Perpendicularity to common axis A-B

Dimensioning

⊥ | 35 | AⓂ-BⓂ

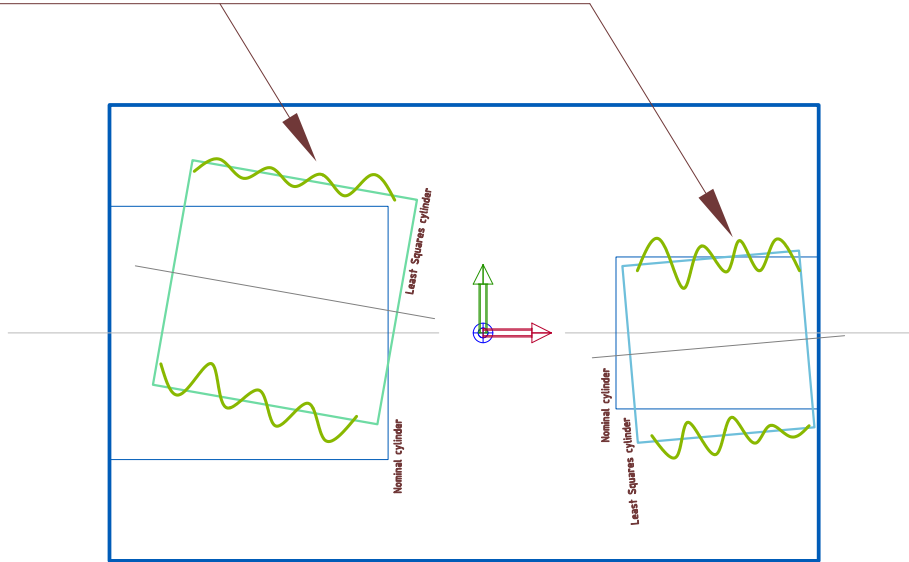$\varnothing 50^{+0}_{-30}$

A

$\varnothing 30^{+0}_{-18}$

B

46.2500

46.2500

18.7500

73.7500

26.2500

66.2500

Actual surfaces and derived element

Actual surfaces

Least Squares cylinder

Nominal cylinder

Nominal cylinder

Least Squares cylinder

Intersection point #1

Intersection point #2

Dimension according plott

Dimension according plott

46.2500

46.2500

LSQ cylinder

LSQ cylinder

Theoretical plane

Theoretical plane
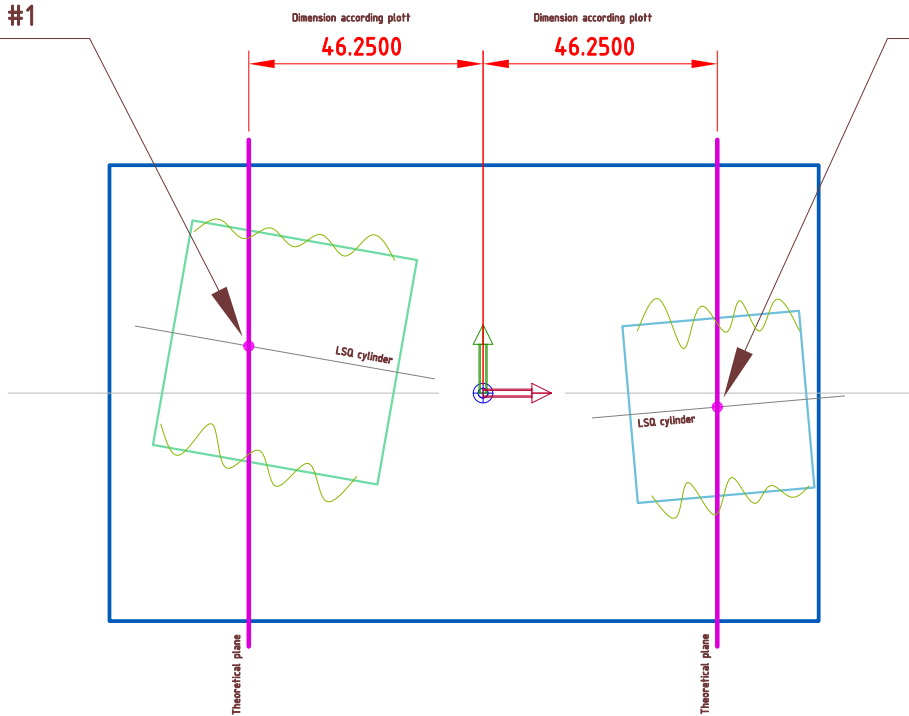
Intersection point and 3D Line

