G E O 4

Software for calculation of cam and cam shaft drives

for Windows
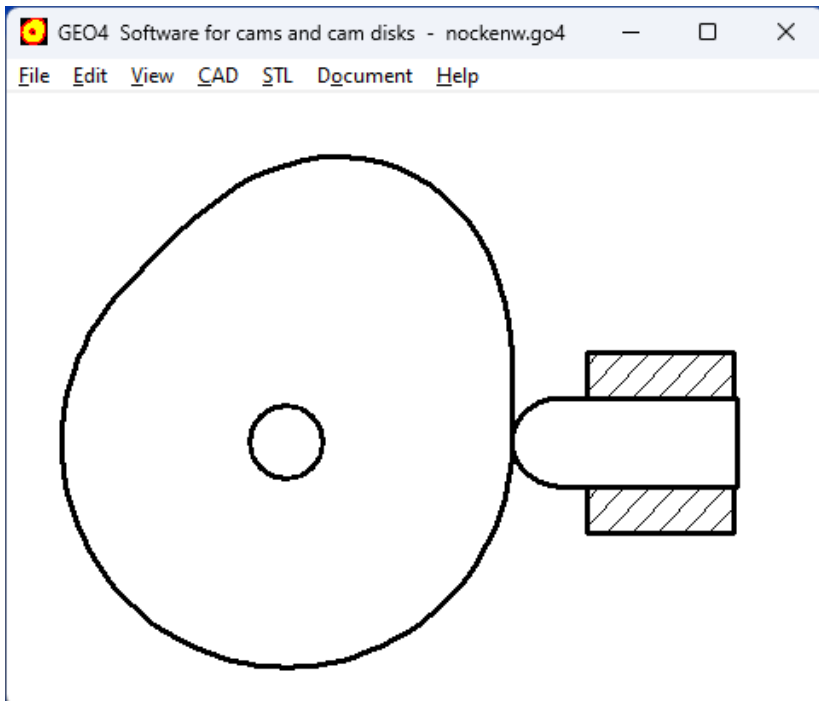
Calculation of Cams and Cam Shafts

GEO4 calculates diagrams of stroke, speed and acceleration of cams and cam shafts. The cam geometry can be loaded from DXF file or defined by mathematical functions or entered as x/y coordinates or as polynominal function. Standard cam profiles like ellipse, sine, polygon, sine-linear may be generated by GEO4.

Formula parser

Instead of entering or importing the coordinate points, you can define the cam curve by up to 10 mathematical functions of cam angle phi for the variable cam radius. The geometrical functions + - */ SIN COS ARCTAN LN LOG EXP FAK SQR SQRT PI E X can be used therefore.Any formula defines a specified validity interval, i.e. f(x)=100 for phi=0° to phi=60°, f(x)=100+X for phi=60° until phi=180°, and so on.

Polynominal function

As other alternative, you can define cam geometry as polynominal function r = f (phi, phi²,phi³, ..). Or input up to 50 points r (phi) of the cam profile, and GEO4 calculates the polynominal function.

Standard Cams Curves

The standard shapes ellipse, polygon, sine and sinelinear are pre-defined. GEO4 generates the cam geometry, you only have to enter few parameters.
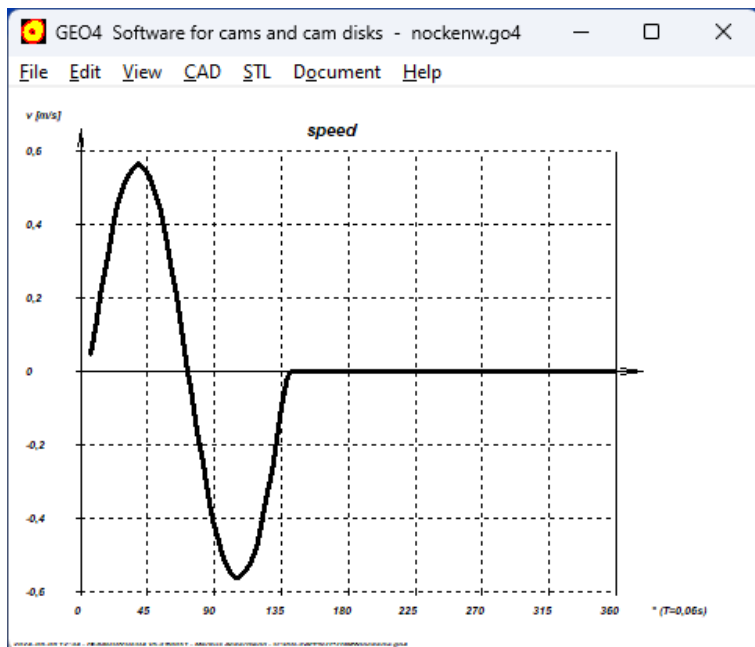
Coordinate transformation

