cancel



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

NX 12 - Manufacturing
SIEMENS

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

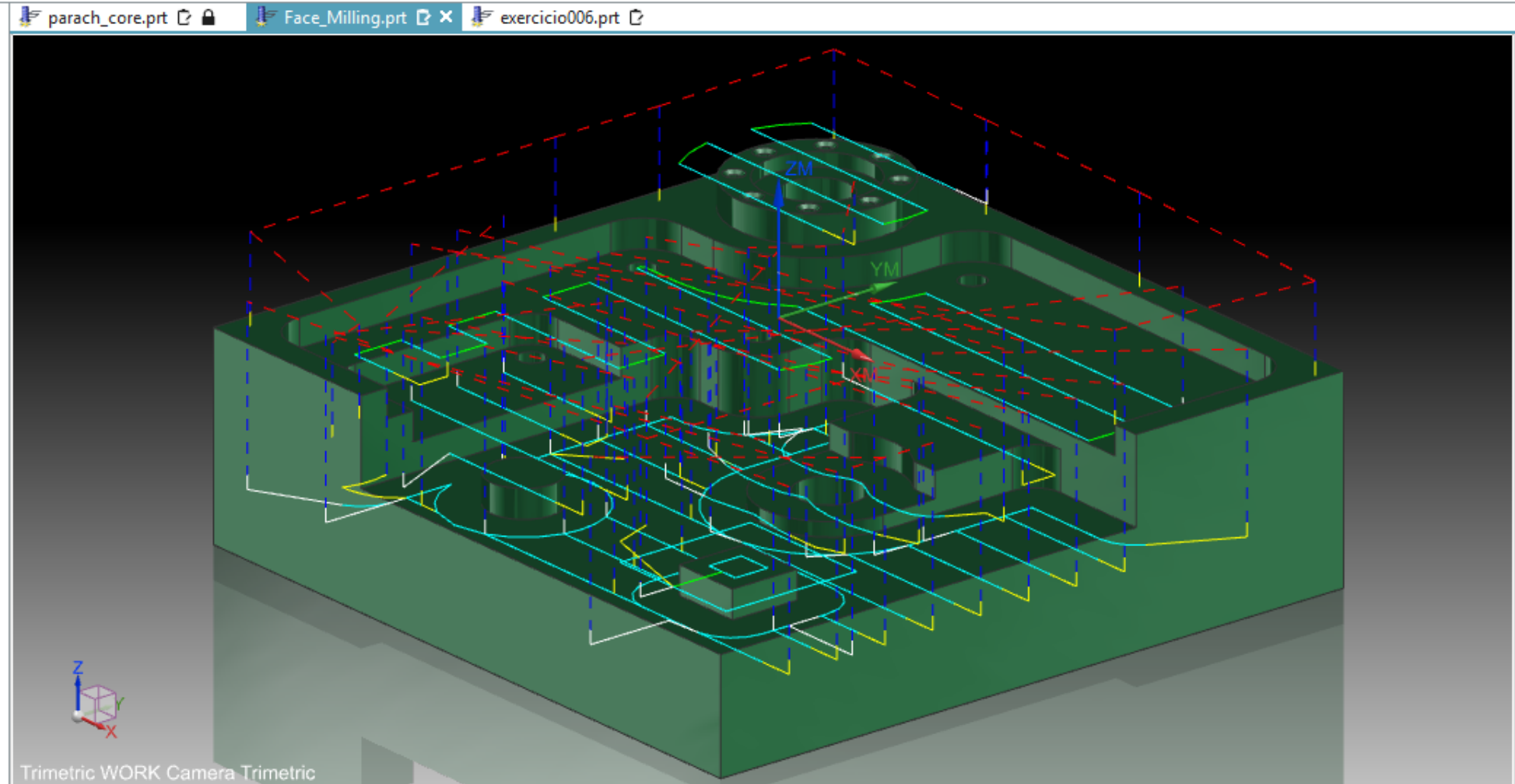
Menu No Selection Filter Entire Assembly Speed Show 3D IPW

Operation Navigator - Machine Tool

| Name | Path |
|---------------------|------|
| GENERIC_MACHINE | |
| Unused Items | |
| FRESA_16 | |
| FACE_MILLING_MANUAL | ✓ |