Intersection point #1

Intersection point #2

3D Line made of
two intersection points
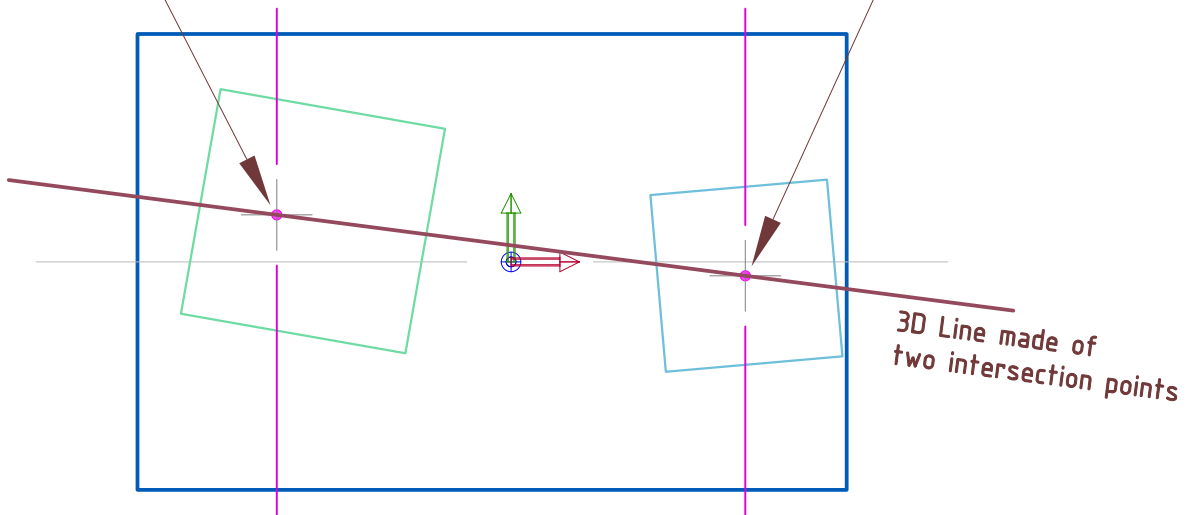
Symmetry point of two
intersection points IP

IP

IP
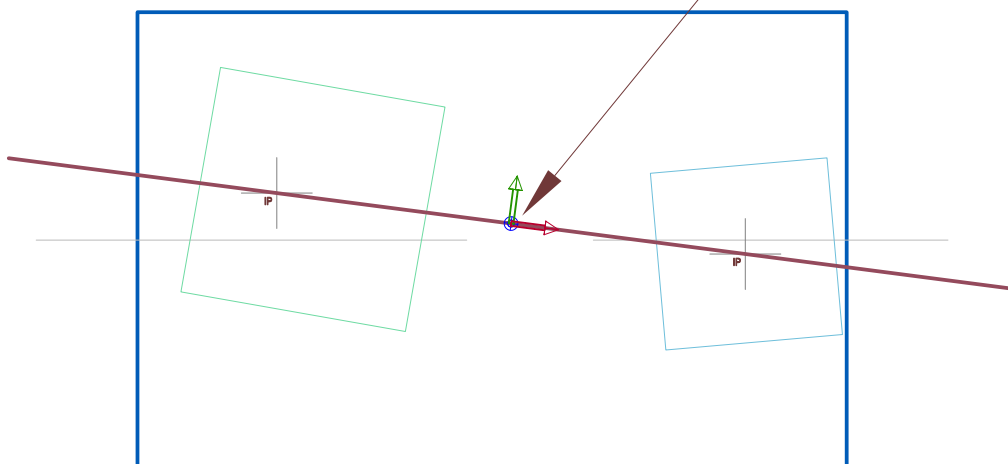
Tangential cylinder constrained in location and direction

