



## The effective way to manufacturing concepts and tool design

The modular Bihler bNX technology software provides optimum support for the virtual modeling of your products as well as the development and design of Bihler stamping and forming tools. With this globally unique solution for system engineering and tool design, you benefit from shortest development times, significantly lower development costs, optimized products with higher quality and reliable tools with higher output rates.

The Bihler bNX Software is a unique solution for plant and tool engineering. The software allows you to quickly adapt to changing product or production requirements – for instance with the consistent templates for our modular LEANTOOL tool kit. In addition to the fully integrated Bihler Technology Software, bNX also contains the basic software modules of Siemens NX for optimum, market oriented design.

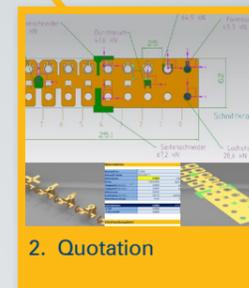


I. Quotation Phase



1. Customer inquiry

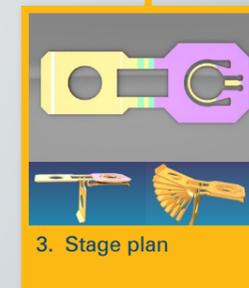
You receive a request from your customer regarding the production of a stamped and formed part. You then create your task (work instruction), collect information and clarify any questions.



2. Quotation

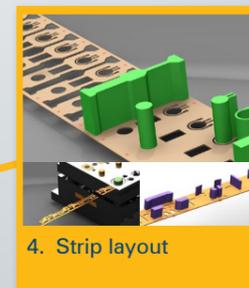
Initial calculations are performed to provide a quotation. You create a concept and a method plan and integrate computed values. You then receive a document with the determined values as a base for your detailed offer.

II. Design Phase



3. Stage plan

Stage plans are created easily and quickly using an extensive pool of material parameters. You assign the values k factor and springback and receive your specific 3D stage method plan.



4. Strip layout

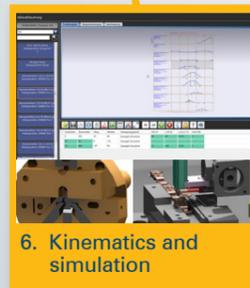
You then create the strip layout with the bNX software. This is done using standard components that allow simple, consistent and extremely fast modifications.



5. Tool design

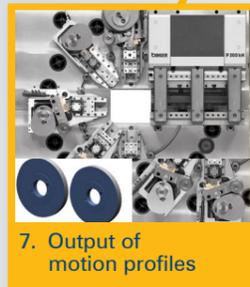
The consistent process is supported by end-to-end design methods and extensive engineering tools with standard components and templates for tool design. These are available in different design phases.

III. Kinematics and Simulation Phase



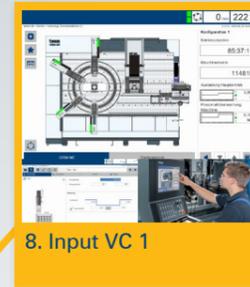
6. Kinematics and simulation

With the "Kinematics" module, you define the function sequences for your bending tool. You can simulate all motion sequences of your entire Bihler system in 3D and use this feature for optimizing the motion sequences.



7. Output of motion profiles

With the output of motion profiles, the 2D/3D cams can be created directly. Different cams are possible (head, bead, drum cam, etc.).



8. Input VC 1

For the servo units, the bi-directional exchange of motion profiles is done using XML files. A comparison of target/actual values is possible at any time.



Consistent, transparent  
bNX process

## PLANNING



### Rough planning

Based on a customer component, the “Bihlerplanning” WebApp ([www.bihlerplanning.de](http://www.bihlerplanning.de)) displays examples for stamped and formed parts. Additional technical information provides increased transparency during the early planning phase.

### Detailed planning

During the detailed planning phase, forming studies are defined based on the customer’s component. The process steps are then presented in phase plans. Template technology ensures a quick layout of the servo-controlled RM-NC and GRM-NC stamping and forming machines (method plan).

## DESIGN



### Modeling

The bNX solution assists users with various applications throughout the modeling process. All standard parts available through Bihler are stored in libraries.

### Kinematics

Technical data ensures motion sequences of the defined design layout as a base for the VC 1 control system.

### Simulation

Movements can already be verified, optimized and prepared for output to the VC 1 control system at the CAD workstation.

### Itemization

At the end of the design phase, 2D designs can be created as well as files exported in JT format (3D visualization).

## MANUFACTURING

Simple method development and optimization ensure shorter process chains and lower production costs. Pioneers of this new manufacturing culture such as Bihler already benefit from these advantages. They are equipped with digital process structures and do not have historic analog drawing boards as baggage.

## PRODUCTION

The interconnection of industrial production with state-of-the-art information and communication technology (VC 1 control system) is unthinkable without concepts. Therefore, the complete solution with bNX contains all process-relevant information required for internal product development and the exchange with suppliers, development partners and end customers – from design to production.