Dependencies ▼

Details ▼



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

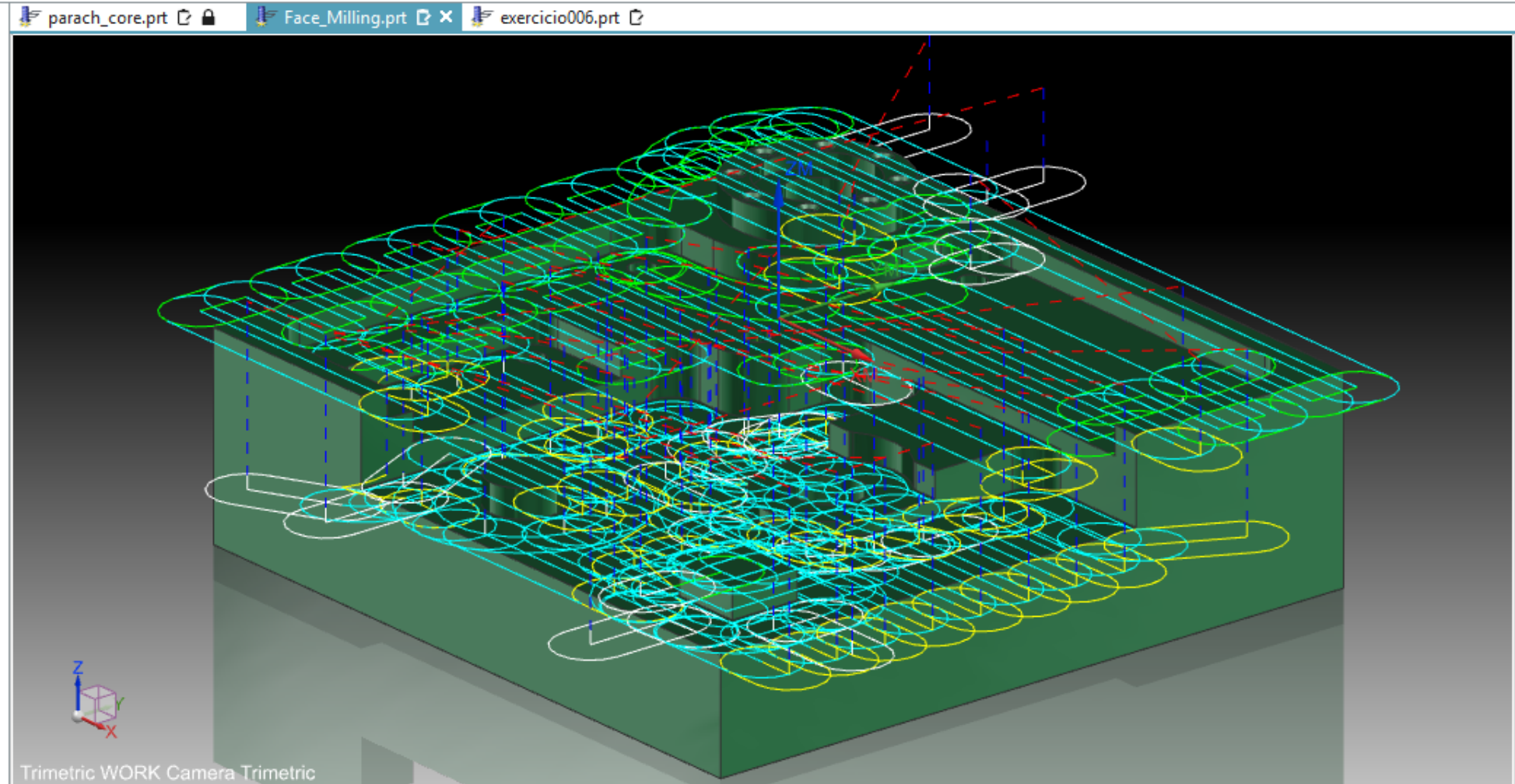
Create Tool Create Geometry Create Operation Properties Generate Tool Path Verify Tool Path Simulate Machine Post Process Shop Documentation More Display Animation Workpiece Analysis Geometry Synchronous Modeling Feature Tools

Menu No Selection Filter Entire Assembly

Operation Navigator - Machine Tool

| Name | Path |
|---------------------|------|
| GENERIC_MACHINE | |
| Unused Items | |
| FRESA_16 | |
| FACE_MILLING_MANUAL | ✓ |

[Dependencies](#) ▼
[Details](#) ▼



Select existing CSYS total 1