Actual surfaces of two cylinders

clearance

Touching point

Touching point

clearance

3D Line

D1

D2
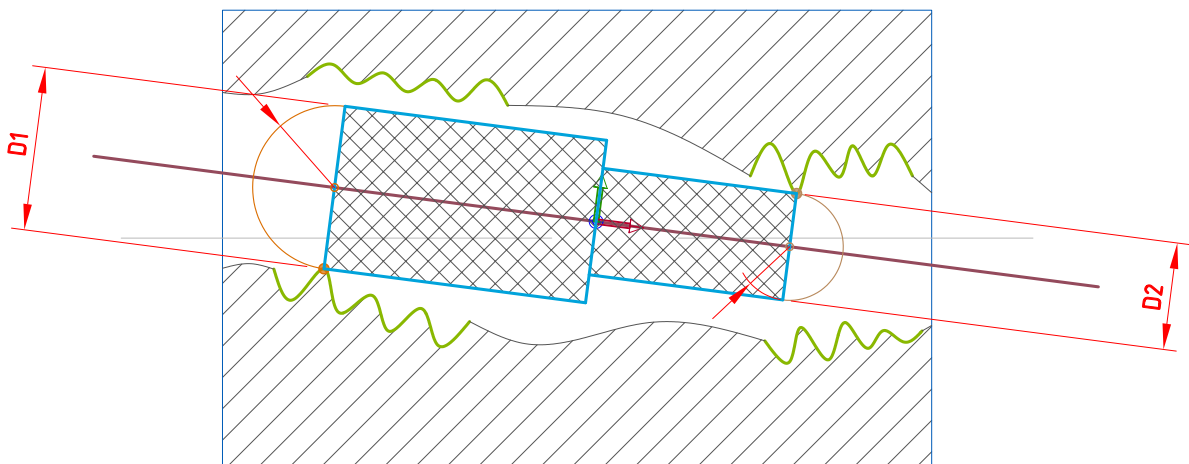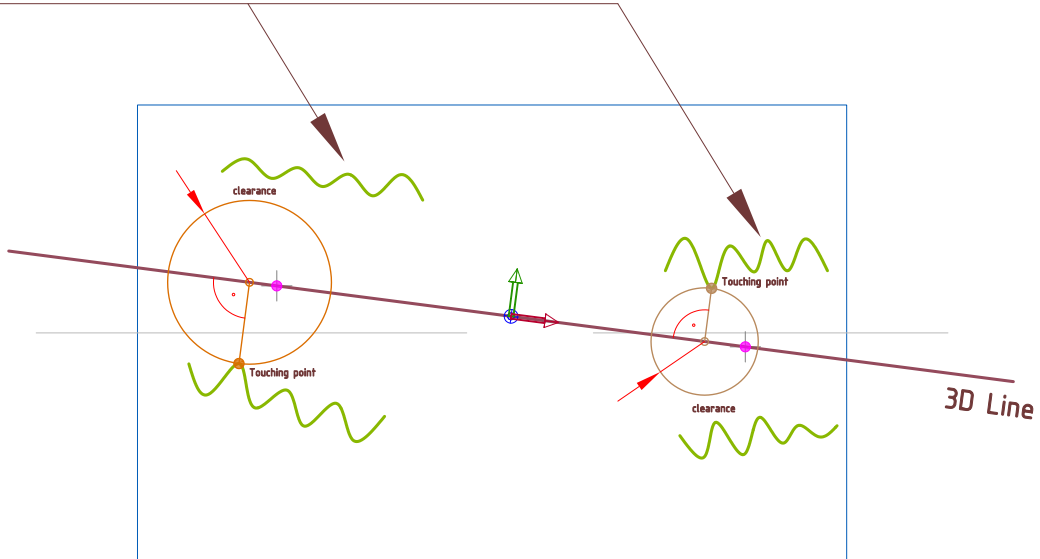
Clearance of actual diameter and boundary

