



Roll-forming machine RF50CNC

The roll-forming machine RF50CNC is used to produce grooves on rotationally symmetric components.

- Ø 3 – Ø 50 mm rollable
- up to Ø 2 mm wall thickness machinable
- repeat accuracy ±0.05 mm
- moulding cycle approx. 5-10 sec.

Chuck available with integrated stopper.

Attainable tightness of up to IP65 possible depending on material combination.

Freely programmable data base.

Unit adjustable to customer's requirements.

Machine setup

The roll-forming machine RF50CNC represents a consistent enhancement of existing systems for the grooving of pipes, pipe ends, sleeves, shells, armatures and many other applications.

When grooving a work piece, the machine can be programmed for up to three rolling positions per roll-forming process. A typical example is the implementation of sensor sleeves which mechanically protect connection leads from being pulled out and seal them at the same time (IP67 possible). This procedure also allows roll-forming of plugs into sensor sleeves or tightening of protective cases.

The handling of the machine is very simple. The work piece is inserted into the opening, usually positioned with the help of a chuck, which assures that it does not move while the tools roll around the axis of the work piece. The corresponding working parameters can be stored and managed in the machine control system. The user interface allows easy and logical operation. All essential processes are electronically monitored and the data is stored in the control system. This ensures high process safety and reproducibility.

Other applications in the field of cutting by chipless isolation of pipes are also possible. Producers of thermal elements use this roll-forming machine to remove end pieces from sheathed cables.

Basic machine

- basic module with fastening holes for the reception of all functional components consists of:
 - main base plate with vertical assembly block
 - drive system: 2 servomotors with toothed belt discs/toothed belt (2 CNC axes)
 - recirculating ball screw with screw nut and double thrust bearings, adaption to shaft guide of cone ring for infeed of tools
 - main ball screw mounted free of play by means of spring system for reception of tool holding disc
 - includes protection cover with gas spring, handle and security sensor
- roll-forming head available in 2 versions:
 - option 1: 3 roll holders with product specific rollers
 - option 2: 1 roll holder with product specific rollers and 1 counter roll holder with counter roller
- servo drive enables exact control of driving parts

Protection measures

- protection door at front of forming head; easy insertion of parts guaranteed

- front protection also available with light grid
- includes protection cover with gas spring, handle and security sensor over drive system
- emergency stop immediately stops all movements

Control system

- VIPA Speed7 SPS with user panel Siemens TP700 comfort
- parameterisation and user software installed
- process parameter for all three grooves per data set can be freely parameterised
- control cabinet installed into frame
- additional buttons for start, stop and emergency stop
- pedal button for release of forming process by operator
- data sets selectable via user panel (by means of bar code scanner if desired)

Software

- data display on user interface
- calibration instructions are set up and selectable at all times via button
- standard databank for product specific parameter with 50 data sets (expandable up to 4,000)
- 3 access levels for machine control (user, service and administrator)
- language can be chosen as requested (default German and English, other languages with extra charge)

Frame

- holds all machine components
- standing work station, length x width x depth approx. 1,200 x 1,200 x 890 mm
- working height approx.. 1,123 mm
- 4 rotatable wheels, 2 with locking brake
- welded and coated steel frame, colour can be chosen as requested
- desk top made of steel or wood

Optional components – additions

Model RF50CNC

Chuck positioning

- manually with longitudinal slide to admit straining module. Driven by crank and trapezoidal thread spindle TR4x5. Positioning with help of counting module.
- motor-driven with longitudinal slide to admit straining module. Driven by servomotor and trapezoidal thread spindle TR4x5.

Chuck module

- draw tube with chuck receptor and end cone
- standard chuck is used for straining of work piece
- chuck geometry can be adjusted to work piece
- position of component part in chuck can be regulated via stopper
- stopper with parts sensor available
- chucking power adjustable by motor current

Manual positioning

- roll-forming tool is opened; chuck in position for insertion and roll-forming
- component part is inserted manually into chuck
- position of component part is registered by sensor, chuck closes
- close protective door or take hands out of light grid
- rollers roll around work piece, close and open
- 1 rolling position possible
- chucks open automatically
- component part can be taken out of machine
- moulding time depending on diameter 4 sec.



