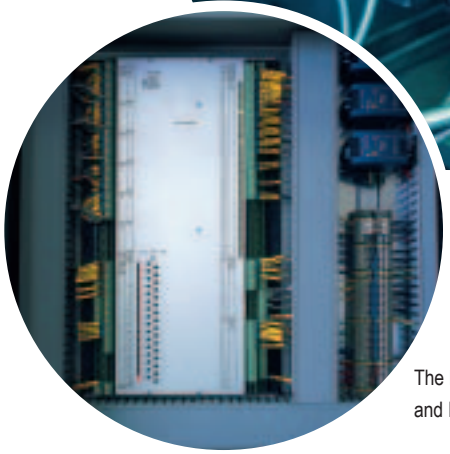
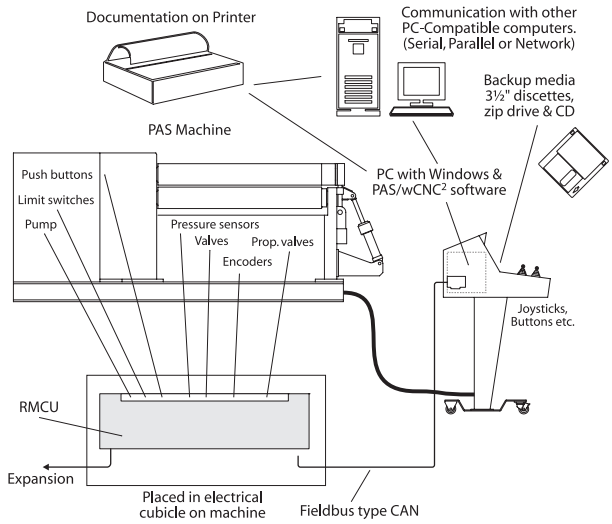
ROUNDO
CNC Systems -
Unlimited Possibilities

ROUNDO

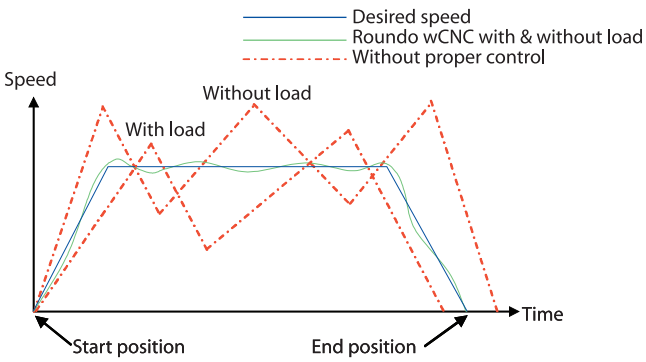
Digital encoder on bending machines, using a resolution of 20 000 pulses/mm for highest possible precision



The RMCU² controls all axes and I/O's of the machine



Powerful combination of sophisticated technology and standard components for ultimate performance and reliability



True CNC with analogue speed and pressure control for axis positioning

Technology at its Best

ROUNDO **wCNC²** runs under a Microsoft Windows® 32-bit Operating System installed on an Industrial PC terminal complete with keyboard and TFT display, placed on the machine's control console. The PC communicates with the **RMCU²** (**R**OUNDO **M**aster **C**ontrol **U**nit, **2**:nd generation) through a **CAN** field bus system, which ensures high-speed transfer rates and reliability. All CNC bending programs as well as language support and machine dependant constants are stored in databases on the hard disk. Therefore there are no practical limits for the number of part programs that can be stored. For loading data or for backup purposes, you may use a 3½" diskette, the built-in CD-R/W-unit or an optional ZIP-drive. To be able to prepare bending programs in advance, the software can also be installed on a desktop computer. When completed, just download the program to the machine via diskette, CD, your local network or Internet.
The machine may run a program at the same time as the database is in use by another PC, achieving true **online** programming, which increases the available production time, and minimizes preparation and setup time.

True CNC

The ROUNDO **wCNC²** system controls speed, ramps and pressures for highest precision and may also control roll parallelism and tilting on plate bending machines. The system is not based on a PLC with all its limitations. Instead, the unique RMCU² hardware uses the latest integrated circuit technology and is designed specifically for ROUNDO bending machines to meet the toughest demands of our customers.

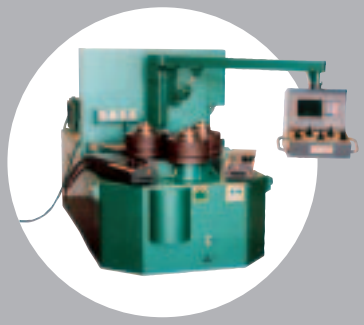
Total Control

The ROUNDO **wCNC²** system can, in its basic version, control up to **12 axes.** Optionally *two or more of these axes* can be positioned simultaneously, providing an **interpolation** function for smooth transitions when bending complex shapes with multiple radii. The CNC may also control side functions on and around the machine, such as:

