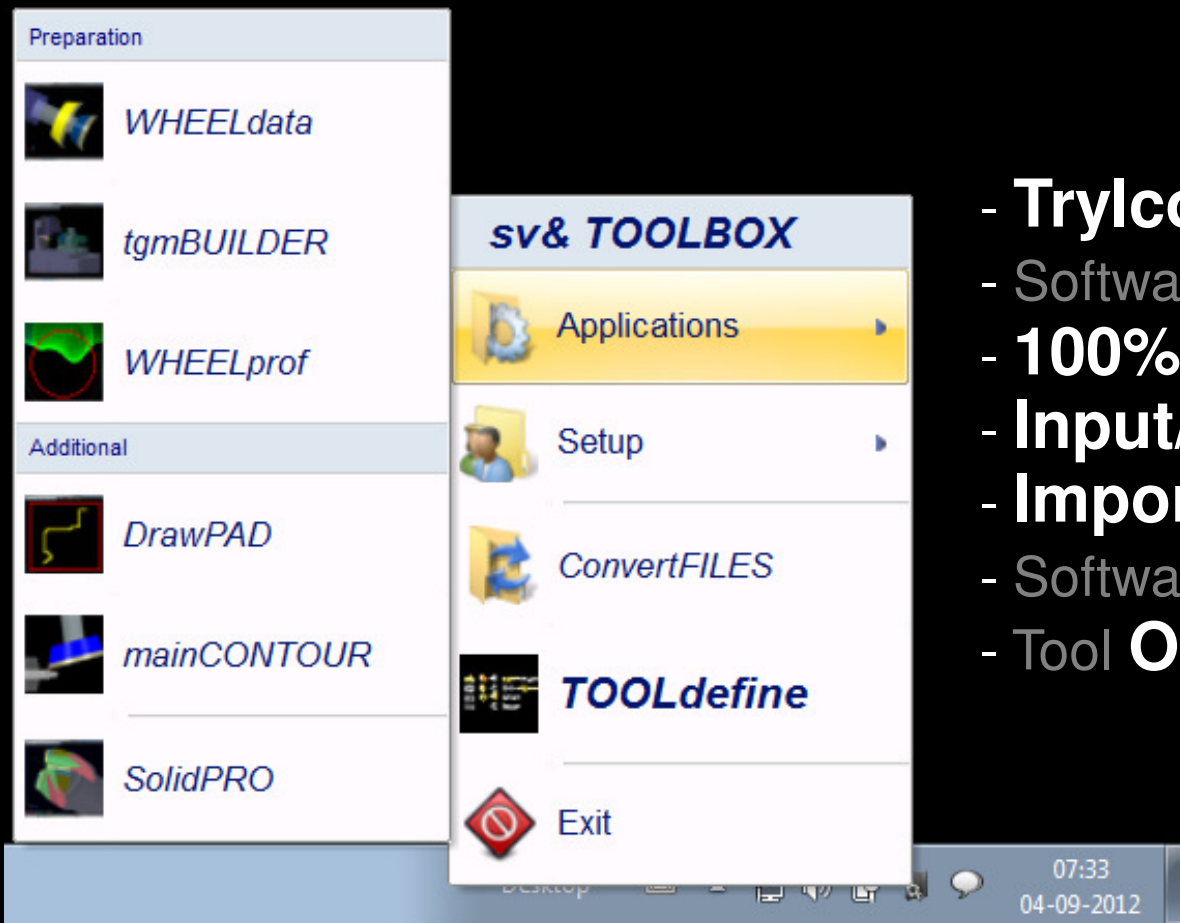


# sv& TOOLBOX (v.4f0) LECA

- **Windows 7** compatible
- **OpenGL** Graphic object oriented
- **2D/3D** - online Tools simulation
- **3D** – Machine process simulation (collision)
- **OUT/CNC** – Complete process online view
- **100%** - compatible with all older versions
- **Internet** – online technical support

# a The **TOOLBOX** menu leca



- **TryIcon** – screen position
- Software **Version** – free to select
- **100%** - multitasking applications
- **Input/View** - functionality
- **Import/Export** – convert file versions
- Software **Update** - online function
- Tool **Options** – online activate

Process

Head 2 End - Tip Endmill with head [ With Ball head ]

Tool 2 Form Milling cutter [Cylinder]

Teeth Number Type

Setup Make blank Probe Input of data mainCONTOUR

\*.TLS (TOOLdefine) General data Profile Transformation

Processing OUT-File Options

X	(1) Main Flute
X	1.Relief (circumference)
X	(2) Ball-Gashing(extra)
X	(1) Ball-Gashing
X	(1) Ball-2.Relief
X	(1) Ball-1.Relief
X	

CNC Options

<	1	(1) Main Flute
<	2	1.Relief (circumference)
<	3	(2) Ball-Gashing(extra)
<	4	(1) Ball-Gashing
<	5	(1) Ball-2.Relief
<	6	(1) Ball-1.Relief
<<		

Definition

- o TLS ..... C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls
  - o Date ..... 31-08-2012 - 14:29:26
  - o User ..... ?
  - o Version ..... v4f0
  - o End - Tip ..... Endmill with head - With Ball head
    - o Type ..... 2 to Center
  - o Form ..... Milling cutter
    - o Type ..... Cylinder
  - o Setup ..... (select)
    - o Cinematics ..... C:\SV32\HUFFMAN\Machine\HS-156F.inv
    - o Collet ..... C:\SV32\Delta TAU\Collet\Schunk D20 d8.zng
    - o Spindle ..... C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb
  - o Infeed ..... Division equal
  - o \*.FRS/\*.TRA/\*.ORZ
  - o Type of Processing ..... (select)
    - o ... ..... Production
    - o ... Processing-Depth
    - o Tool Material ..... Carbure
    - o Flute Type ..... Processing
    - o Form ..... Processing
  - o General Data ..... (select)
    - o Profile Type ..... Helix
    - o Helix direction ..... Right hand Helix
    - o Cutting edge ..... Right hand Cut
    - o ... ..... Constant Helix
  - o Extra ..... (select)
    - o FluteDEF
    - o Cutting break
    - o MacroGEN
  - o Associated Files ..... (run)

History

Message LOG

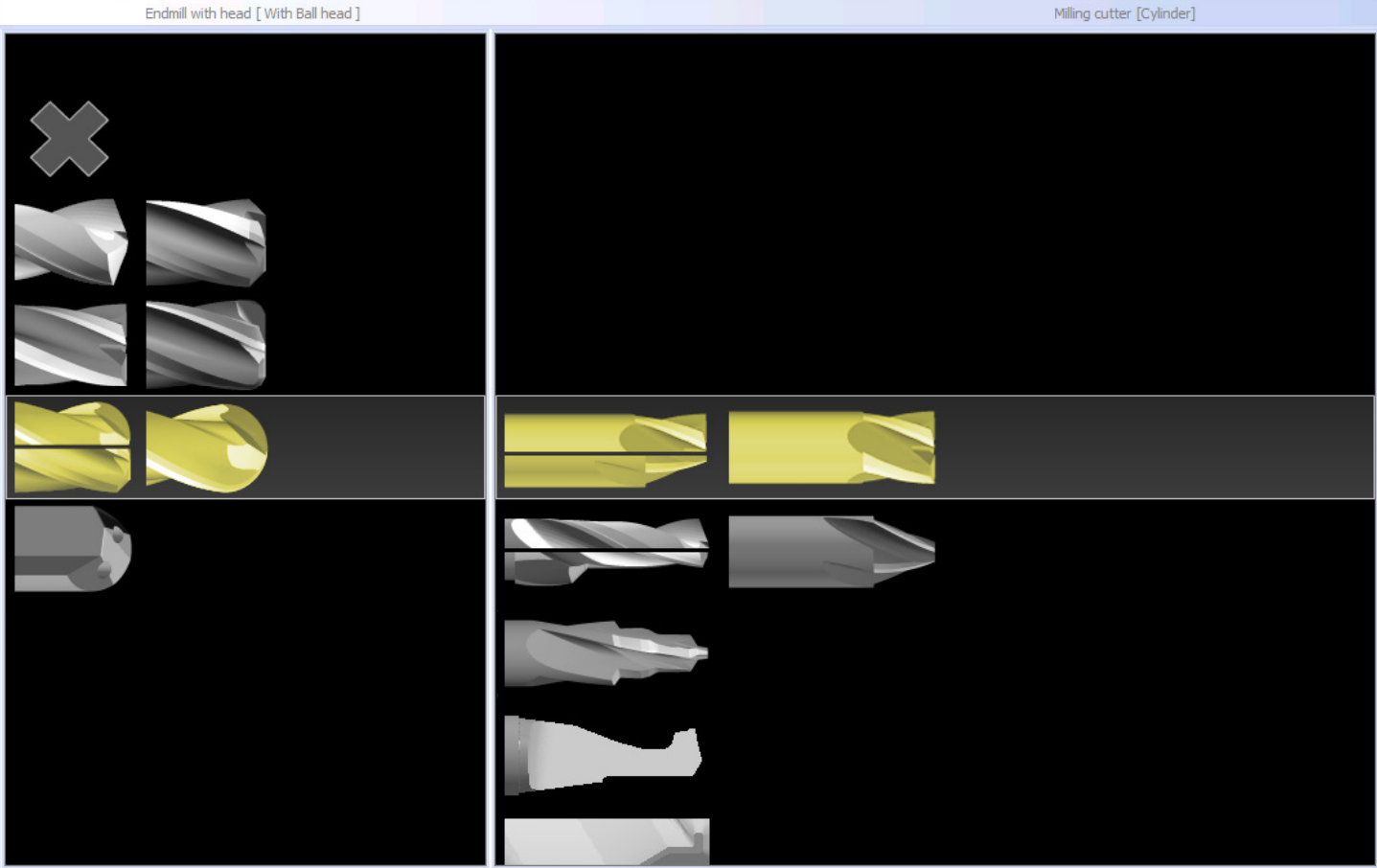
v.4f0 C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls Setup

View

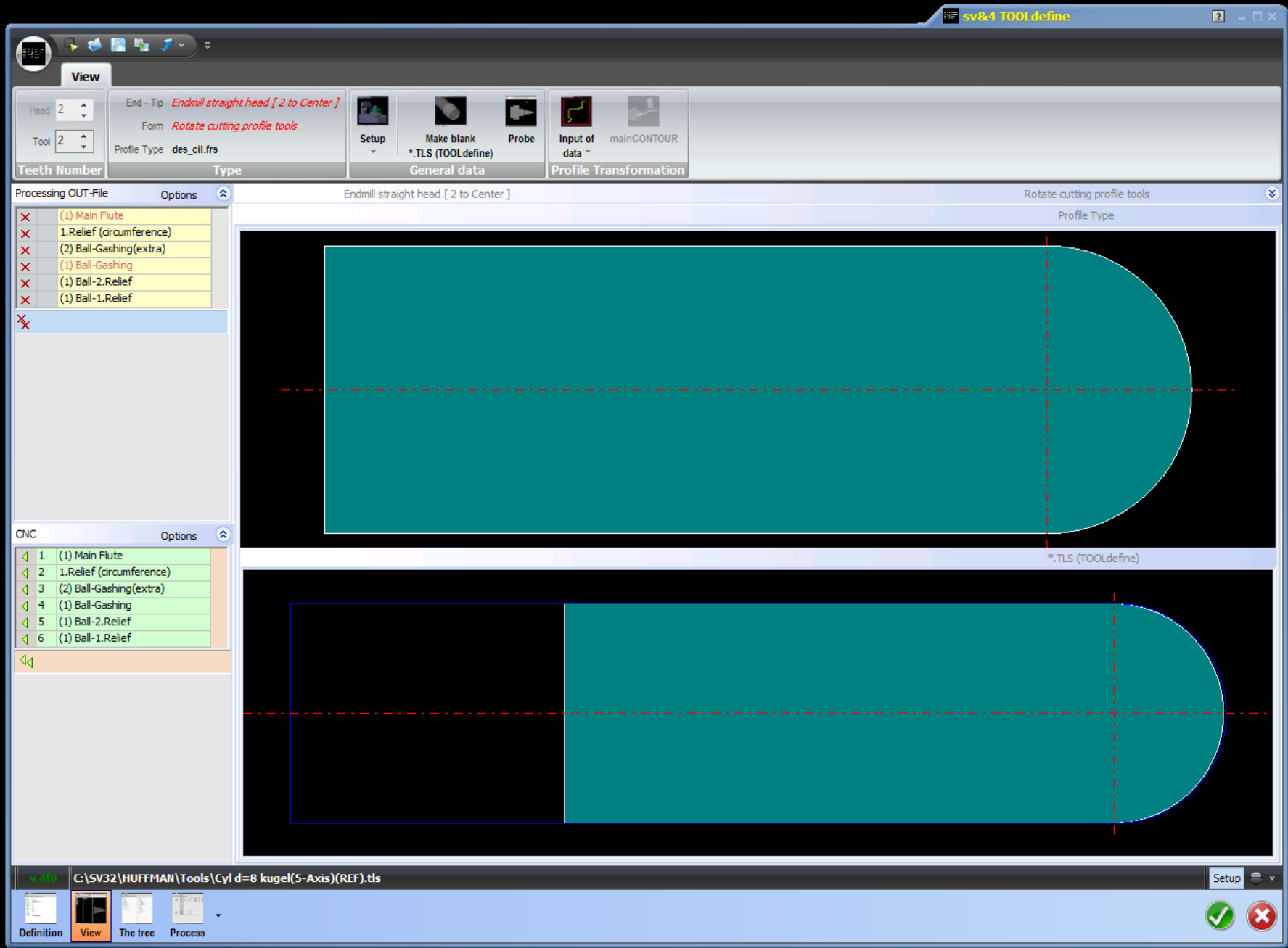
Head 2 End - Tip Endmill with head [ With Ball head ]  
Tool 2 Form Milling cutter [Cylinder] Setup Make blank \*.TLS (TOOLdefine) Probe Input of data mainCONTOUR  
Teeth Number Type General data Profile Transformation

