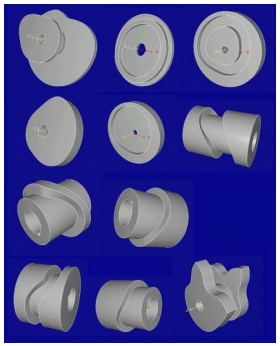
NOLTE NC-Kurventechnik

Cam and Indexing Cam Calculation

Engineering service at a fixed price

We calculate all types of cams:



- Planar (disk) cams
- Cylindrical cams
- Globoidal cams
- Cycloidal cams
- General 3D cams
- Track cams
- Ridge cams
- Double cams
- Cams of constant diameter
- Linear cams

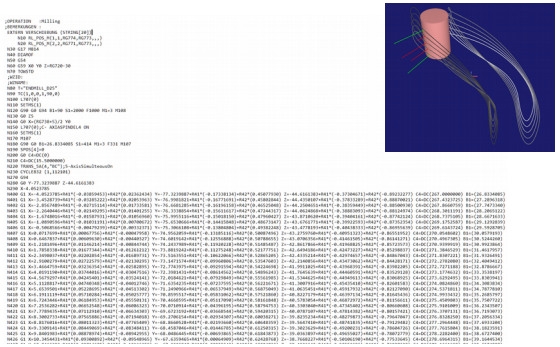
… with all types of motions

For indexing cams we consider:

- Freecuttings to let the rollers slide into the cam smoothly
- Spreading to avoid slack

In cam calculations we deliver:

- DXF files for cam profiles
- Exact 3D curves to extrude cam track solids for milling
- Numerically optimized NC data with integrated tool radius correction for very precise manufacturing using standard tool diameters



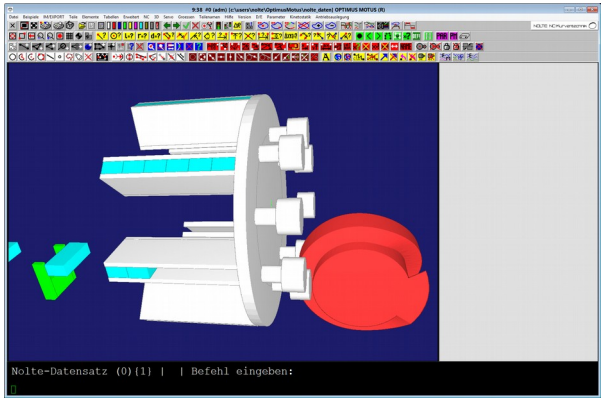
Send us you inquiry!

NOLTE NC-Kurventechnik

Mechanism Software OPTIMUS MOTUS ®

The complete software for the whole life cycle of your mechanisms and for all departments, made in Germany:

- for development and optimization
- for simulation during construction
- for generating cam manufacturing and servo data
- for supporting servo drive setup and programming
- for analyzing and dealing with dynamical problems in machines
- for documenting motion solutions



Features:

- Complex planar and 3D mechanisms
- Kinematics, kinetostatics (forces/torques), dynamics
- Grafical motion editor for optimizing all motions in one view
- Planar cams, cylindrical cams, globoidal cams, indexing cams, general 3D cams
- Servo drive evaluation with motor and gear catalog
- Roller and cam surface durability estimation
- 2D and 3D animation for collision control
- Import and export of 2D and 3D CAD data
- Numerically optimized NC files for cutting cams very precisely
- Parametric mechanism and motion design to represent product format dependencies
- SPS function block export for optimized motions
- Mechanism synthesis
- Numerical optimization of all parameters with freely definable target functions
- German and English language user interface
- Compatible with Windows XP, 7, 8, 10 (32 / 64 Bit)
- Available as Floating License or with Dongle

NOLTE NC-Kurventechnik

Nolte NC-Kurventechnik GmbH

Experts in Mechanisms and Motions

- Development and distribution of the software OPTIMUS MOTUS ® for dynamic optimization of complex mechanisms with cams, servo drives and linkages
- Development of SPS function blocks for motion control
- Calculation of planar cams, cylindrical cams, globoidal cams, linear cams, indexing cams, and general 3D cams with NC and CAD data generation
- Motion design to improve machine speed and smoothness and to save energy
- Trainings in cam, mechanism and motion design
- Development and evaluation of special mechanisms
- Consulting in all cam and mechanism topics
- Balancing dynamic forces from masses (minimizing forces on the frame)
- Power balancing (resulting in minimal, constant driving torques)

With motion and mechanim design, we improve the speed in your machines, reduce noise and vibration, improve processing reliability and save energy.

