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Double bender for complex bending forms

Double benders for the bending of bars always guarantee high production performances with considerably reduced personnel expenditure. In daily operation one operator can perform bending processes for which two or three workers are necessary with a conventional method of working. In addition to that, a considerable amount of time is gained through the automation of the processes.
It's actually amazing that there are still companies that don't utilise these advantages. Double benders pay for themselves in a very short time through the saving of personnel expenditure alone, on top of which performance is significantly increased and the operation is simple and requires less effort.

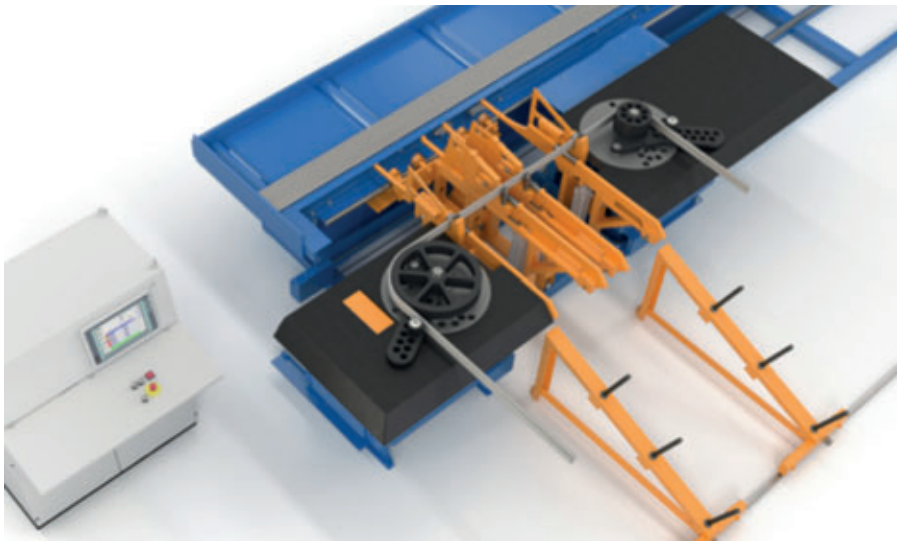

Fig. 1: New Pedax double bender with bending machines that automatically position themselves in the Y-axis and thus enable the use of differently sized bending tools. This enables the production of special shapes with different radii in a single pass.

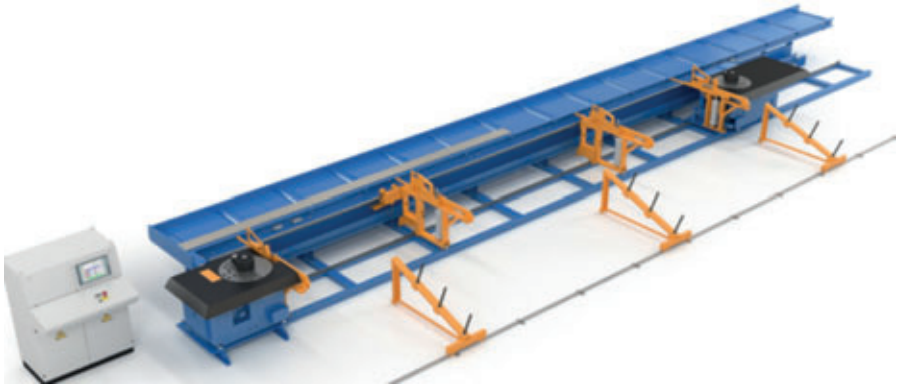

Fig. 2: Double bender in a left-hand version, equipped with one stationary and one mobile bending machine. Designed for one-man operation.

New concept for complex bending forms

The new Pedax Permatic A is designed for the bending of shapes with different radii in a single process. This new, unique concept was jointly elaborated with a notable German rebar shop, developed at Pedax, tested in practice and matured.