actual diameter

Boundary

32.3288

20.0000

Boundary

actual diameter

21.1744

12.0000

Boundary

Boundary

maximum angle left

Minimum of both: 3.9045°

maximum angle right

4.6407°

Meaning:
max. datum rotation 3.9045°

3.9045°

stepped cylinder
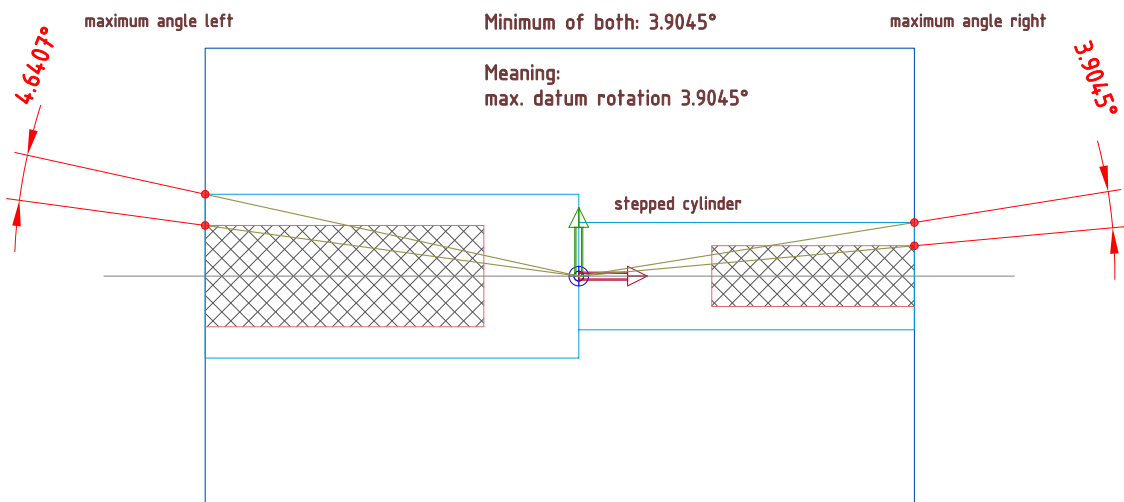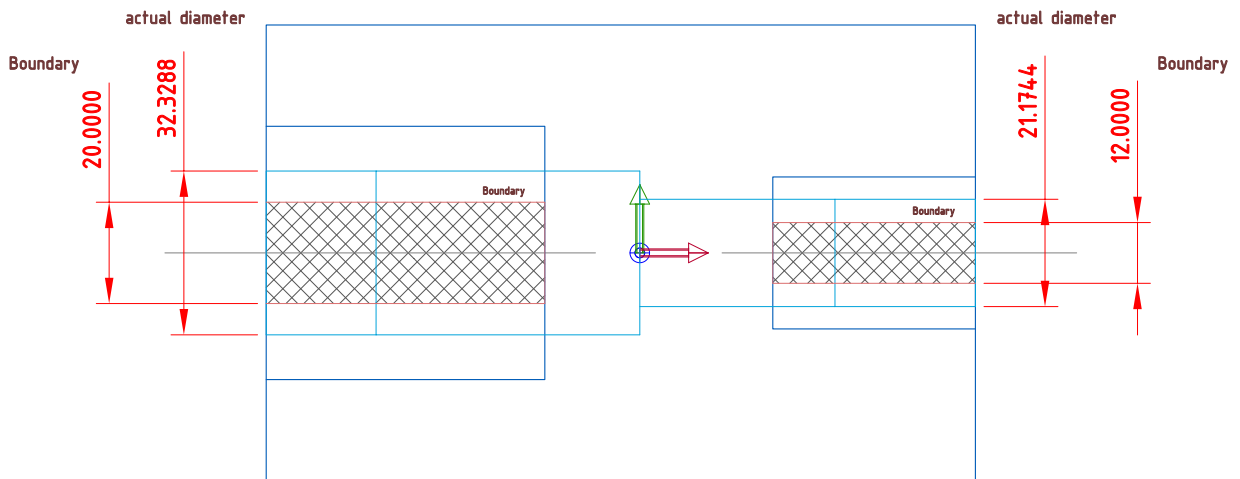
Perpendicularity to common axis A–B