The cam coordinates can be scaled, rotated, shifted and mirrored.

Ram

Ram (or roll) can be defined by contact shape (flat or circular) and ram diameter. Ram geometry is considered in the calculation, and discontinuities because of the ram geometry can be observed as peaks in the acceleration curve.
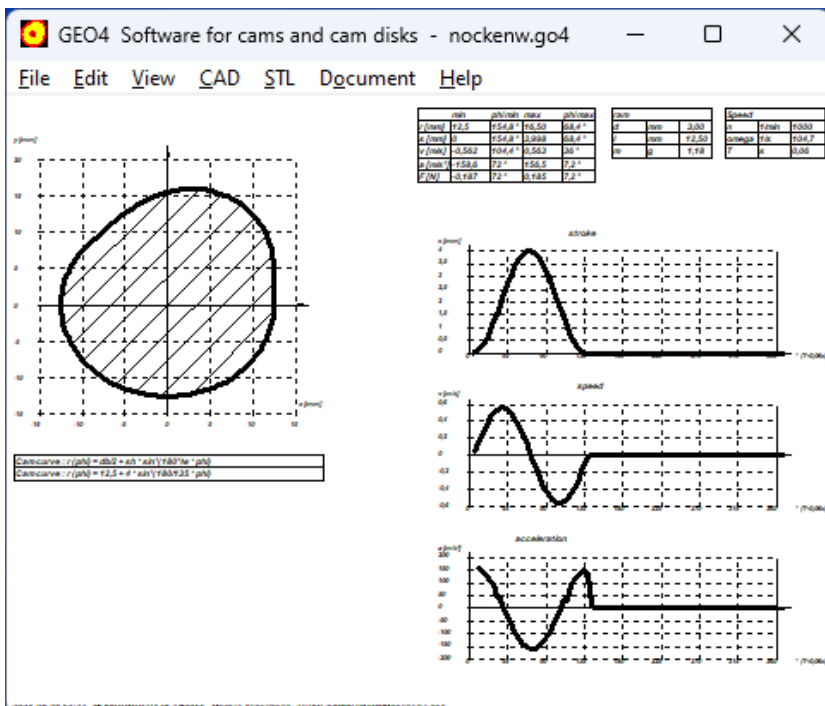
Diagrams
Travel (stroke) as function of the cam angle, speed and acceleration of the ram along one revolution are displayed as diagram.

Animation
By animation, rotation of cam and linear movement of ram is simulated on screen.

Table Drawing
Drawing of the cam geometry and table with calculation results are provided as table drawing with ISO 7200 data field. Drawing data can be entered in GEO4. Table drawing can be printed on any Windows printer, or exported to CAD.