In addition to the usual mobility of the mobile bending machine in the longitudinal direction (X-axis), both bending machines now also move in the transverse direction to the bar axis (Y-axis). This allows the machines to be moved independently and in opposite directions to each other. The independent mobility of both machines

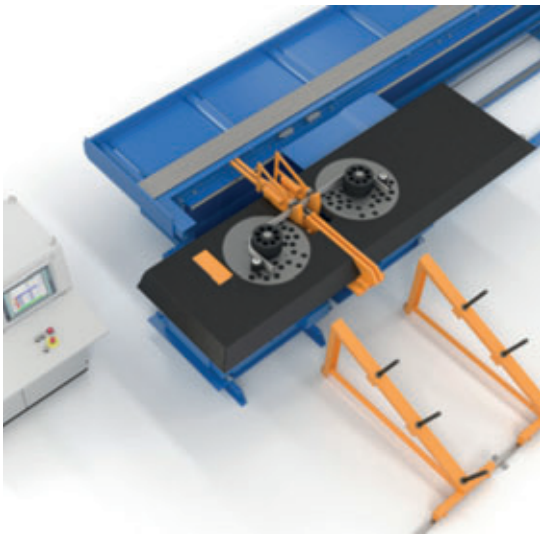

Fig. 3: Short centre-to-centre distance between bending mandrels. Mobile support elements can be removed.

enables the use of differently sized bending rollers or bending hearts, allowing the production of bending shapes with different radii in one automatic process. Therefore shapes are now possible that were previously only feasible using several machines or with multiple tool changes.

Evaluations indicate that these shapes are increasingly in demand. They are used in foundations for bridges, in wind turbines and in steel reinforced concrete construction.

Automatic adjustment of the machines

Since the machines drive automatically to the desired tool position, the insertion position for the bars to be bent always remains the same. Tooling and non-productive times are considerably reduced. Neither hydraulic clamping fixtures nor material supports need to be adjusted. The machines position themselves automatically, as is required for the respective bending rollers or bending hearts in use.