- Processing OUT-File Options
- (1) Main Flute
  - 1.Relief (circumference)
  - (2) Ball-Gashing(extra)
  - (1) Ball-Gashing
  - (1) Ball-2.Relief
  - (1) Ball-1.Relief

- CNC Options
- 1 (1) Main Flute
  - 2 1.Relief (circumference)
  - 3 (2) Ball-Gashing(extra)
  - 4 (1) Ball-Gashing
  - 5 (1) Ball-2.Relief
  - 6 (1) Ball-1.Relief



C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls



The tree

Head 2 End - Tip Endmill with head [ With Ball head ]  
 Tool 2 Form Milling cutter [Cylinder]  
 Teeth Number Type  
 Setup Make blank \*TLS (TOOLdefine) Probe Input of data mainCONTOUR  
 General data Profile Transformation

Processing OUT-File Options

X	(1) Main Flute
X	1.Relief (circumference)
X	(2) Ball-Gashing(extra)
X	(1) Ball-Gashing
X	(1) Ball-2.Relief
X	(1) Ball-1.Relief
X	

CNC Options

<	1 (1) Main Flute
<	2 1.Relief (circumference)
<	3 (2) Ball-Gashing(extra)
<	4 (1) Ball-Gashing
<	5 (1) Ball-2.Relief
<	6 (1) Ball-1.Relief
<<	

Configuration

- Setup
  - Gashing Corr. : (input)
  - R-Gashing Corr. : (input)
  - Geometry : (input)
- Extra
  - Head-Preforming
    - Options
    - Head-cut
  - End - Tip - Endmill with head
    - End Face (Type - With Ball head)
      - 6 (1) Ball-1.Relief X
      - 5 (1) Ball-2.Relief X
      - (1) Ball-3.Relief
      - (2) Ball-1.Relief(extra)
      - (2) Ball-2.Relief(extra)
      - (2) Ball-3.Relief(extra)
    - Gashing
      - (1) Gashing
      - (2) Gashing(extra)
      - (3) Gashing(extra)
      - Gashing Correction
      - 4 (1) Ball-Gashing X
      - 3 (2) Ball-Gashing(extra) X
      - (3) Ball-Gashing(extra)

- Setup
  - (input)
- Form
  - Milling cutter (Type - Cylinder)
    - Profile Transformation : (input)
    - Options
    - 2 1.Relief (circumference) X
    - 2.Relief (circumference)
    - 3.Relief (circumference)
  - Extra
    - Milling cutter
      - Options
    - Step Drills
      - Options
    - Rotate cutting profile tools
      - Options
  - Flute processing
    - Milling cutter
      - 1 (1) Main Flute X
      - (1) Flute Rake Correction
      - (1) Flute Back Correction
  - Extra
    - FLUTEdef
    - Cutting break

\*.SCH Manager

Detail

C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls

Definition View The tree Process

Setup SolidPRO CNC

The tree

Head 2 End - Tip Endmill with head [ With Ball head ]  
Tool 2 Form Milling cutter [Cylinder] Setup Make blank Probe Input of data mainCONTOUR  
Teeth Number Type General data Profile Transformation

Processing OUT-File Options

X	(1) Main Flute
X	1.Relief (circumference)
X	(2) Ball-Gashing(extra)
X	(1) Ball-Gashing
X	(1) Ball-2.Relief
X	(1) Ball-1.Relief
X	

Configuration Options

\*.SCH Manager

- C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb (Carbure)
- 1. Package
  - C:\SV32\HUFFMAN\Wheel\Spindle\002\p003.p32
    - 1-1. Wheel- 1A1 (Internal)
      - C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32
    - 1-2. Wheel- 12V9 (External)
      - C:\SV32\HUFFMAN\Wheel\Spindle\002\12V9 D46 diam=75 (test).s32
        - 6 (1) Ball-1.Relief
        - 5 (1) Ball-2.Relief
    - 1-3. Wheel- 1A1 (Internal)
      - C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D126 Ø100 1A1.s32
        - 4 (1) Ball-Gashing
        - 3 (2) Ball-Gashing(extra)
        - 2 1.Relief (circumference)
        - 1 (1) Main Flute

CNC Options

<	1	(1) Main Flute
<	2	1.Relief (circumference)
<	3	(2) Ball-Gashing(extra)
<	4	(1) Ball-Gashing
<	5	(1) Ball-2.Relief
<	6	(1) Ball-1.Relief

C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls

Definition View The tree Process

Setup SolidPRO CNC

The tree

Head 2 End - Tip Endmill with head [ With Ball head ]

Teeth Number 2 Form Milling cutter [Cylinder]

Setup Make blank \*TLS (TOOLdefine) Probe

General data Input of data mainCONTOUR

Profile Transformation

- Processing OUT-File Options
- (1) Main Flute
  - 1.Relief (circumference)
  - (2) Ball-Gashing(extra)
  - (1) Ball-Gashing
  - (1) Ball-2.Relief
  - (1) Ball-1.Relief
- ↑ ↓

- CNC Options
- < 1 (1) Main Flute
  - < 2 1.Relief (circumference)
  - < 3 (2) Ball-Gashing(extra)
  - < 4 (1) Ball-Gashing
  - < 5 (1) Ball-2.Relief
  - < 6 (1) Ball-1.Relief
- << ↑ ↓

Configuration

\*.SCH Manager

Detail

- o Comment :...
- o Back
- o Processing direction
- o Lapping
- o Waiting time
- o Oscillate
- o Geometry : (open)
- o Cinematics : (open)
- o Infeed : (...) 200
- o Sec. Engagement : (open) +
  - o Engagement / Disengagement
  - o X :
  - o Y :
  - o Z : (3.0000) From Top / (3.0000) To Top
  - o Correction : (open) X
  - o Parameter : (open) X
- o Spindle : C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb
  - 1 C:\SV32\HUFFMAN\Wheel\Spindle\002\p003.p32
  - Wheel position :Up
  - o Simulation color : (open)
  - Simulate -2D-3D



The tree

Head 2 End - Tip Endmill with head [ With Ball head ]

Tool 2 Form Milling cutter [Cylinder]

Teeth Number Type

Setup Make blank Probe Input of data mainCONTOUR

General data Profile Transformation

Processing OUT-File Options Configuration

- X (1) Main Flute
- X 1.Relief (circumference)
- X (2) Ball-Gashing(extra)
- X (1) Ball-Gashing
- X (1) Ball-2.Relief
- X (1) Ball-1.Relief

Options

CNC Options

- < 1 (1) Main Flute
- < 2 1.Relief (circumference)
- < 3 (2) Ball-Gashing(extra)
- < 4 (1) Ball-Gashing
- < 5 (1) Ball-2.Relief
- < 6 (1) Ball-1.Relief

Options

\*.SCH Manager

Detail

- o Comment :
- o CNC-Processing Send ✓
- o Engagement : (open) +
  - o Wheel position: Up
    - o X : 150 mm
    - o Y : 50 mm
    - o Z : 100 mm
    - o C : 0 grd
  - o Parking ✓
    - o X : 1
    - o Y : 1
    - o Z : 2
    - o C : 1
  - o End of cycle ✓
    - o X : 2
    - o Y : 2
    - o Z : 1
    - o C : 2
  - o End of cycle ✓
    - o X : 2
    - o Y : 2
    - o Z : 1
    - o C : 2
- o Subprogram :
- o Infeed : (+)|-1.0|200
- o Feed : (open) X
- o Correction : (open) X
- o Spindle : C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb
  - 1 C:\SV32\HUFFMAN\Wheel\Spindle\002\p003.p32
- o Wheel ✓

Process

Head 2 End - Tip Endmill with head [ With Ball head ]  
 Tool 2 Form Milling cutter [Cylinder]  
 Teeth Number Type

Setup Make blank \*TLS (TOOLdefine) Probe Input of data mainCONTOUR  
 General data Profile Transformation

Processing OUT-File Technology Options

X	(1) Main Flute	(...) 20								(Nr 125_2) D 126 Ø 100 1A1	Up
X	1.Relief (circumference)	(...) 20								(Nr 125_2) D 126 Ø 100 1A1	Up
X	(2) Ball-Gashing(extra)	(...) 100								(Nr 125_2) D 126 Ø 100 1A1	Up
X	(1) Ball-Gashing	(...) 200								(Nr 125_2) D 126 Ø 100 1A1	Up
X	(1) Ball-2.Relief	(...) 100								12V9 D46 diam=75 (test)	Up
X	(1) Ball-1.Relief	(...) 100								12V9 D46 diam=75 (test)	Up

Default... Reset... Default... Reset... Up

CNC Technology Options

1	(1) Main Flute	✓ (+)-1.0 70	x					p003	1	(Nr 125_2) D 126 Ø 100 1A1	✓
2	1.Relief (circumference)	✓ (-)-1.0 100						p003	1	(Nr 125_2) D 126 Ø 100 1A1	✓
3	(2) Ball-Gashing(extra)	✓ (+)-1.0 240						p003	1	(Nr 125_2) D 126 Ø 100 1A1	✓
4	(1) Ball-Gashing	✓ (+)-1.0 200						p003	1	(Nr 125_2) D 126 Ø 100 1A1	✓
5	(1) Ball-2.Relief	✓ (+)-1.0 150						p003	1	12V9 D46 diam=75 (test)	✓
6	(1) Ball-1.Relief	✓ (+)-1.0 150						p003	1	12V9 D46 diam=75 (test)	✓

Default... Default... Default... Reset...

C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls

Definition View The tree Process

Setup CNC SolidPRO

Process

Head 2 End - Tip Endmill with head [ With Ball head ]

Tool 2 Form Milling cutter [Cylinder] Setup Make blank Probe Input of data mainCONTOUR

Teeth Number

Processing OUT-File

X	(1) Main Flute
X	1.Relief (circumfer
X	(2) Ball-Gashing(ex
X	(1) Ball-Gashing
X	(1) Ball-2.Relief
X	(1) Ball-1.Relief
X	↑ ↓

CNC

<	1	(1) Main Flute
<	2	1.Relief (circumfer
<	3	(2) Ball-Gashing(ex
<	4	(1) Ball-Gashing
<	5	(1) Ball-2.Relief
<	6	(1) Ball-1.Relief
<<		↑ ↓

Setup...Cyl d=8 kugel(5-Axis)(REF).ts (v.4f0)

\*.INV \*.SPB \*.ZNG Clone Export -> mTemp.ini mTemp.ini -> Import Clear 3D-GL

Last used configuration

- Application: sv&4 TOOLdefine
- Cinematics: C:\SV32\HUFFMAN\Machine\HS-156F.inv
- Spindle: C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb
- Tool Material: Carbure
- Collet: C:\SV32\DeltaTAU\Collet\Schunk D20 d8.zng

TLS-File configuration

- \*.TLS: C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).ts
- Cinematics: C:\SV32\HUFFMAN\Machine\HS-156F.inv
- Spindle: C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb
- Tool Material: Carbure
- Collet: C:\SV32\DeltaTAU\Collet\Schunk D20 d8.zng

Selected configuration ( TLS-File configuration)

- C:\SV32\HUFFMAN\Machine\HS-156F.inv ✓
- HUFFMAN (USA) / HS-156F / FANUC-15i
- C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb ✓ (Carbure) sv&4 WHEELdata
- 1. Package
  - 1-1. Wheel- 1A1 (Internal)
    - C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32
  - 1-2. Wheel- 12V9 (External)
    - C:\SV32\HUFFMAN\Wheel\Spindle\002\12V9 D46 diam=75 (test).s32
  - 1-3. Wheel- 1A1 (Internal)
    - C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D126 Ø100 1A1.s32
- C:\SV32\DeltaTAU\Collet\Schunk D20 d8.zng ✓
- 8.0000 / C:\SV32\DeltaTAU\Drawing\Schunk D20.zgp

HS-156F.inv + (\*.inv)

Options

A1	Up
A1	Up
A1	Up
A1	Up
t)	Up
t)	Up
	Up

Options

A1	✓
A1	✓
A1	✓
A1	✓
t)	✓
t)	✓
	↕

**Process**

Head 2 End - Tip Endmill with head [ With Ball head ]

Tool 2 Form Milling cutter [Cylinder]

Teeth Number Type

Setup Make blank \*.TLS (TOOLdefine) Probe Input of data mainCONTOUR

General data Profile Transformation

Processing OUT-File

- (1) Main F
- 1.Relief (c
- (2) Ball-Ge
- (1) Ball-Ge
- (1) Ball-2.
- (1) Ball-1.