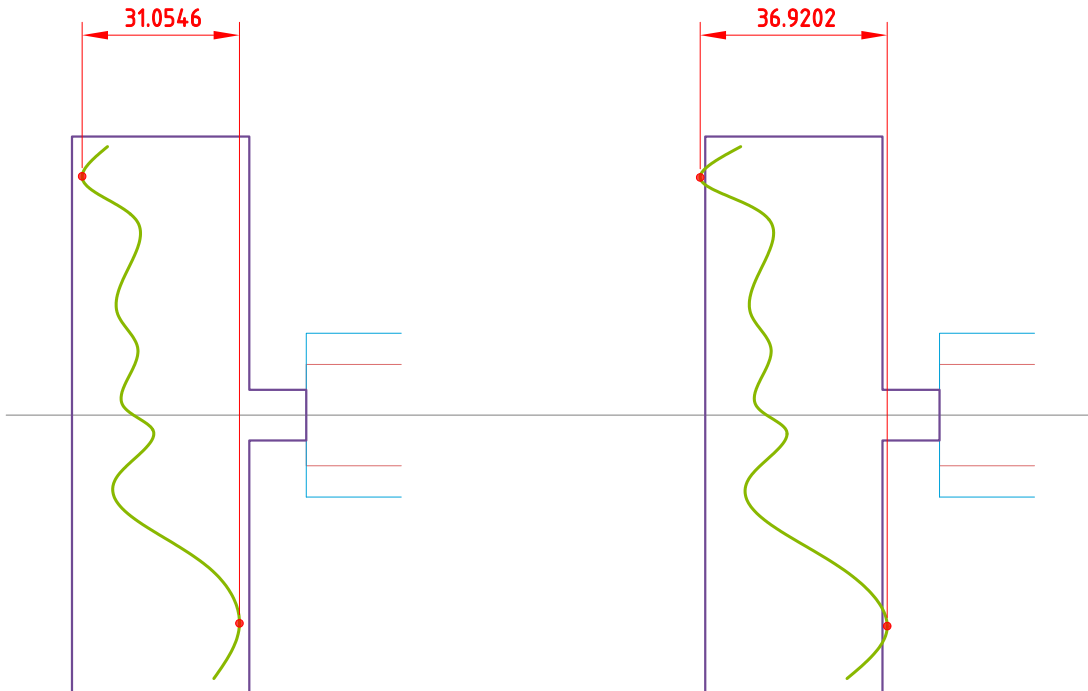Tolerance zone of perpendicularity and toleranced feature