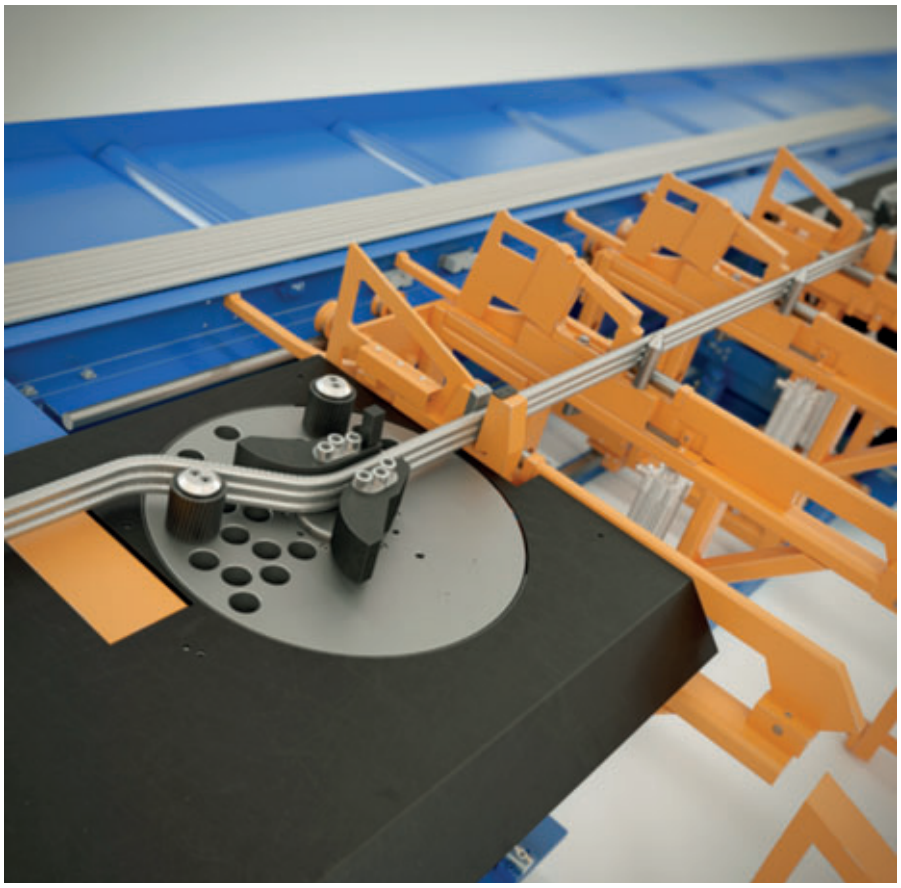

Fig. 4: Bending hearts for automatic bending in a clockwise and counter clockwise direction.

Closest centre-to-centre distances

The minimum distance is only 99 cm, measured from centre to centre of the bending plates. Support blocks are removed from the travel range for this. A click system makes unlocking particularly simple. The range of application of the plant is thereby extended.

Summary and advantages

- New process for an extended range of application, complex bending shapes with different radii are bent in a single pass.
- Considerable shortening of tooling and non-productive times.
- Combination of bending rollers on one machine and bending hearts on the other is possible.
- Pedax quick-change tool system with splines.
- Pneumatic bar feeding and deposition system for effort-saving operation with only one operator.
- Bending speed is controlled automatically and infinitely in relation to the bending shapes and the diameters to be bent.