- CNC
- 1 (1) Main F
  - 2 1.Relief (c
  - 3 (2) Ball-Ge
  - 4 (1) Ball-Ge
  - 5 (1) Ball-2.
  - 6 (1) Ball-1.

**\*.tls3D - 3D View**

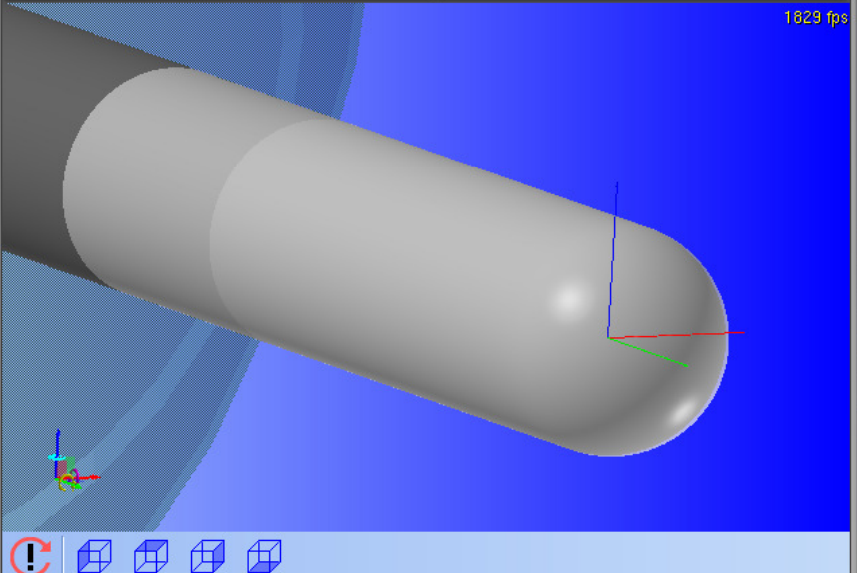
View Measure

Zoom Out Zoom In

Window

Movement

1829 fps



3D View 2D View

										Options
									(Nr125_2) D126 Ø100 1A1	Up
									(Nr125_2) D126 Ø100 1A1	Up
									(Nr125_2) D126 Ø100 1A1	Up
									(Nr125_2) D126 Ø100 1A1	Up
									12V9 D46 diam=75 (test)	Up
									12V9 D46 diam=75 (test)	Up

Reset... Default... Reset... Up

**Profile Type**

Blank \*.TLS (TOOLdefine)

Profile

End Stock Removal -0.1000 mm

Calculate And Simulate Yes

Profile-Length 10.0000 mm

- \*.TLS (TOOLdefine)
- \*.FRS (DRAWpad)
- Cylinder
- Optimal Cylinder
- \*.TSC (STL)
- The prism

Options

- ✓
- ✓
- ✓
- ✓

C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls

Process

Head 2 End - Tip Endmill with head [ With Ball head ]  
 Tool 2 Form Milling cutter [Cylinder] Setup Make blank \*.TLS (TOOLdefine) Probe Input of data mainCONTOUR  
 Teeth Number Type General data Profile Transformation

Processing OUT-File Technology Options

X	(1) Main Flute	(...) 20						(Nr125_2) D126 Ø100 1A1	Up
X	1.Relief (circumference)							Ø126 Ø100 1A1	Up
X	(2) Ball-Gashing(extra)							126 Ø100 1A1	Up
X	(1) Ball-Gashing							126 Ø100 1A1	Up
X	(1) Ball-2.Relief							am=75 (test)	Up
X	(1) Ball-1.Relief							am=75 (test)	Up
X	↑ ↓							Up	

CNC

<	1	(1) Main Flute
<	2	1.Relief (circumference)
<	3	(2) Ball-Gashing(extra)
<	4	(1) Ball-Gashing
<	5	(1) Ball-2.Relief
<	6	(1) Ball-1.Relief
<<	↑ ↓	

(1) Ball-Gashing <Wheel>

New Setup 3D-GL Options View

Current active wheel  
 Wheel- 1A1 (Internal)  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\Nr125\_2\ D126 Ø100 1A1.s32

Active spindle  
 C:\SV32\HUFFMAN\Machine\HS-156F.inv  
 HUFFMAN (USA) / HS-156F / FANUC-15i  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb (Carbure) sv&4 WHEELdata  
 1. Package  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\p003.p32  
 1-1. Wheel- 1A1 (Internal)  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32  
 1-2. Wheel- 12V9 (External)  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\12V9 D46 diam=75 (test).s32  
 1-3. Wheel- 1A1 (Internal)  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\Nr125\_2\ D126 Ø100 1A1.s32

New selected wheel  
 Wheel- 1A1 (Internal)  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\Nr125\_2\ D126 Ø100 1A1.s32 sv&4 WHEELdata

Options

Ø126 Ø100 1A1	✓
Ø126 Ø100 1A1	✓
Ø126 Ø100 1A1	✓
Ø126 Ø100 1A1	✓
am=75 (test)	✓
am=75 (test)	✓

C:\SV32\HUFFMAN\Tools\Cyl d=8 kugel(5-Axis)(REF).tls

sv&4 WHEELdata

Grinding wheel

New Open Save Save As... History Info \*.SCX General Image

\*.S32 Extra

C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32

C:\SV32\HUFFMAN\Machine\HS-156F.inv  
 HUFFMAN (USA) / HS-156F / FANUC-15i  
 C:\SV32\HUFFMAN\Wheel\Spindle\002\002.spb

1. Package

- 1-1. Wheel- 1A1 (Internal)
  - C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32
- 1-2. Wheel- 12V9 (External)
  - C:\SV32\HUFFMAN\Wheel\Spindle\002\12V9 D46 diam=75 (test).s32
- 1-3. Wheel- 1A1 (Internal)
  - C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D126 Ø100 1A1.s32

EXPERT

Preset	L1= 75.000	0.000	L3= 80.000	L2= 80.000
Diameter (Measured)	D1= 125.000	125.283	D3= 115.341	D2= 115.341
Width Side	l1= 5.100	5.000	l3= 0.000	l2= 5.100
Corner Radius	R1= 0.100		R3=	R2= 0.100
Angle Side	A1= 0.000	45.000	A3=	A2= 0.000

C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32 Setup

Wheel Data Package Spindle

\*.s32 - 2D Wheel view

View Measure

Open Save 2D Longitudinal L-measure Cross L-measure Undo measure Select Select Select Options

\*.MS2 Measure Selection information

R1=0.100mm

5.000mm

45.0000grd

7.071mm

5.100mm

5.100mm

A1=0.0000grd

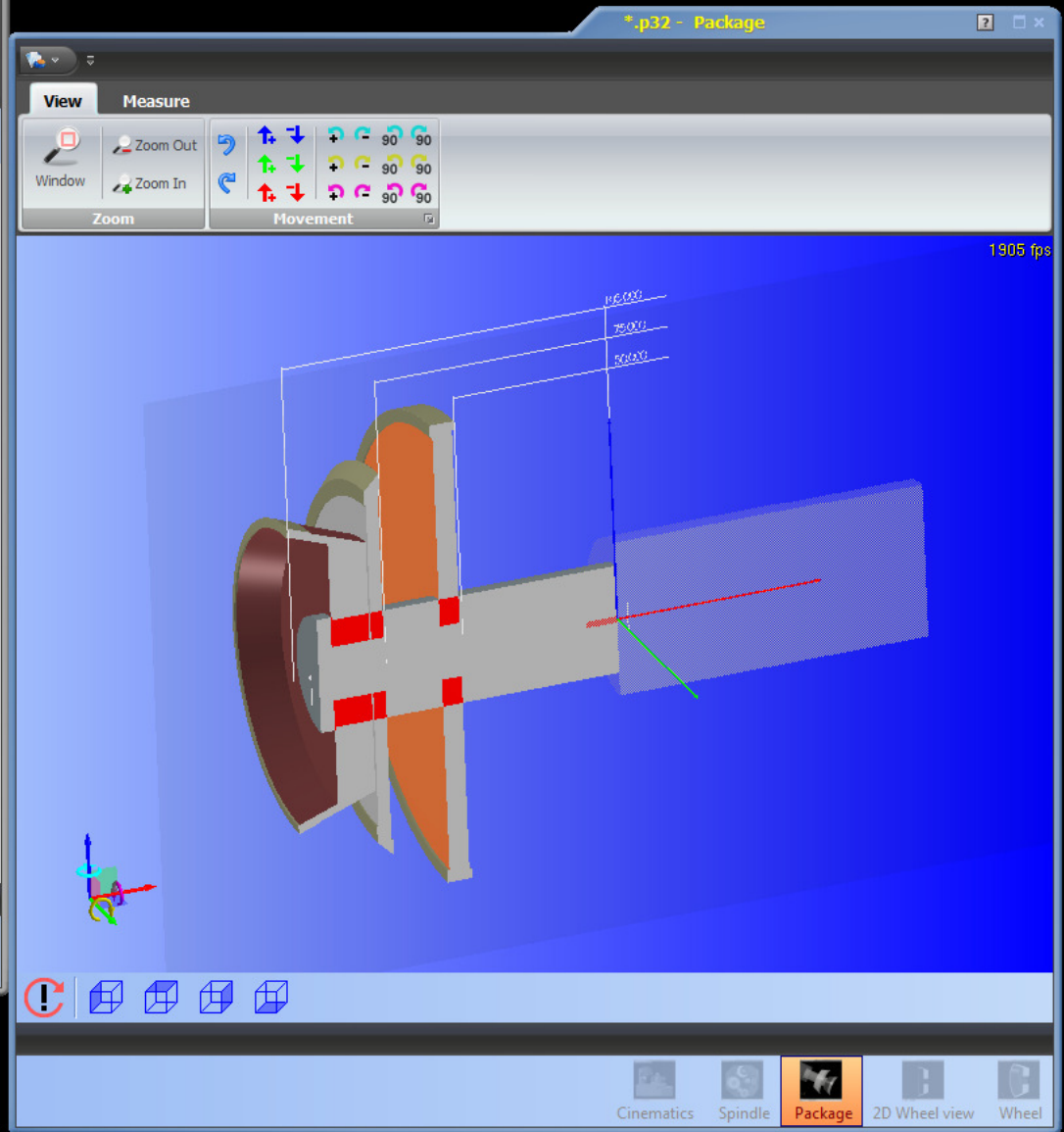
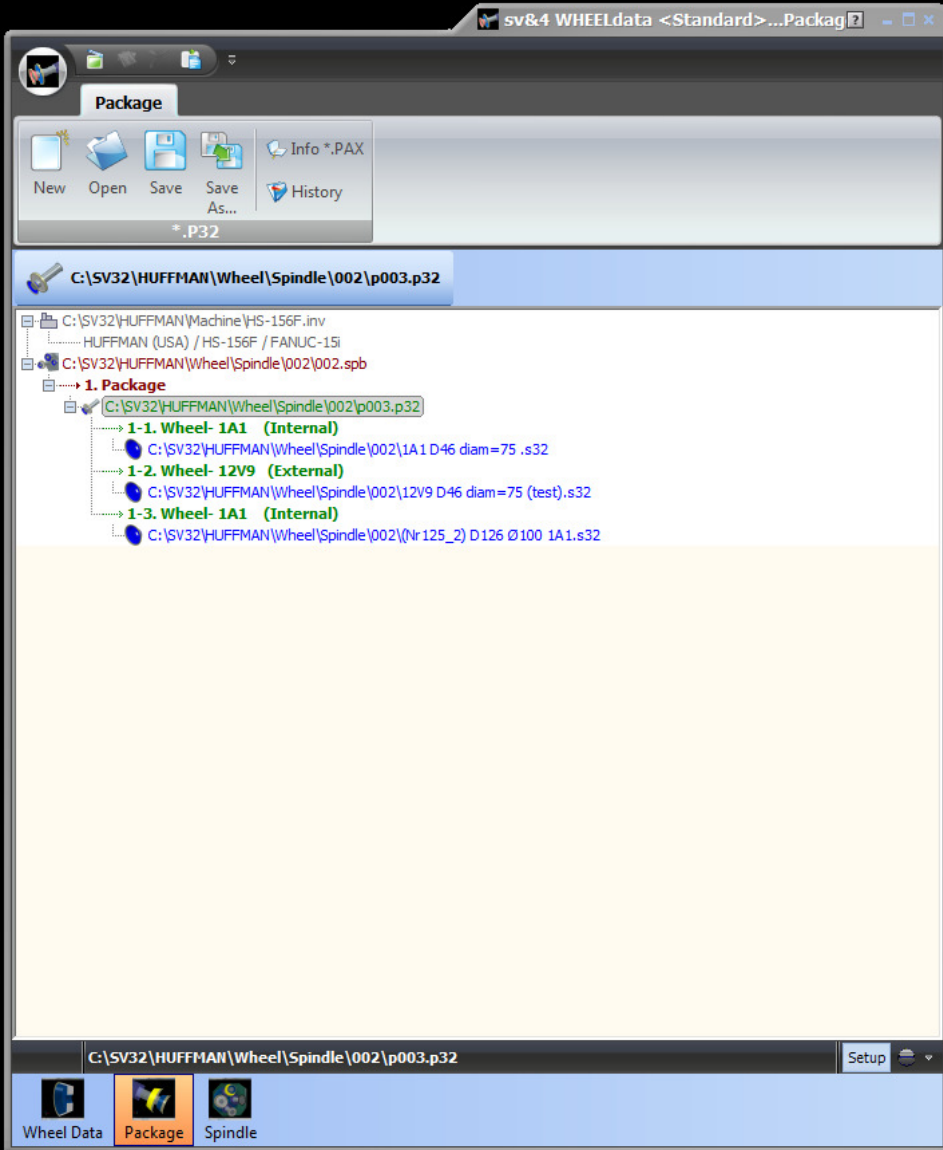
A2=0.0000grd