35.0000
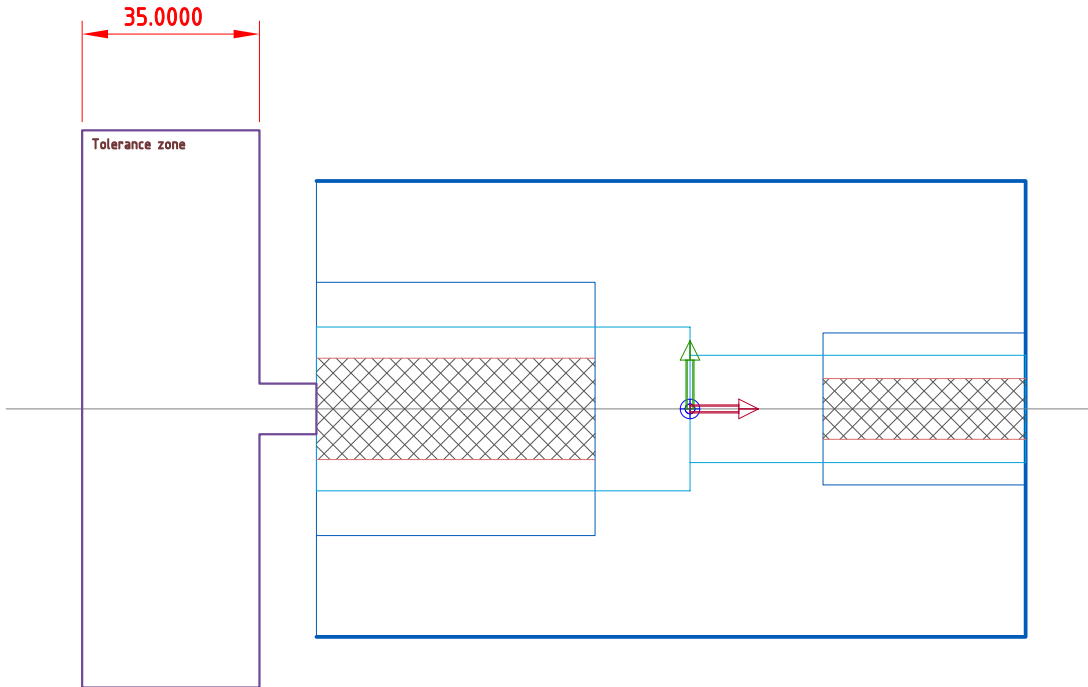
Tolerance zone

within tolerance

31.0546
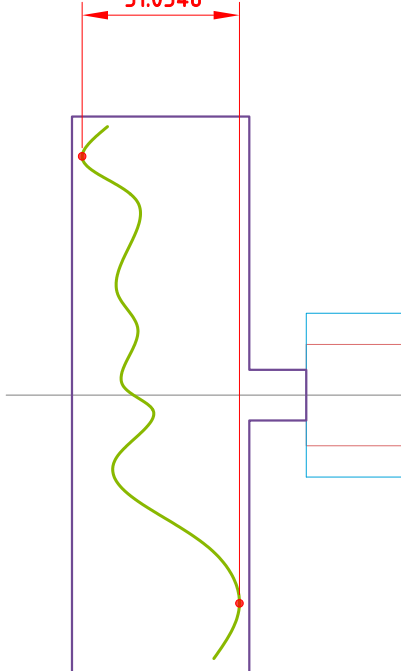
out of tolerance

36.9202

Perpendicularity to common axis A-B

All points within tolerance

Within tolerance

31.0546

25.4532

"optimized result"