Text Output
Input data and calculation results may be printed, saved as text or HTML file, or exported to MS Excel via OLE interface.
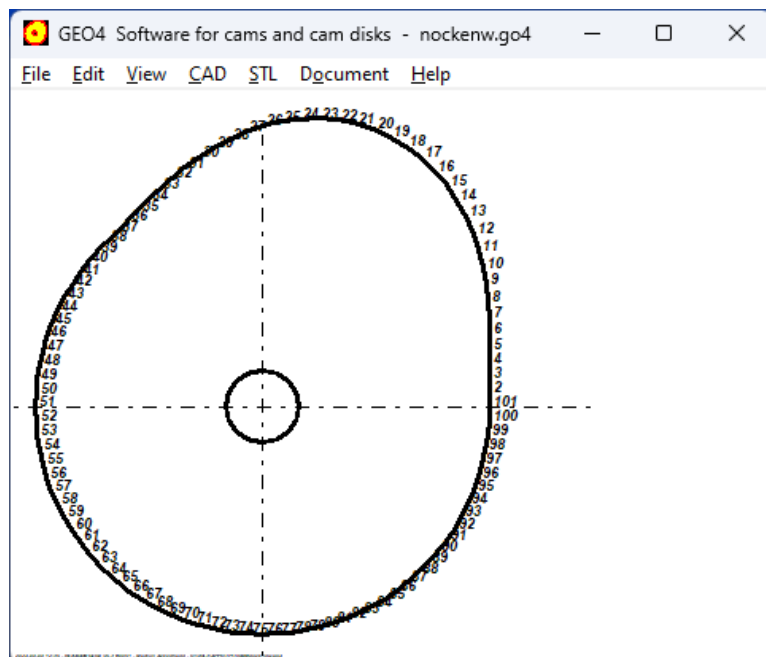
Graphics Output
Drawings and diagrams can be printed on any Windows printer, or exported to CAD.

CAD Interface
Cam curve, drawings, diagrams and tables can be exported as DXF- or IGES files, and loaded with CAD. Layers, colours and text font can be configured.
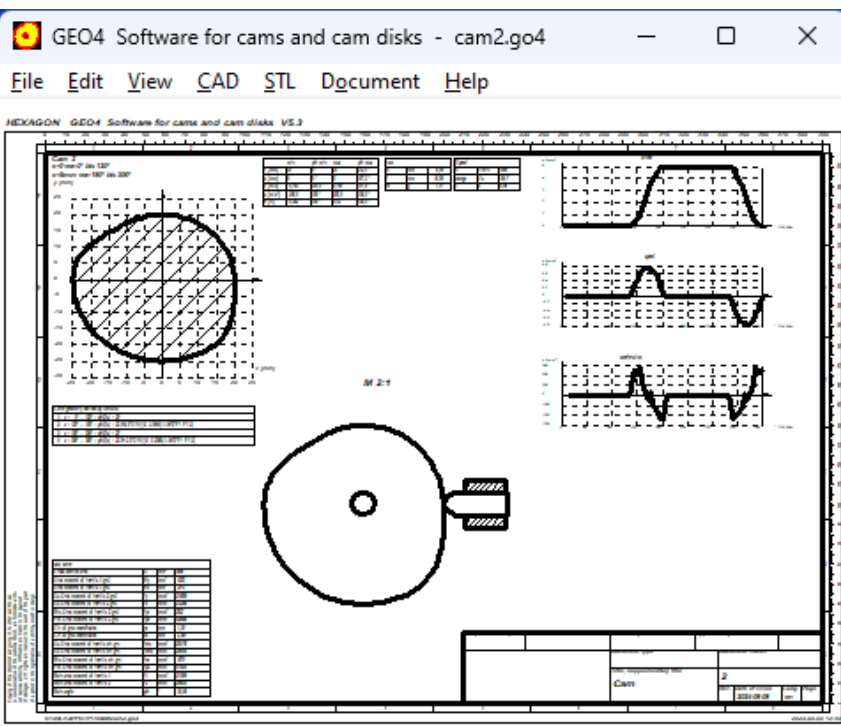
DXF Import
You can import the cam geometry as polyline from dxf file, instead of entering the coordinates.

HEXAGON Help System
GEO4 provides help text and auxiliary images. Warnings and error messages occur if exceeding a limit. For every error message you can have a description and remedy suggestion.

Units
Units can be switched between metric (mm) and imperial (inches).

Export Formats
DXF, IGES, STL, HTML, TXT, Excel, GO4.

Import Formats
DXF, TXT, Excel, GO4.

System Requirements
GEO4 is available as 32-bit app or as 64-bit app for Windows 11, Windows 10, Windows 7.

Scope of Delivery
Program with user manual (pdf), example applications and help images, non-expiring perpetual license.

Guarantee
HEXAGON gives a 24 month guarantee on full functionality of the software. We provide help and support by email without extra charge.