

# CytroBox

## in Forming

Since its foundation, Linnenbrink-Technik-Warburg Maschinenbau GmbH has become a renowned supplier of special machines and special equipment, fixtures, tools and handling devices on the world market. With the CytroBox from Bosch Rexroth, the family-owned company wants to break new ground in hydraulic supply.

The integrated power unit feeds a system for chipless shaping of passenger car exhaust pipes. For the machine builder's customers, the space required for the hydraulic supply is halved, with the same performance and higher energy efficiency. In addition, the IoT-capable power unit is quieter and has integrated an IoT service for predictive maintenance with CytroConnect.

### INTELLIGENT HYDRAULIC SUPPLY IN FORMING AND PUNCHING TOOL MACHINING

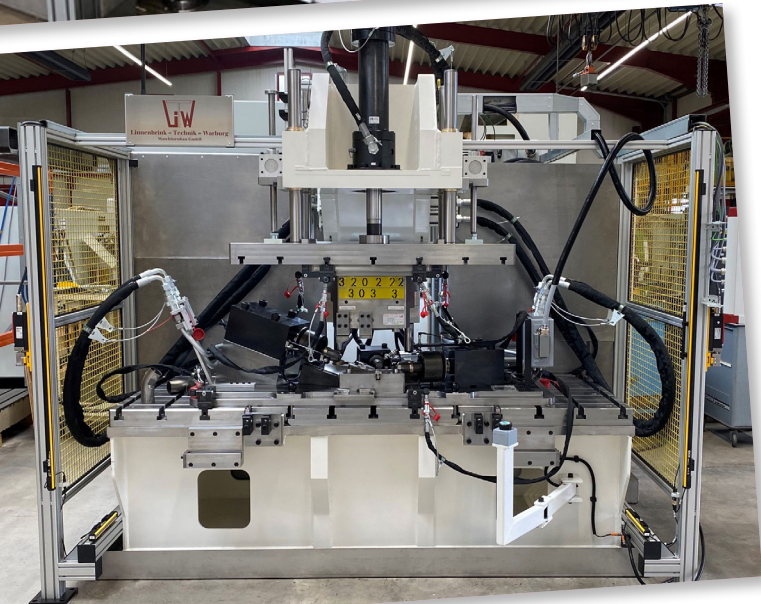
The universal forming device is a fully automatic system that can be equipped with tools individually designed for a specific type of pipe. After the pipe has been placed in the lower half of the mold, the upper half moves down onto the workpiece and clamps it for the machining process. For machining, for example, the side-mounted forming drone engages either in or over the end of the pipe and initiates the deformation. Both mold halves are fixed in the fixture with four hydraulic slide-in clamping elements each.

#### THE CYTROBOX...

- is uncompromisingly compact:  
**Space Savings up to 50%**
- conserves on energy:  
**Energy Savings up to 80%**
- is really quiet:  
**Less than 75dB (A)**
- is connected:  
**100% Connected Product**

#### Features:

- Maximum operating pressure 315 bar
- Maximum flow 160 l/min
- Power 30 kW
- Capacity fluctuation 50 l



## SAME PERFORMANCE WITH HALF THE SPACE

For the pressure supply of the two main functions “mold closing” and “workpiece molding,” Linnenbrink requires only half as much space as before. The fact that the CytroBox can fit on only half a square meter with at least the same performance is due to the integrated design developed by Rexroth. With the aid of simulation technology, the industrial hydraulics expert succeeded in reducing the size of the oil tank by 75 percent without any loss of service life. Further space savings are achieved by the flow-optimized control block and the compact synchronous servo motor in the variable-speed drive of the CytroBox.

## INTELLIGENT HYDRAULIC SUPPLY

By using a servo motor to drive the pump, the speed and thus the volume flow of the pump can be adjusted to the respective demand in the process virtually in real time. Thus, no throttle valves are needed to control the speed. In addition, the maximum pressure can be adjusted so that no additional pressure reducing valves are required.

## AS QUIET AS AN OPEN OFFICE LANDSCAPE

The solution is also characterized by noise-optimized operation. With a maximum of 75 dB(A) for the entire system, noise emissions are in the range between an open-plan office and a loud conversation. If the system does not require any oil, the unit switches off pumping and goes into standby mode.

## ENERGY-EFFICIENT POWER PACKAGE

With its on-demand supply, the machine builder also achieves energy savings of around 60%. The CytroBox achieves its efficiency advantage with an intelligent combination of speed variability, synchronous motor and axial piston pump.

“With the drive concept of the CytroBox, we were able to specifically play the 3 trump cards of space saving, energy efficiency and noise minimization. In addition, the CytroConnect module is a future-proof product with the option of digital networking. This concept was enthusiastically accepted by the end user.”

*(Andreas Dommasch, Sales Industrial Hydraulics)*