"Optimazing" the result
by datum-rotation
is not allowed

datum rotation

Perpendicularity to common axis A–B
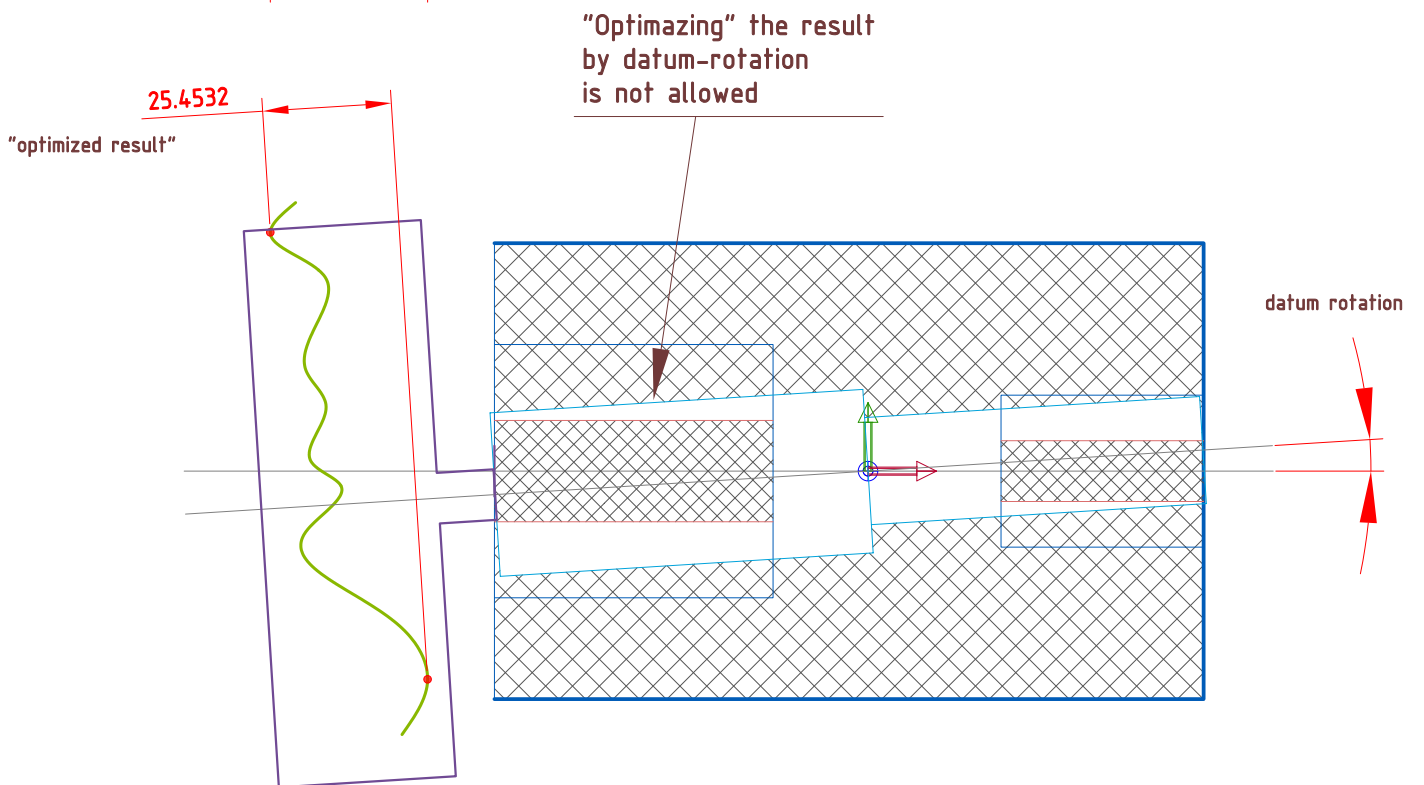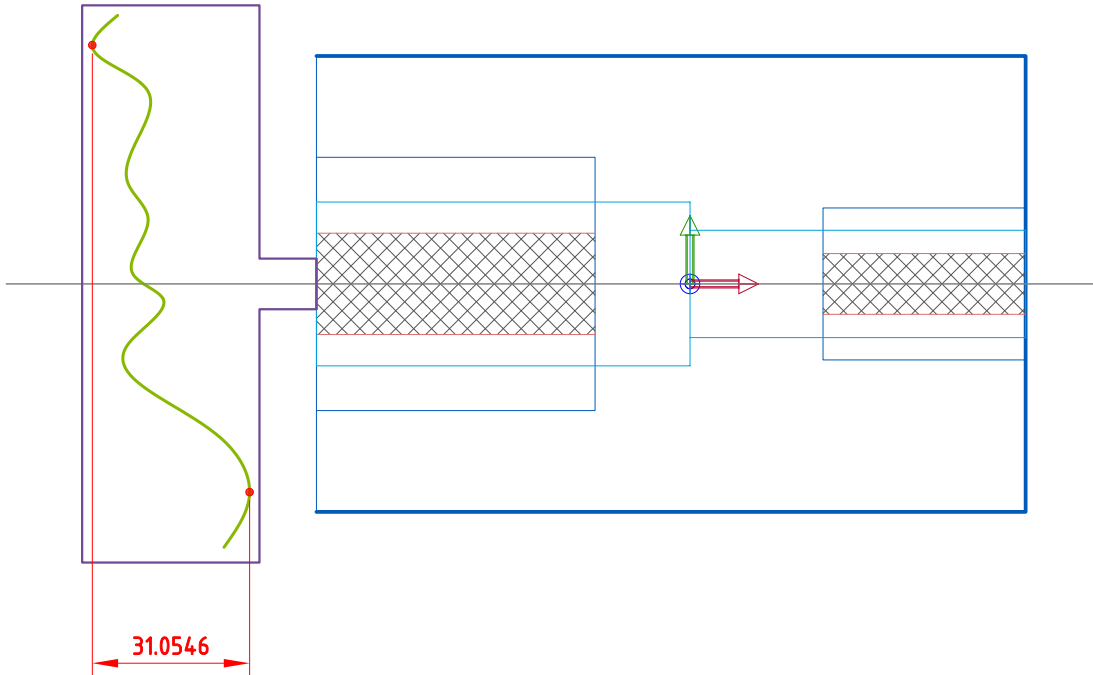
Some points out of tolerance