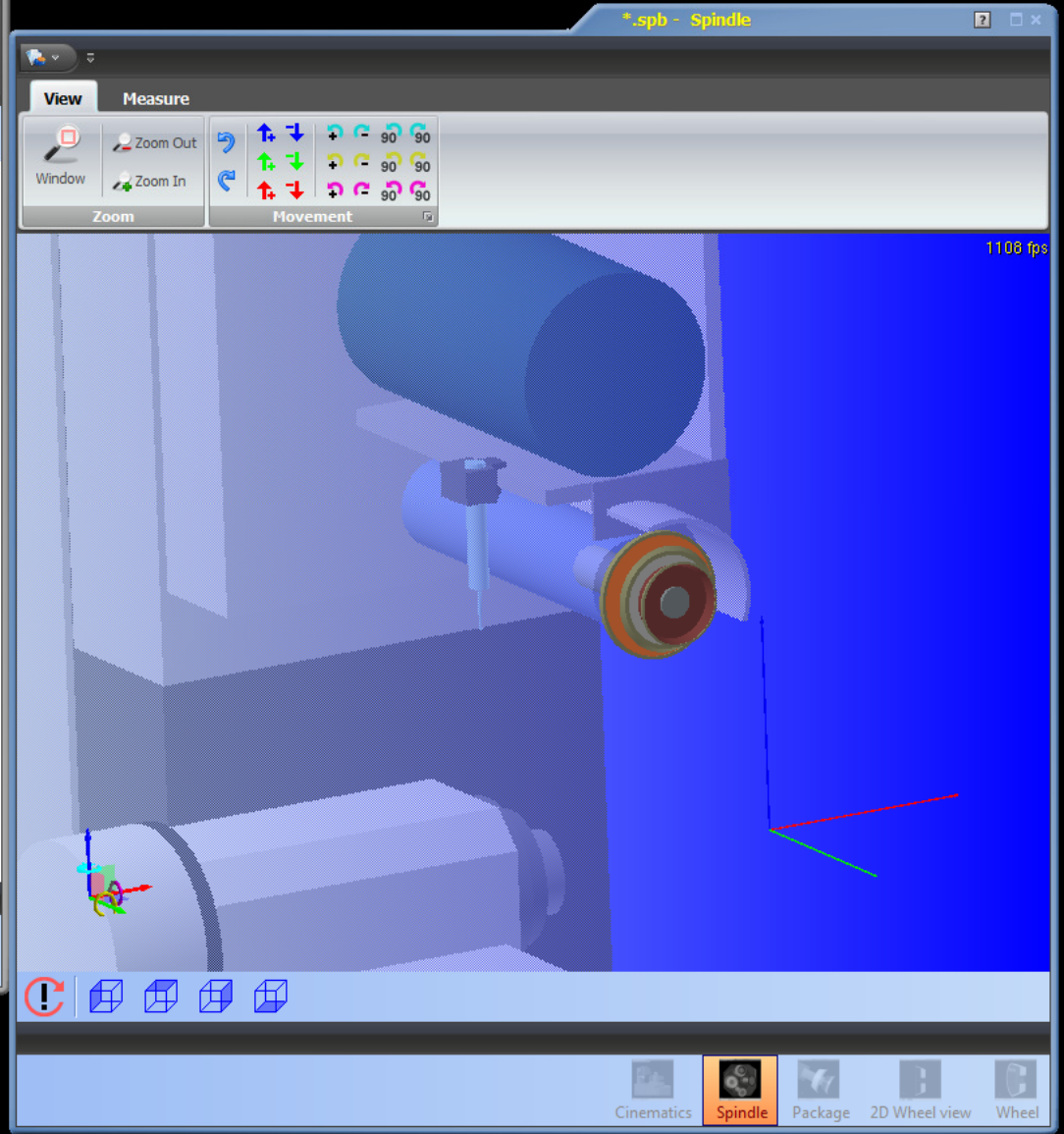
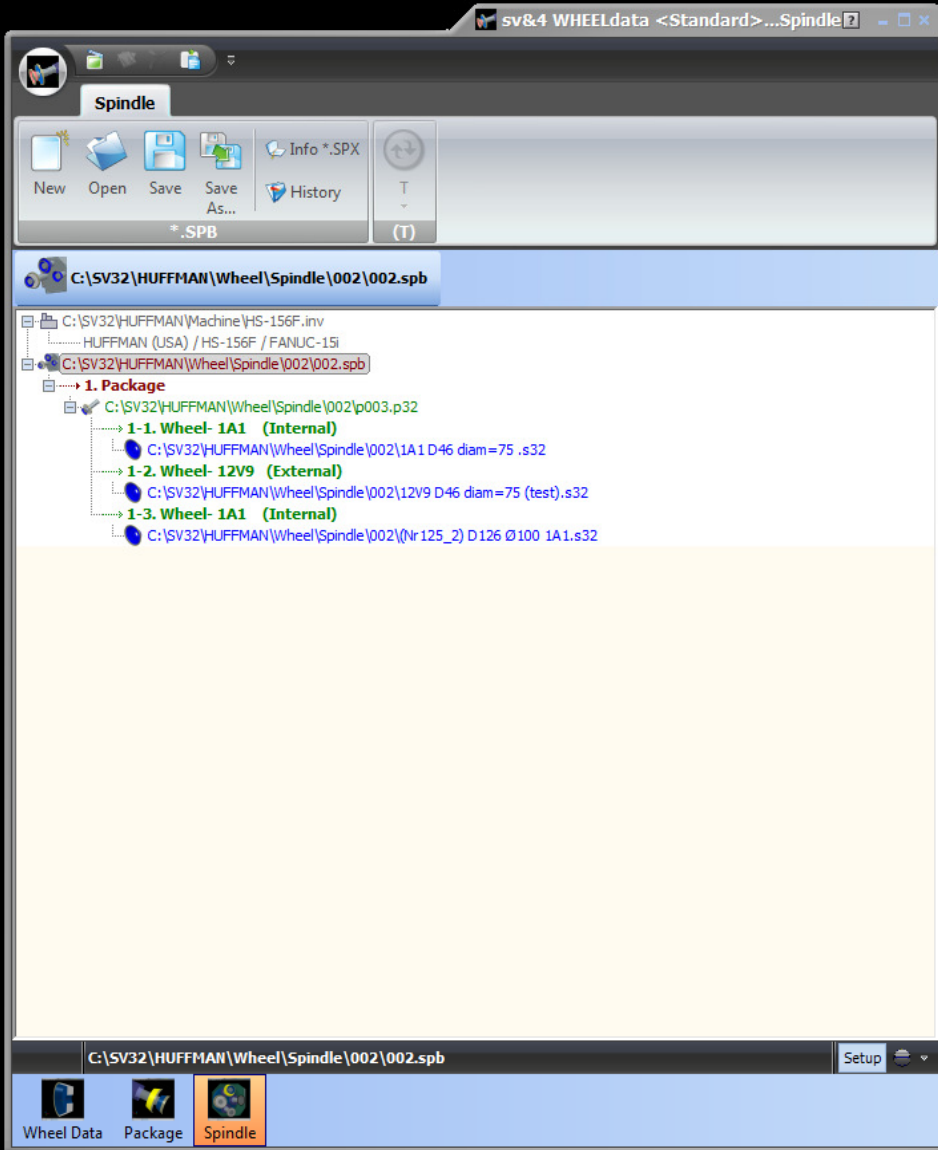
R2=0.100mm

! Grid

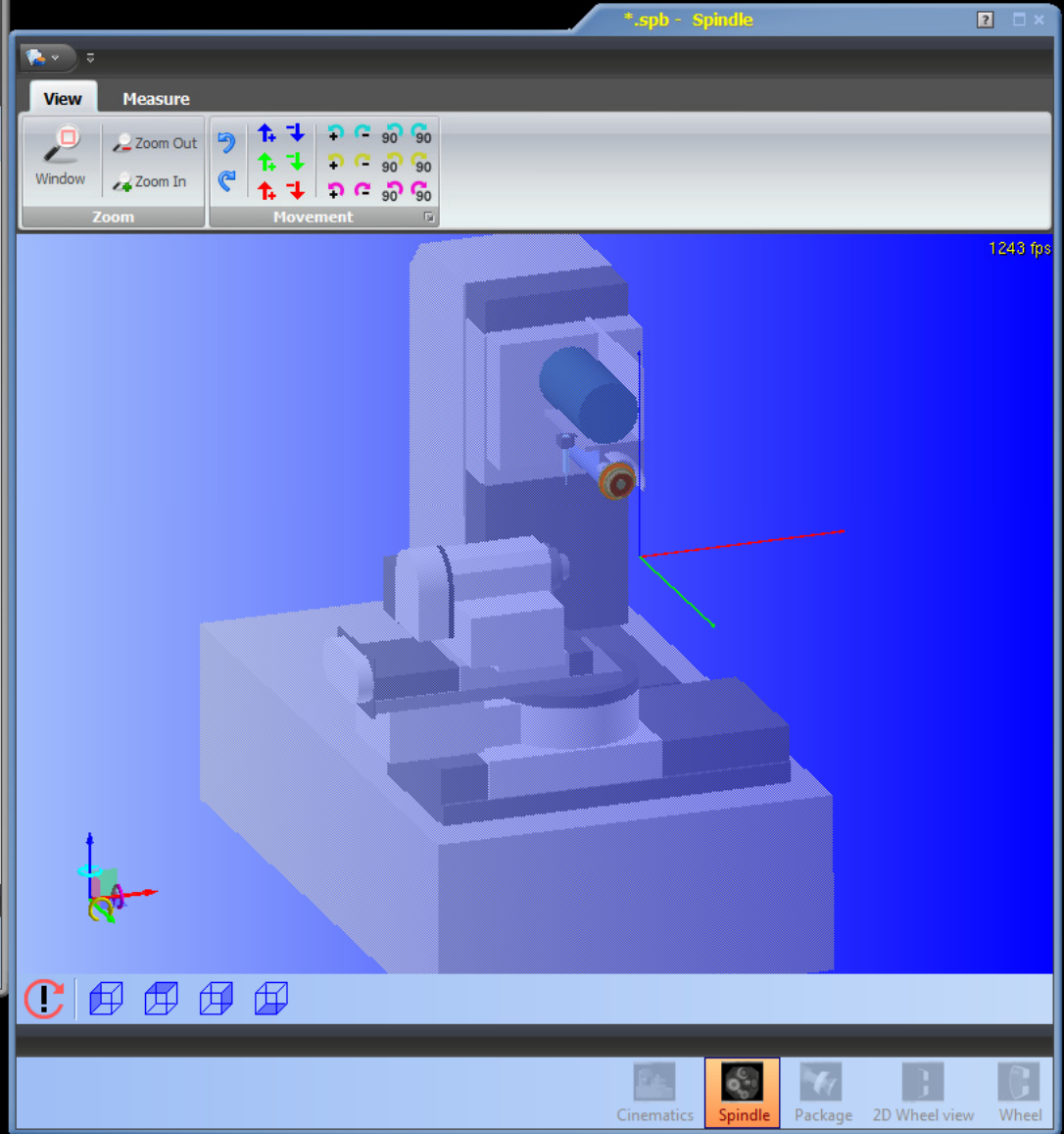
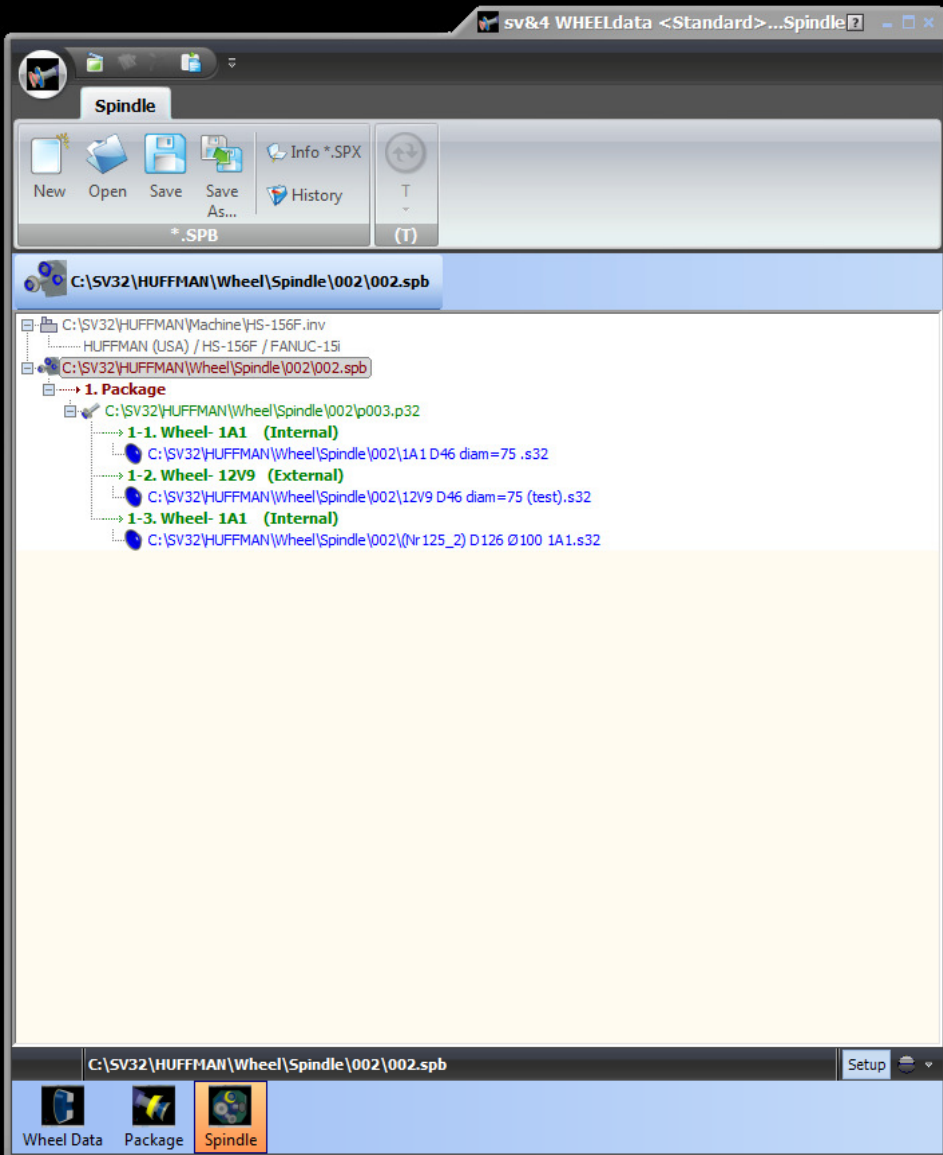
X: -10.990 Y: 67.888 Internal C:\SV32\HUFFMAN\Wheel\Spindle\002\1A1 D46 diam=75 .s32 83 %