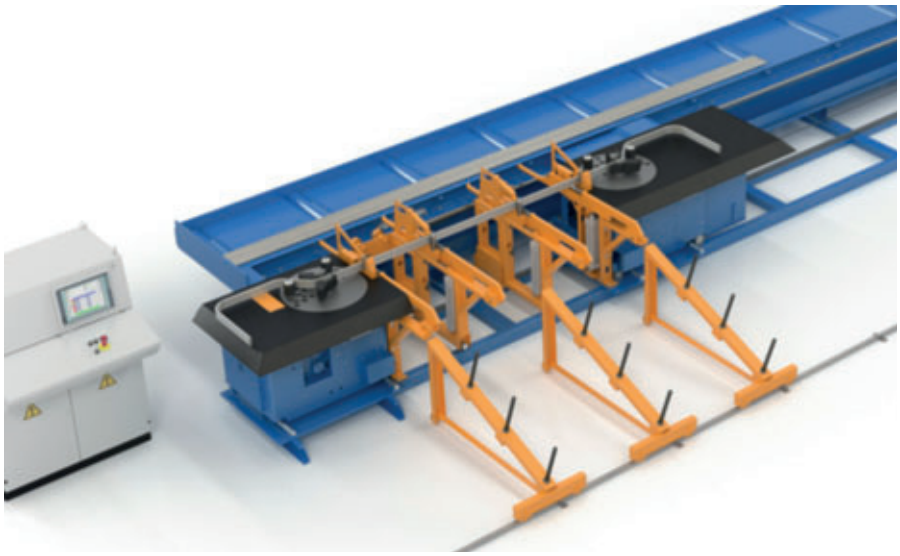

Fig. 5: Typical double bend, manufactured in a single automatic pass

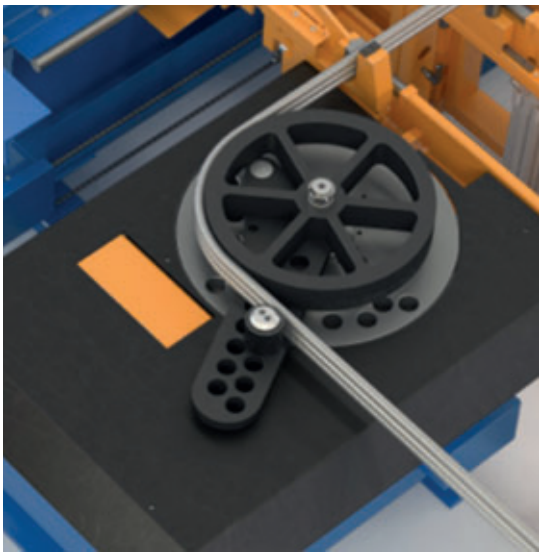

Fig. 7: Special fixture for the use of bending rollers up to 670 mm in diameter

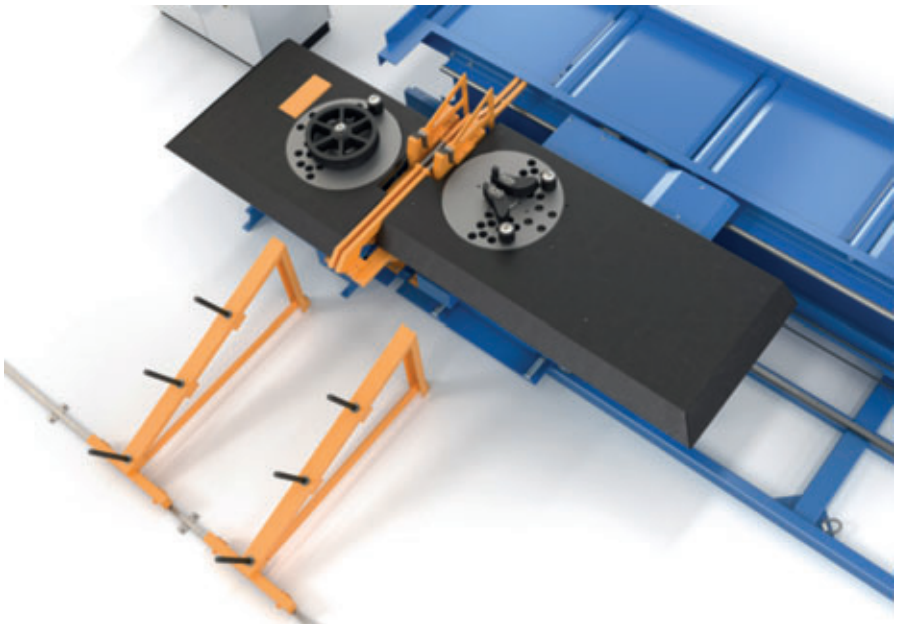

Fig. 6: Simultaneous use of bending hearts and bending rollers by positioning of the machines in the Y-axis

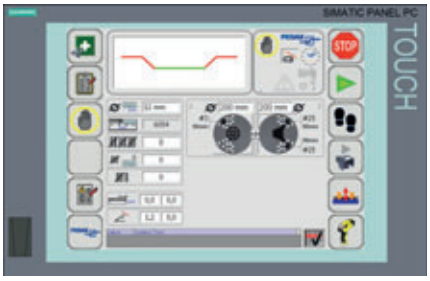

Fig. 8: Particularly user-friendly software from Pedax. Input via Siemens touch screen.

- Pedax software for particularly simple operation. Logical operator interface with clear symbols. Data input via Siemens touch screen with PC 477.
- Operator language selectable, all major languages and many special languages already stored.
- Polygonal bending possible.
- Virtual machine extension beyond the nominal length. The mobile bending machine operates by means of clamping fixture using a clamp-and-feed technique. This allows longer bars to be processed as well.

A key factor and always decisive is the output per man per unit time, especially in the processing of reinforcing steel, which demands a great deal of space, effort and time. The profitability of all companies and manufacturing areas depends on the use of personnel, work preparation, logistics and the storage of the individual consignments. There are reserves here whose utilisation brings the decisive advantage and with which a considerable saving of time and thus cost benefits can be gained. The new Permatic double bender shortens production times with reduced use of personnel and enables shapes to be bent that were previously impossible in a single pass.

FURTHER INFORMATION

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