Out of tolerance

36.9202

35.0000
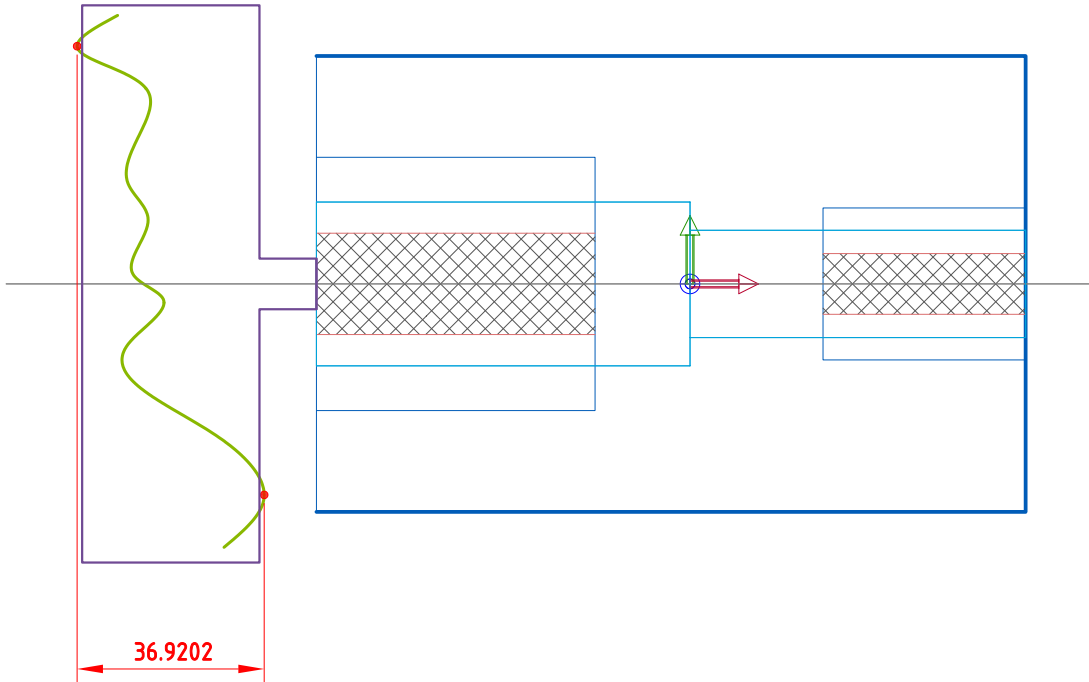
"Optimazing" the result
by datum-rotation
as much as necessary

datum rotation

clearance

clearance