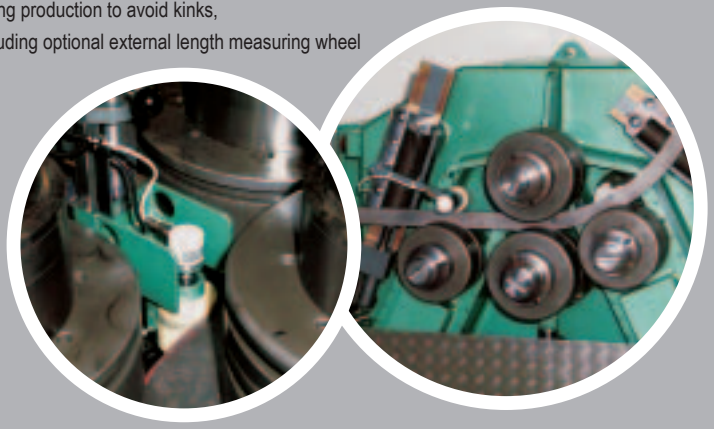
- **Plate Bending Machines:** Drop end, balancing and erection of the top roll, support rolls under the lower roll, side support, top support, material in- and out- feeding systems, etc.
- **Section Bending Machines:** Guide rolls, pushing and pulling roll unit, mandrel and turning unit, calibration and pitch-setting devices, etc.

Precision

At ROUNDO we never compromise the mechanical accuracy or precision of our machines, or our CNC system. We use only high-precision digital encoders for the bending rolls instead of analogue transducers. This unwavering attention to quality and detail, gives you the ultimate combination for quality production.



Flying production to avoid kinks,
including optional external length measuring wheel



User friendly HMI (Human Machine Interface)
Our CNC-equipped machines are easy to operate and do not require any previous CNC experience. The operator can choose from a large number of languages for the CNC control. The positions of the axes and other important information are presented comprehensively and clearly on the large TFT display. The terminal, in combination with the practical **stepless joystick** controls, gives the operator the best possibilities to operate the machine both manually and in CNC-mode.

Bending Wizards for easy Programming
The ROUNDO **wCNC²** features highly advanced Bending Wizards to simplify the creation of a CNC program. Enter the object data and the CNC will automatically create a complete bending program. A unique feature is that the Wizard is active in “real time” and always calculates the positions for each step based on the present information. Adjustments made will be saved and will take effect immediately.

Drill-down Functionality for advanced Programming
For the experienced users, the CNC system offers the possibility to break down the programs into pieces for absolute control of each step of the program.

Graphical Program Simulation
After completing a new bending program, the operator may simulate the bending result with all steps shown on the display, in order to visualize the theoretical shape of the object for each step. Programming errors will thus be exposed and eliminated prior to the first program run with material. Naturally, each step in the program is graphically visualized on the screen in real-time during a CNC program run.

Teach-In Feature
ROUNDO **wCNC²** supports production of unusual and multiple radii parts using our Teach-In feature. This allows the operator to move all axes in any way desired, and each new position will automatically be stored into the CNC program.

Flying Production
Many objects require continuous bending without stops or pauses between the different radii, in order to avoid kinks or marks on the finished part. The ROUNDO **wCNC²** gives you the possibility to perform flying production, including simultaneous adjustment of bending rolls, guide rolls,material supports or whichever other optional equipment you have installed on the machine.

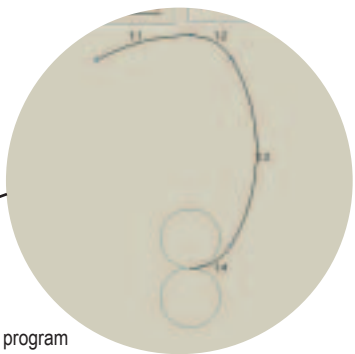
User friendly HMI for easy operation and full control

Select a Wizard from a table of different object shapes

Fill in the required dimensions and object data

For the experienced operator, the system offers possibility to perform adjustment at each step in the bending program

As optional equipment, touch screen is available, as well as web cameras to monitor the back side of the machine, for increased safety



Real time graphic simulation of the bending program

ROUNDO
CNC Systems -
Always in the Lead

First CNC bending machine
makes its debut in 1985

First Windows®- based
CNC delivered in 1995

wCNC² generation

The First with a CNC System

In 1985, ROUNDO was the first to develop CNC controls specifically adapted to bending machines. Since then, we have steadily enhanced and expanded the capabilities of our systems, allowing us to maintain our position as the world leader in this area as well. Up to now, we have delivered more than 500 true CNC controls, on all types of machines, giving us experience and know-how that all future customers will benefit from.

Always ahead of the Competition

The ROUNDO wCNC² software and control system were designed from the ground up specifically to operate ROUNDO bending machines. We did not attempt to adapt general purpose software and off-the-shelf PLC controls for this purpose. Software is written in-house by ROUNDO engineers who understand the complexities of both bending and machine control, based on having delivered over 15 000 bending machines around the world. No other competitive machine offers the combination of true PC-based CNC control using only the highest quality digital components and software designed by experts in the field. *That is what makes ROUNDO the world leader in bending machines.*

CNC for the Future

wCNC² is developed and designed to meet customer needs today as well as tomorrow, and we will continue our efforts to maintain and enhance our position as the world leader. For you as a customer, it is essential to know that support and service are always available whenever needed. Future software upgrades may be distributed via the Internet, as well as support and on-line troubleshooting.
ROUNDO wCNC² is your key to successful production of rolled parts for years and years!

Also available from ROUNDO:

RLC/1 Position control system with two preset values for each axis.
RLC/2 Positioning system for maximum 4 axes, with analogue speed control and interpolation.

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