Cinematics Spindle Package 2D Wheel view Wheel







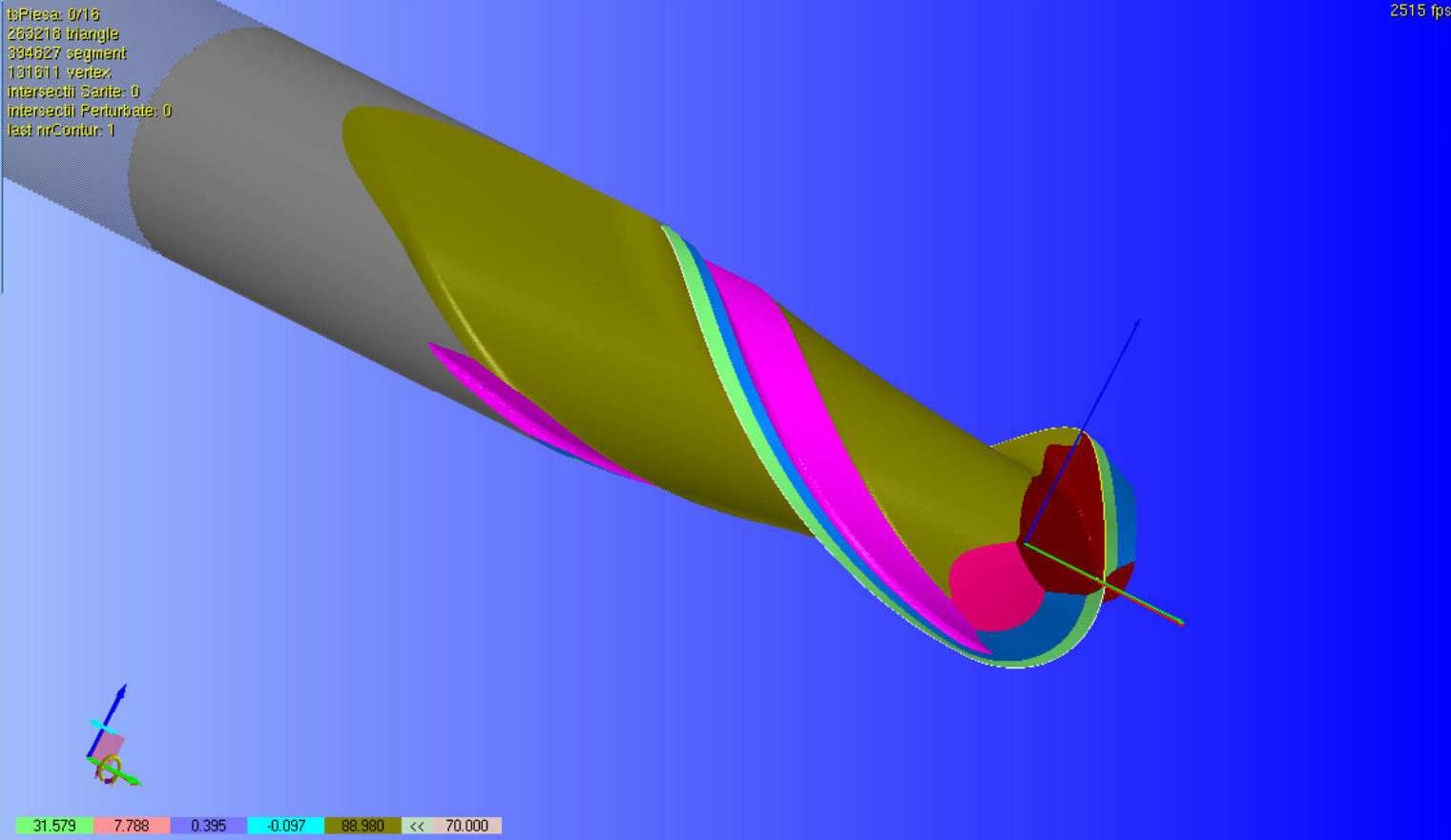


Simulate View Measure

Simulation Setup Additional \*.TLS (TOOLdefine) Options View Tool testing Representation DXF Settings SolidPRO

- OUT 6/6
- (1) Main Flute  
Voxel 30% - 30% [00:17:954]
- 1.Relief (circumference)  
Voxel 30% - 30% [00:08:487]
- (2) Ball-Gashing(extra)  
Voxel 30% - 30% [00:05:318]
- (1) Ball-Gashing  
Voxel 30% - 30% [00:07:903]
- (1) Ball-2.Relief  
Voxel 30% - 30% [00:11:120]
- (1) Ball-1.Relief  
Voxel 30% - 30% [00:11:701]

tsPieca: 0/16  
263218 triangle  
394827 segment  
131811 vertex  
Intersectii Sarite: 0  
Intersectii Perturbate: 0  
last nrContur: 1



31.579 7.788 0.395 -0.097 88.980 << 70.000

Section selection

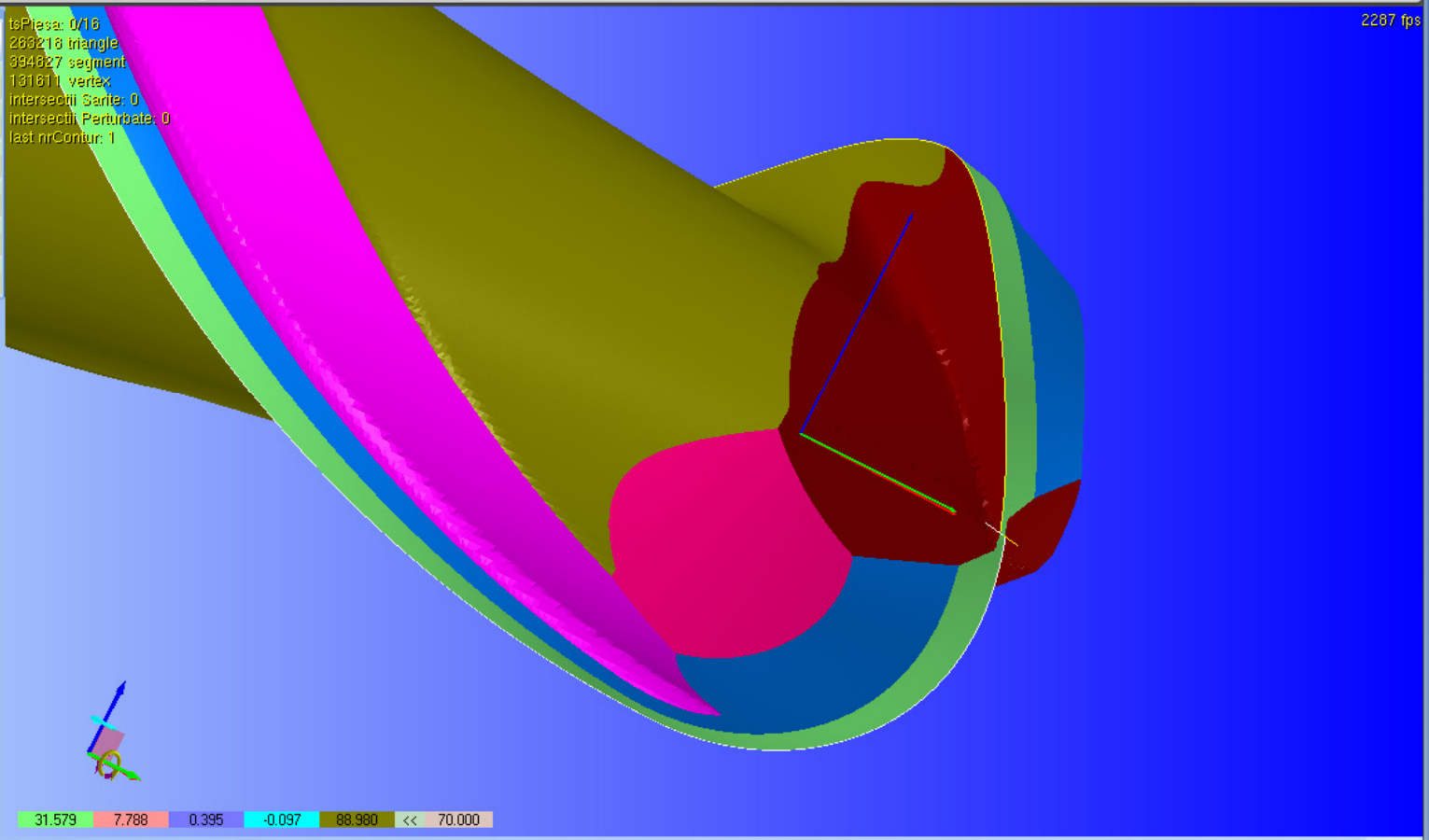
3D Simulation Collision 2D Simulation Section selection 2D View DRAWpad

Simulate View Measure

Simulation Setup Additional \*.TLS (TOOLdefine) Options View Tool testing Representation DXF Settings SolidPRO

- OUT 6/6
- (1) Main Flute  
Voxel 30% - 30% [00:17:954]
- 1.Relief (circumference)  
Voxel 30% - 30% [00:08:487]
- (2) Ball-Gashing(extra)  
Voxel 30% - 30% [00:05:318]
- (1) Ball-Gashing  
Voxel 30% - 30% [00:07:903]
- (1) Ball-2.Relief  
Voxel 30% - 30% [00:11:120]
- (1) Ball-1.Relief  
Voxel 30% - 30% [00:11:701]

toPiesa: 0/18  
288218 triangle  
394827 segment  
181811 vertex  
intersectii Sarte: 0  
intersectii Perturbate: 0  
last nrContur: 1