Take advantage of our experience from more than 40 years practise in cam, motion and mechanism design!

Our company was founded in 1965 and is now led in second generation by Rainer Nolte.

NOLTE NC-Kurventechnik

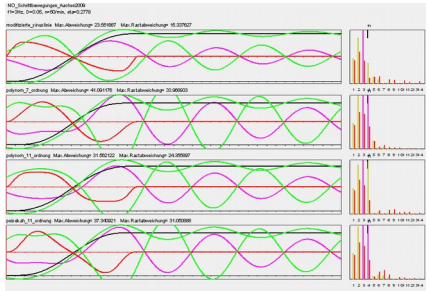
Motion Design

With dynamic motion design, we release the full potential of your machines.

- The better motions are designed, the faster and smoother machines will work.
- Motion design improves machines at no extra cost!
- Intelligent motion and mechanism design saves energy.

Usually we define motions with smooth, more than jerk-free motion laws on the TCP, the working point in the mechanism.

We optimize motions with grafical simulations and dynamical calculations (force, torque, acceleration, pressure, durability), so that all loads distribute comparably over time and over all mechanim strains, while collisions are just avoided.
This maximizes machine performance effectively.



We use

- Jerk-free motion laws (see VDI guideline 2143)
- More versatile and smoother motion laws
- Inflection points and shares of straight lines
- Motion time extension
- General sine combinations
- Steady third and fourth derivative
- Freely defined polynomials
- Polynomial splines
- HS profiles, mHSL technology
- Polydyne functions and inverse HS reactions
- Numerically optimized motions

The quality of motion design is a critical factor for machine performance!

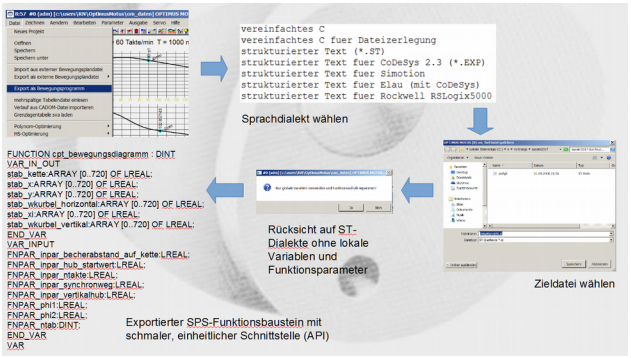
NOLTE NC-Kurventechnik

Development of SPS function blocks for motion calculation

For machines with multiple servo drives working together we develop parametric displacement plans that are valid for the complete range of product formats and that maximize machine performance at the same time. We use grafical editors in our software OPTIMUS MOTUS ®, so that we see the consequences of our design decisions immediately.

With simulations we verify that motions are free from collisions and that the dynamic limits of the drives are met.

Finally we export the motion design with an automatic „Save as“ function in various dialects of structured text (ST), such as CoDeSys, Elau/Schneider, Siemens, SEW, AllenBradley/Rockwell.



This way, high performance servo motions can be realized much faster and much better than with manual programming.

The exported ST source code calculates motions for all product formats. The motion export from OPTIMUS MOTUS is independent from the product format.

This way, the high motion quality designed grafically is effectively applied in the machine.

Moreover, you save debugging time because the motion source code is generated automatically.

NOLTE NC-Kurventechnik

Trainings in Cam, Mechanism, Servo and Motion Design

Motion design, servo programming and cam design are very important topics in machine design.

Motions and cams are „the core“ of many machines.

Take advantage of our experience!

Visit us for an individual training, or let us come to your site!

We make up an individual training for you by composing topics from cam, motion and linkage design that are relevant for you.

Please send us your inquiry!

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Developer of the software OPTIMUS MOTUS ®

Frequent speaker on mechanism and motion congresses

Teacher for cam technology