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# Complete freedom for bending and pressing processes

## In press brakes, wireless switches in various designs not only improve ergonomic comfort, but also contribute to flexible automation.


*Docked on: The "mobile bending cell" facilitates automation of a conventional press brake.*

Accelerating, braking, changing gear: these pedal functions are familiar to all car drivers. Pedals are also the chief interface to human operators in many other "machines", for example the Xpert series of press brakes manufactured in Gotha by the Swiss machine-builder Bystronic.

This series comprises twelve basic models with press capacities from 40t to 1000t. The larger Xpert presses are suitable for bending and folding components up to 10m long and requiring major press capacity. The lower-capacity presses can form small components at high speed.



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The presses are controlled by foot switches: the user holds a sheet metal part against the rear limit stop and presses the right-hand pedal. The upper cheek of the press comes down and bends the metal as required. At the same time, the limit stops position themselves automatically so that each component is positioned correctly. If a corrective measure is necessary, for example because the bending angle is incorrect, the tool can be opened using the left-hand pedal of the foot control.
The Xpert series has as its central control element a foot switch from the steute Automation range which is attached by cable to the press and is freely positionable. The GSF2 VD series, used here, was developed especially for applications in presses and other forming machines. A special triple-stage switching insert means that a press stroke can be triggered without any of the jerking caused by "normal" switching inserts.

## Cable-free machine operation

A further option which Bystronic offers its customers makes machine operation even more flexible. Karsten Trautvetter, Product Manager for Bending and Bending Automation: "Our Xpert systems can be operated via wireless foot switches connected to the machine by remote control. From the standpoint of the user, this improves ergonomic comfort and increases availability because no cables can become damaged."
The triple-stage and bi-pedal wireless foot control from the steute Wireless range was developed especially for use in presses and other forming machines. Signals are transmitted without cables via the steute safety-related wireless system sWave-safe.
The wireless option is popular with press operators because foot controls often have a high number of switching cycles. Karsten Trautvetter: "When the presses are running in triple shifts, the switches can reach up to and beyond 1.8 million switching cycles a year." This is particularly true for the smallest model, the Xpert 40, which manufactures smaller bent components three times as fast as larger press brakes.

## Battery status visible at all times

From the operator's point of view, one critical point when using wireless switchgear is battery status, especially for machines which have to work continuously at a high rate of productivity. For this reason, steute has developed an extension board for Bystronic as an additional module permitting the battery charge level to be communicated to the control centre. Karsten Trautvetter: "steute provides us with the board, we integrate it in a housing and then offer the overall system. This can include retrofitting of existing plants from cabled to wireless foot controls."

Quote

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*Karsten Trautvetter, Bystronic*



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**INFO**

The steute business unit Wireless will be presenting new components and functions of its sWave-NET wireless network at the Motek. New features include a wireless terminal with a two-line display and three freely configurable push buttons, suitable for use in assembly halls, for example. Motek 2017: Hall 7, Booth 7417

In addition to remote control foot switches, the Xpert systems also use other wireless technology. With its "mobile bending cell", for example, Bystronic has developed a solution which enables a "completely normal" brake press to work fully automatically if required. A mobile cell with a six-axle robot is positioned in front of the press and references itself to the press autonomously. The robot takes sheet metal from the integrated magazine, positions it precisely, initiates the bending process, repeatedly changes its grip, and then removes the finished parts.

Prerequisites for automated operation include the installation of sensors at the limit stop, against which the components are pressed. This is taken care of by a microswitch from Bystronic with an extremely short travel. The switching signal is sent via the steute wireless module from the brake press to the robot cell, which has an integrated antenna.

The mobile bending cell can be con-nected to different Xpert-40 press brakes and also automate existing presses as a retrofit. All that is necessary is to exchange the clamping unit on the machine and retrofit the "remote control finger". The wireless module then communicates with the robot cell – thus wireless operation not only makes processes more flexible in general, but in this case facilitates the flexible automation of folding processes.

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