31.579 7.788 0.395 -0.097 88.980 << 70.000

Section selection

01:03:045

3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

Simulate View Section 3D Measure

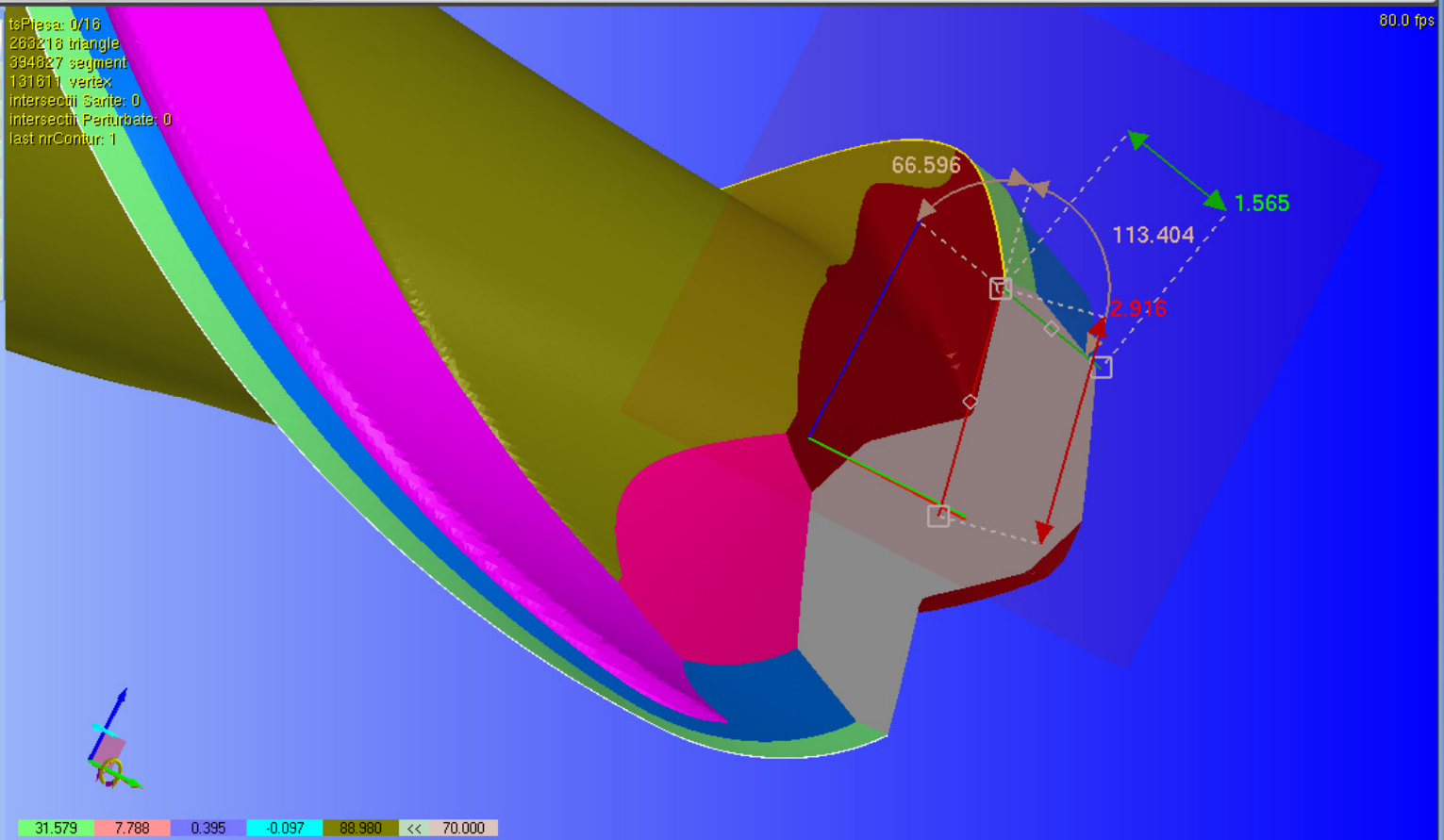
Open Save \*.MS3 Measure Selection information

✓	2.916
✓	1.565
✓	113.404

Options

- OUT 6/6
- (1) Main Flute  
Voxel 30% - 30% [00:17:954]
- 1.Relief (circumference)  
Voxel 30% - 30% [00:08:487]
- (2) Ball-Gashing(extra)  
Voxel 30% - 30% [00:05:318]
- (1) Ball-Gashing  
Voxel 30% - 30% [00:07:903]
- (1) Ball-2.Relief  
Voxel 30% - 30% [00:11:120]
- (1) Ball-1.Relief  
Voxel 30% - 30% [00:11:701]

toPiesa: 0/18  
288218 triangle  
394827 segment  
131611 vertex  
intersectii Sarte: 0  
intersectii Perturbate: 0  
last nrContur: 1



31.579 7.788 0.395 -0.097 88.980 << 70.000

Section selection

OUT 3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

Simulate View Measure

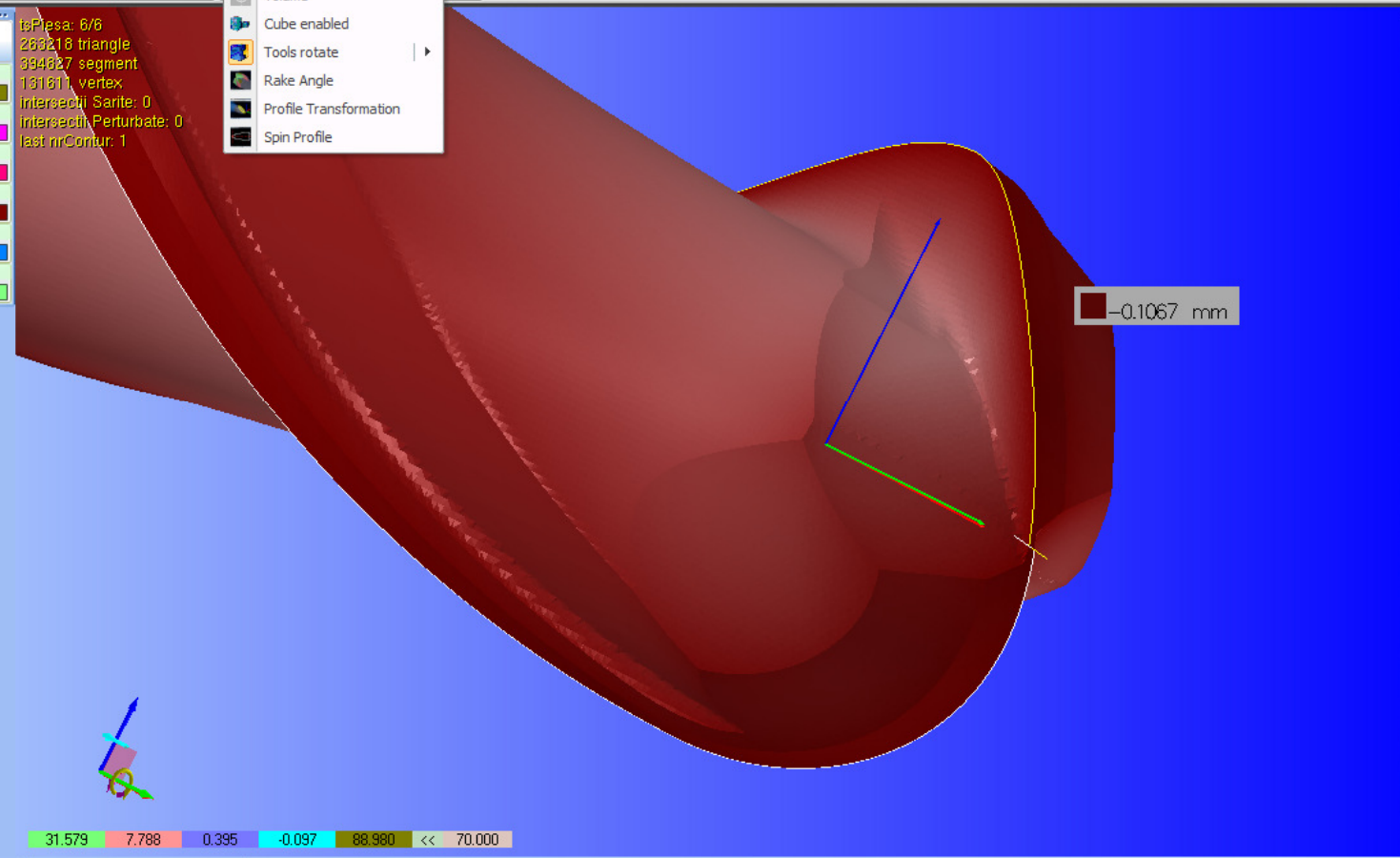
Simulation Setup Additional \*.TLS (TOOLdefine) Options View

Tool testing Representation DXF

- Volume
- Cube enabled
- Tools rotate
- Rake Angle
- Profile Transformation
- Spin Profile

- OUT 6/6
- (1) Main Flute  
Voxel 30% - 30% [00:17:954]
  - 1.Relief (circumference)  
Voxel 30% - 30% [00:08:487]
  - (2) Ball-Gashing(extra)  
Voxel 30% - 30% [00:05:318]
  - (1) Ball-Gashing  
Voxel 30% - 30% [00:07:903]
  - (1) Ball-2-Relief  
Voxel 30% - 30% [00:11:120]
  - (1) Ball-1-Relief  
Voxel 30% - 30% [00:11:701]

tsPlea: 6/6  
288216 triangle  
894827 segment  
131811 vertex  
intersecti Sarite: 0  
intersecti Perturbate: 0  
fast nrContur: 1



145 fps

Section selection

OUT 3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

01:03:045

Simulate View Measure

Simulation Setup Additional \*.TLS (TOOLdefine) Options View

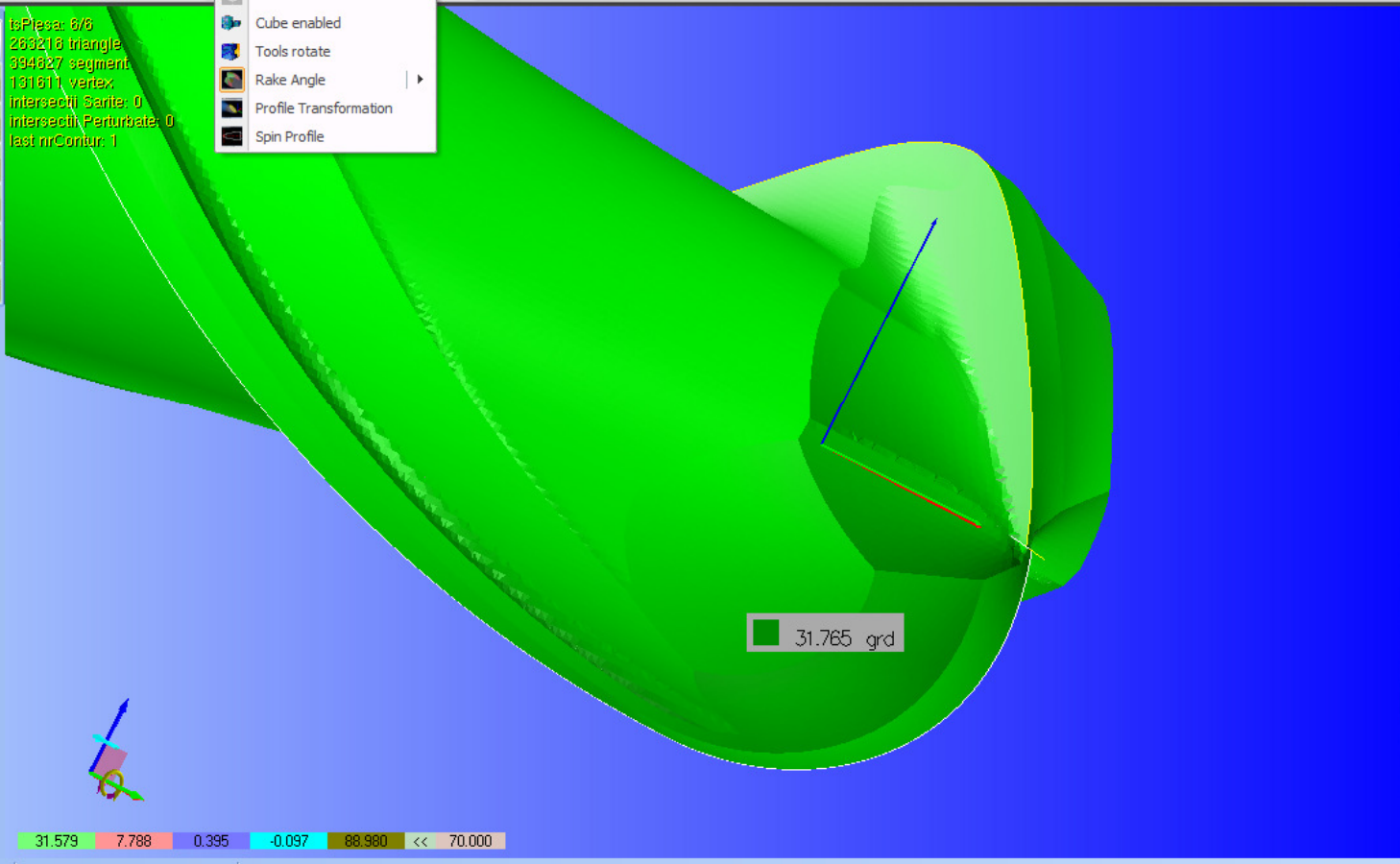
Tool testing Representation DXF

Volume

- Cube enabled
- Tools rotate
- Rake Angle
- Profile Transformation
- Spin Profile