Roll-forming can be surveyed with the help of an additional force-displacement-monitor. Error message when NOK. Machine restarts after acknowledgement.

Motor-driven positioning

- roll-forming tool is opened; chuck in position for insertion
- component part is inserted manually into chuck
- position of component part is registered by sensor, chuck closes
- close protective door or take hands out of light grid
- chuck moves into first, second or third roll-forming position; rollers roll around work piece, close and open
- chuck moves back to foremost position and opens automatically
- component part can be taken out of machine
- moulding time depending on diameter and number of grooves 4 - 12 sec.



Roll-forming can be surveyed with the help of an additional force-displacement-monitor. Error message when NOK. Machine restarts after acknowledgement.

Handheld barcode scanner

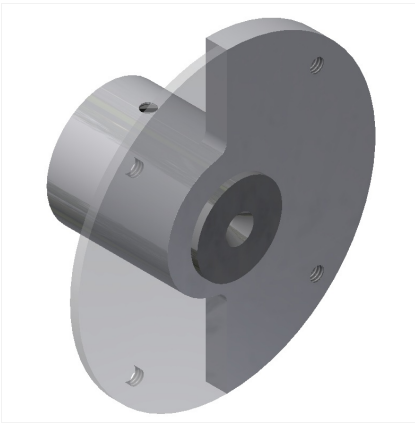
- data set selection via handheld barcode scanner
- 1D or 2D codes
- with rack



Product specific insertion aid

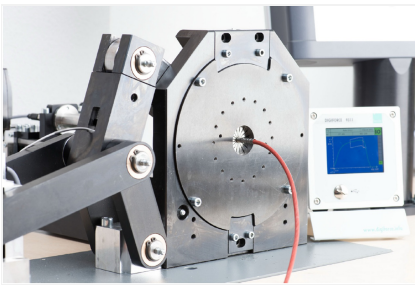
- insertion hull in protective door for centric insertion without opening of door
- various diameters possible

- up to max. 8 mm



Load-displacement monitoring

- load cell in infeed axis calculates load in lever
- graphic display of loads on separate measuring device
- OK and NOK evaluation



Height adjustable frame

- desktop mounted on height adjustable legs
- height adjustable up to 300 mm
- 4 rotatable wheels, 2 with locking brake



External data protection with HSDBASE software

- software for reading process data from SPS, e.g. current operator
- storage and back-up of any selected data from OP on server/individual PC
- data collection controllable in different modes (cyclic, change in value etc.)
- connection of machine to company network via TCP/IP-address
- reading of data in different formats, e.g. *.csv, access, mySQL etc.

Transport, instruction and operation setup at customer's premises

- transport to customer is carried out by Fichter formtec GmbH

- setup and start of operation carried out by Fichter formtec GmbH
- instruction approx. 2 hours on customer's premises
- production support approx. 1 hour on customer's premises
- plus travel expenses

Nonstandard models

- machine can be adjusted according to requirements
- integration of machine into entire machine complex
- cutting-off of component parts with circular knives (replace roll-forming rollers)
- further alternatives possible

Machine documents

Documentation

- user and maintenance manuals
- lists of parts, spare parts and working parts
- electric diagram
- specimens: 1 x paper, 1 x CD; language: German or English
- production drawings of parts and source codes of software are not included
- transfer of documentation after starting of machine

Hazard analysis, CE mark

- hazard analysis is carried out and documented
- machine / unit delivered with CE mark

Fichter formtec GmbH
Bruckmatten 6
DE-79356 Eichstetten

Vertretungsberechtigte:
Florian Eckerle + Pascal Spöri

Tel.: +49 7663/914397-0
Email: info@fichter-formtec.de