- OUT 6/6
- (1) Main Flute  
Voxel 30% - 30% [00:17:954]
  - 1.Relief (circumference)  
Voxel 30% - 30% [00:08:487]
  - (2) Ball-Gashing(extra)  
Voxel 30% - 30% [00:05:318]
  - (1) Ball-Gashing  
Voxel 30% - 30% [00:07:903]
  - (1) Ball-2.Relief  
Voxel 30% - 30% [00:11:120]
  - (1) Ball-1.Relief  
Voxel 30% - 30% [00:11:701]

tsPiesa: 6/6  
289218 triangle  
394827 segment  
131611 vertex  
intersectii Sarite: 0  
intersectii Perturbate: 0  
last nrContur: 1



7.0 fps

31.579 7.788 0.395 -0.097 88.980 << 70.000

Section selection

3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

01:03:045

Simulate View Section 3D Measure

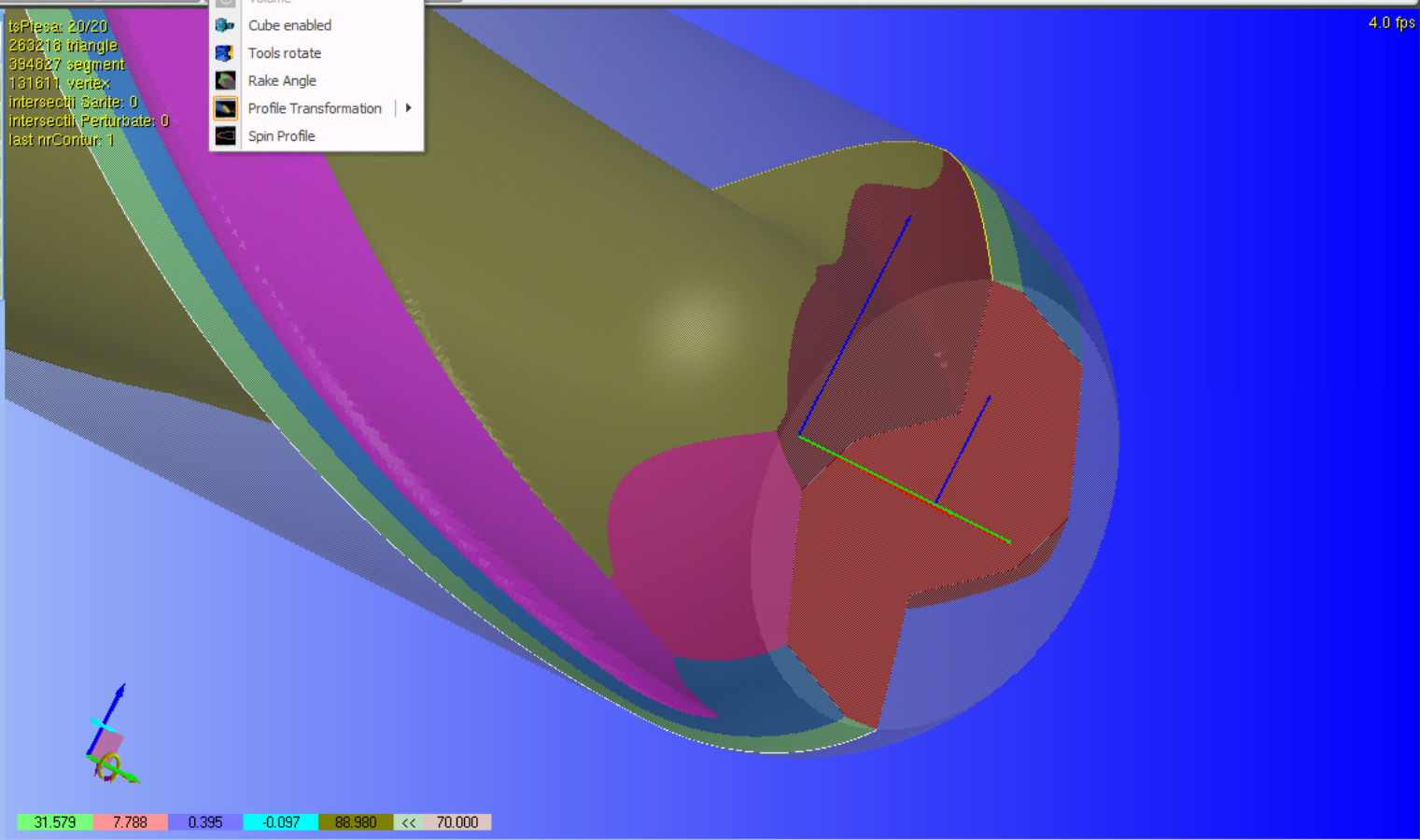
Simulation Setup Additional \*TLS (TOOLdefine) Options View Tool testing Representation DXF

tsPlea: 20/20  
 263218 triangle  
 394827 segment  
 131811 vertex  
 intersecti Sarite: 0  
 intersecti Perturbate: 0  
 last nrContur: 1

- OUT 6/6
- (1) Main Flute  
Voxel 30% - 30% [00:17:954]
- 1.Relief (circumference)  
Voxel 30% - 30% [00:08:487]
- (2) Ball-Gashing(extra)  
Voxel 30% - 30% [00:05:318]
- (1) Ball-Gashing  
Voxel 30% - 30% [00:07:903]
- (1) Ball-2.Relief  
Voxel 30% - 30% [00:11:120]
- (1) Ball-1.Relief  
Voxel 30% - 30% [00:11:701]

- Volume
- Cube enabled
- Tools rotate
- Rake Angle
- Profile Transformation
- Spin Profile

4.0 fps



31.579 7.788 0.395 -0.097 88.980 << 70.000

Section selection

01:03:045

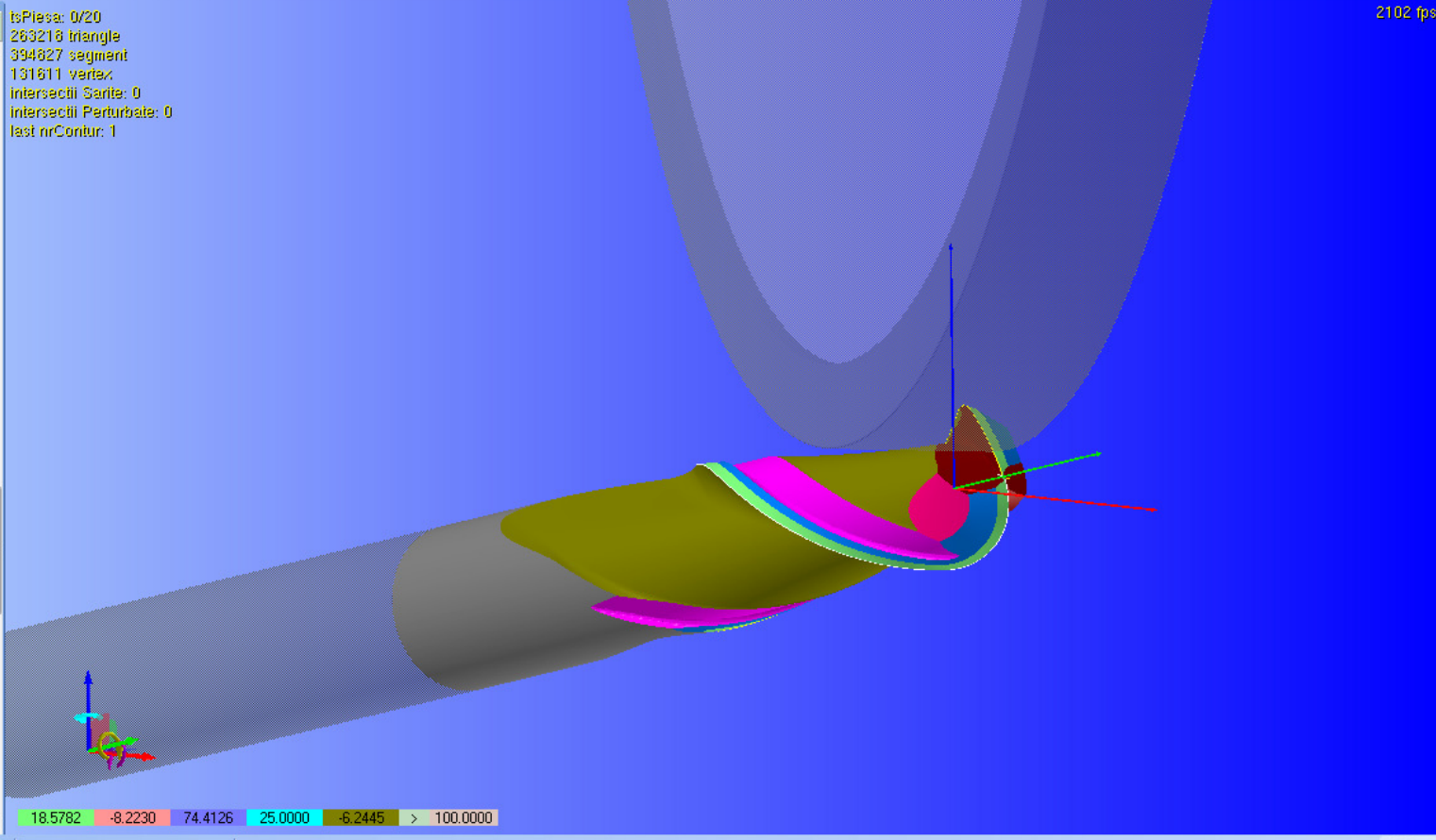
3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

Simulate View Measure

Simulation Setup Additional \*TLS (TOOLdefine) Options View Tool testing Representation DXF Settings SolidPRO

[1/2] nut_sfera0.out	X
143 >	100.0000 199 [199]
144 >	100.0000 199 [199]
145 >	100.0000 199 [199]
146 >	100.0000 199 [199]
147 >	100.0000 199 [199]
148 >	100.0000 199 [199]
149 >	100.0000 199 [199]
150 >	100.0000 199 [199]
151 >	100.0000 199 [199]
152 >	100.0000 199 [199]
153 >	100.0000 199 [199]
154 >	100.0000 199 [199]
155 >	100.0000 199 [199]
156 >	100.0000 199 [199]
157 >	100.0000 199 [199]
158 >	100.0000 199 [199]
159 >	100.0000 199 [199]
160 >	100.0000 199 [199]
161 >	102.3678 196 [196]
162 >	105.5226 192 [192]
163 >	107.8853 189 [189]
164 >	111.0284 185 [185]
165 >	114.1604 181 [181]
166 >	117.2784 177 [177]
167 >	119.6058 174 [174]
168 >	122.6916 170 [170]
169 >	125.7548 166 [166]
170 >	128.7923 162 [162]
171 >	131.8011 158 [158]
172 >	134.0371 155 [155]
173 >	136.9885 151 [151]
174 >	139.9030 147 [147]
175 >	142.7778 143 [143]
176 >	144.9060 140 [140]
177 >	147.7043 136 [136]
178 >	150.4550 132 [132]
179 >	153.1555 128 [128]
180 >	155.1461 125 [125]
181 >	157.7521 121 [121]
182 >	160.3005 117 [117]
183 >	162.7888 113 [113]
184 >	165.2145 109 [109]
185 >	166.9912 106 [106]
186 >	169.3016 102 [102]
187 >	171.5429 98 [98]



tsPiesa: 0/20  
263218 triangle  
394827 segment  
131611 vertex  
intersectii Sarite: 0  
intersectii Perturbate: 0  
last nrContur: 1

18.5782 -8.2230 74.4126 25.0000 -6.2445 > 100.0000

Section selection

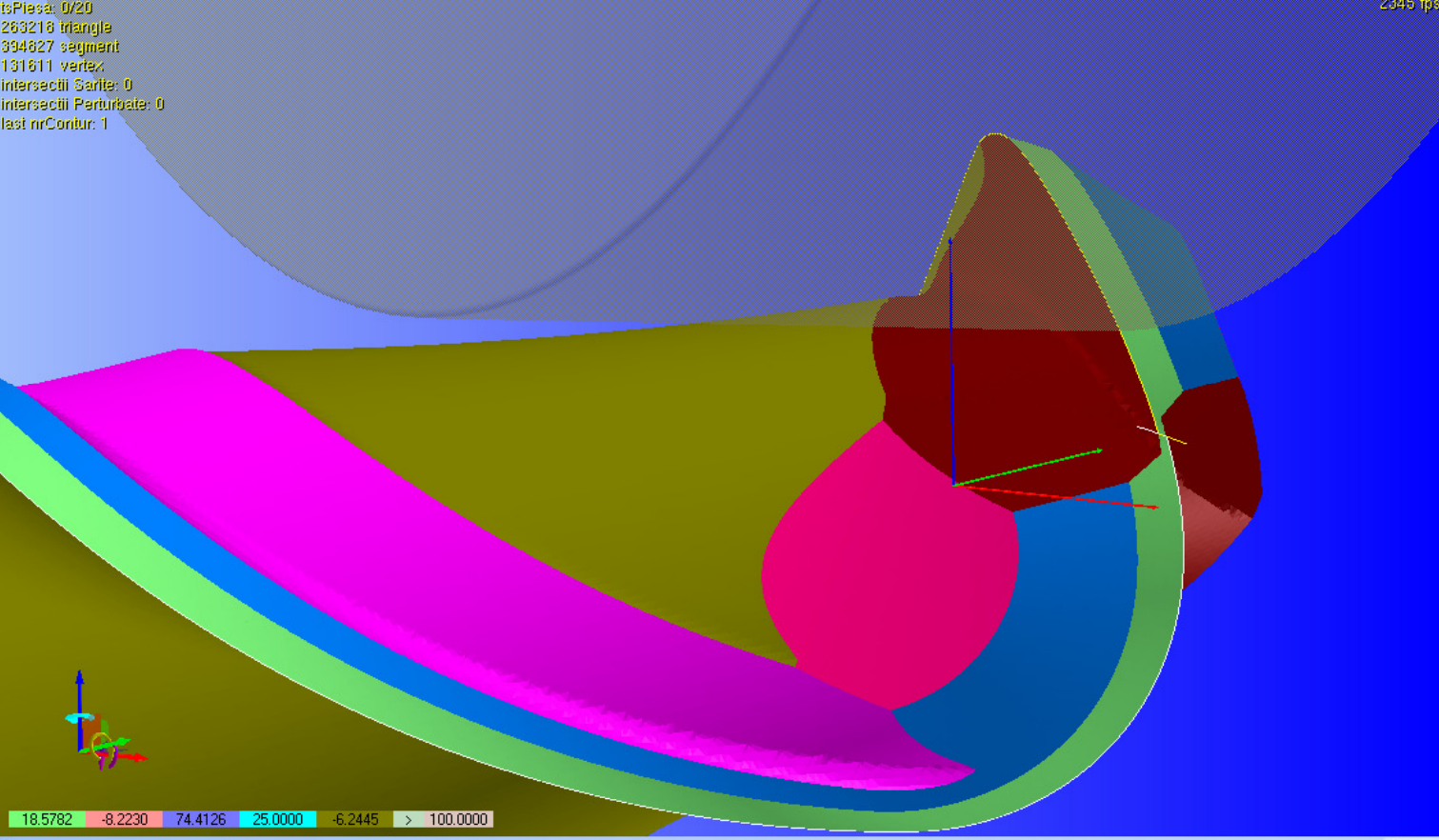
3D Simulation Collision 2D Simulation Section selection 2D View DRAWpad 01:03:045



Simulate View Measure

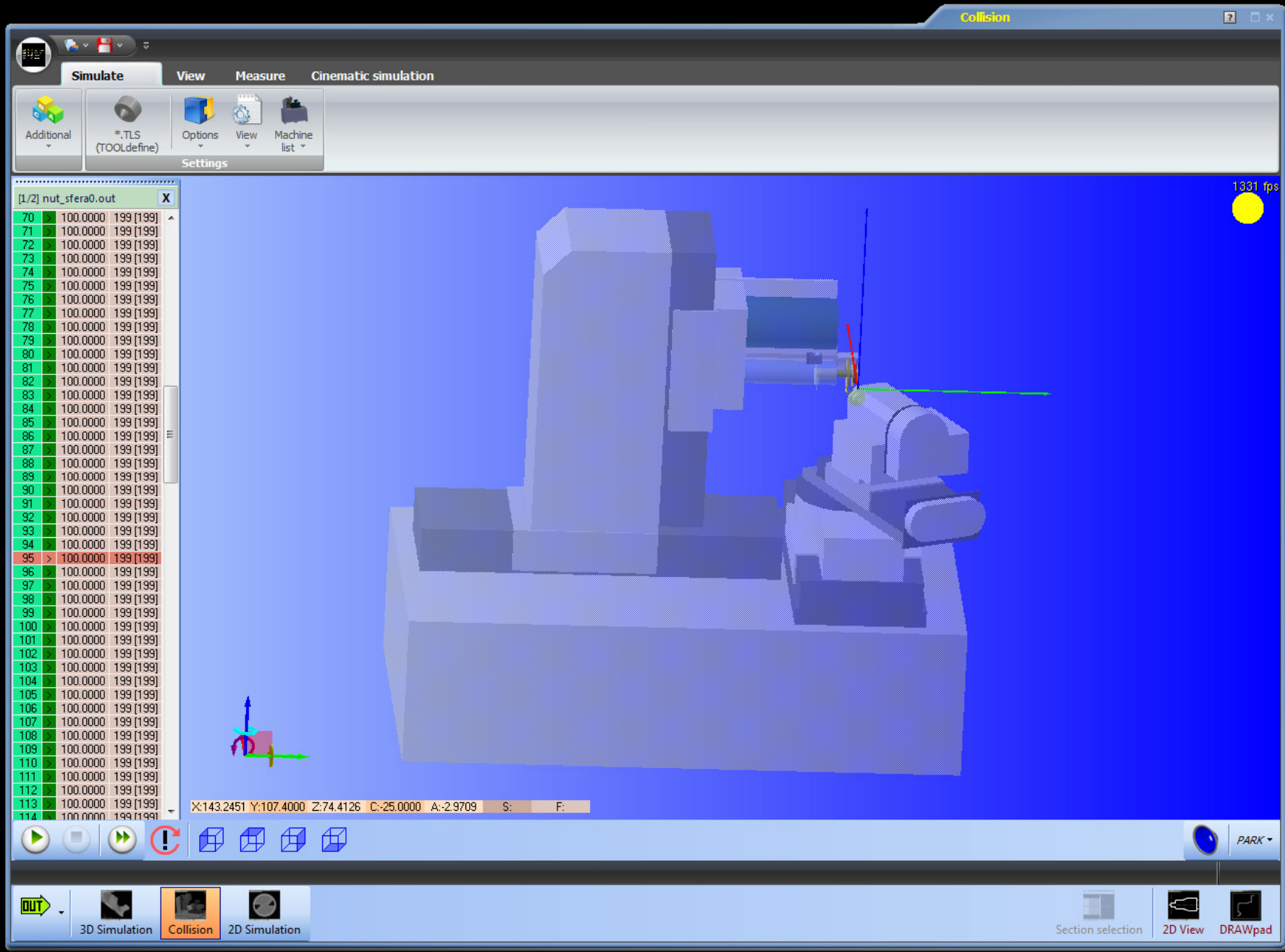
Simulation Setup Additional \*.TLS (TOOLdefine) Options View Tool testing Representation DXF Settings SolidPRO

[1/2]	nut_sfera0.out
143	> 100.0000 199 [199]
144	> 100.0000 199 [199]
145	> 100.0000 199 [199]
146	> 100.0000 199 [199]
147	> 100.0000 199 [199]
148	> 100.0000 199 [199]
149	> 100.0000 199 [199]
150	> 100.0000 199 [199]
151	> 100.0000 199 [199]
152	> 100.0000 199 [199]
153	> 100.0000 199 [199]
154	> 100.0000 199 [199]
155	> 100.0000 199 [199]
156	> 100.0000 199 [199]
157	> 100.0000 199 [199]
158	> 100.0000 199 [199]
159	> 100.0000 199 [199]
160	> 100.0000 199 [199]
161	> 102.3678 196 [196]
162	> 105.5226 192 [192]
163	> 107.8853 189 [189]
164	> 111.0284 185 [185]
165	> 114.1604 181 [181]
166	> 117.2784 177 [177]
167	> 119.6058 174 [174]
168	> 122.6916 170 [170]
169	> 125.7548 166 [166]
170	> 128.7923 162 [162]
171	> 131.8011 158 [158]
172	> 134.0371 155 [155]
173	> 136.9885 151 [151]
174	> 139.9030 147 [147]
175	> 142.7778 143 [143]
176	> 144.9060 140 [140]
177	> 147.7043 136 [136]
178	> 150.4550 132 [132]
179	> 153.1555 128 [128]
180	> 155.1461 125 [125]
181	> 157.7521 121 [121]
182	> 160.3005 117 [117]
183	> 162.7888 113 [113]
184	> 165.2145 109 [109]
185	> 166.9912 106 [106]
186	> 169.3016 102 [102]
187	> 171.5429 98 [98]



Section selection

3D Simulation Collision 2D Simulation Section selection 2D View DRAWpad 01:03:045



Simulate View Measure Cinematic simulation

Additional  
\*.TLS (TOOLdefine)  
Options View Machine list  
Settings

[1/2] nut_sfera0.out		
70	100.0000	199 [199]
71	100.0000	199 [199]
72	100.0000	199 [199]
73	100.0000	199 [199]
74	100.0000	199 [199]
75	100.0000	199 [199]
76	100.0000	199 [199]
77	100.0000	199 [199]
78	100.0000	199 [199]
79	100.0000	199 [199]
80	100.0000	199 [199]
81	100.0000	199 [199]
82	100.0000	199 [199]
83	100.0000	199 [199]
84	100.0000	199 [199]
85	100.0000	199 [199]
86	100.0000	199 [199]
87	100.0000	199 [199]
88	100.0000	199 [199]
89	100.0000	199 [199]
90	100.0000	199 [199]
91	100.0000	199 [199]
92	100.0000	199 [199]
93	100.0000	199 [199]
94	100.0000	199 [199]
95	100.0000	199 [199]
96	100.0000	199 [199]
97	100.0000	199 [199]
98	100.0000	199 [199]
99	100.0000	199 [199]
100	100.0000	199 [199]
101	100.0000	199 [199]
102	100.0000	199 [199]
103	100.0000	199 [199]
104	100.0000	199 [199]
105	100.0000	199 [199]
106	100.0000	199 [199]
107	100.0000	199 [199]
108	100.0000	199 [199]
109	100.0000	199 [199]
110	100.0000	199 [199]
111	100.0000	199 [199]
112	100.0000	199 [199]
113	100.0000	199 [199]
114	100.0000	199 [199]

1339 fps

X:143.2451 Y:107.4000 Z:74.4126 C:-25.0000 A:-2.9709 S: F:

Play Stop Next Previous View Orientation icons

PARK

3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

Simulate View Measure Cinematic simulation

Additional  
\*.TSL (TOOLdefine)  
Options View Machine list  
Settings

[1/2] nut_sfera0.out	X
70	100.0000 199 [199]
71	100.0000 199 [199]
72	100.0000 199 [199]
73	100.0000 199 [199]
74	100.0000 199 [199]
75	100.0000 199 [199]
76	100.0000 199 [199]
77	100.0000 199 [199]
78	100.0000 199 [199]
79	100.0000 199 [199]
80	100.0000 199 [199]
81	100.0000 199 [199]
82	100.0000 199 [199]
83	100.0000 199 [199]
84	100.0000 199 [199]
85	100.0000 199 [199]
86	100.0000 199 [199]
87	100.0000 199 [199]
88	100.0000 199 [199]
89	100.0000 199 [199]
90	100.0000 199 [199]
91	100.0000 199 [199]
92	100.0000 199 [199]
93	100.0000 199 [199]
94	100.0000 199 [199]
95	100.0000 199 [199]
96	100.0000 199 [199]
97	100.0000 199 [199]
98	100.0000 199 [199]
99	100.0000 199 [199]
100	100.0000 199 [199]
101	100.0000 199 [199]
102	100.0000 199 [199]
103	100.0000 199 [199]
104	100.0000 199 [199]
105	100.0000 199 [199]
106	100.0000 199 [199]
107	100.0000 199 [199]
108	100.0000 199 [199]
109	100.0000 199 [199]
110	100.0000 199 [199]
111	100.0000 199 [199]
112	100.0000 199 [199]
113	100.0000 199 [199]
114	100.0000 199 [199]

2266 fps



X:143.2451 Y:107.4000 Z:74.4126 C:-25.0000 A:-2.9709 S: F:

Play, Stop, Step, Refresh, View icons

Blue sphere icon, PARK dropdown

3D Simulation Collision 2D Simulation

Section selection 2D View DRAWpad

# sv& TOOLBOX (v.4f0) & sv& SolidPRO LECA

System required :

- Windows **Xp, Vista, 7** (32 or 64 bit) compatible
- min **256 Mb** dedicate 3D graphical adapter
- min **8 Gb RAM** internal
- **2 GHz** or faster multi-core processor (Intel or AMD)
- min **2GB** free disk space