Even Larger Range of Parts - Bending-After-the-Cut Function Now Also Available for CNC Single-Head Bending Machine BM 90 up to 16mm

The "bending-after-the-cut" function of the BM 90 has always been a popular feature among WAFIOS customers. Up to now, it has been available for the entire BM line except for the BM 90, i.e. it was limited to an operating range of 2mm - 7mm max. (1,900 N/mm²) or 13mm max. (600 N/mm²).

The BM line is known to be a highly flexible machine concept that covers a very large range of parts. The BM 90 of this line sets standards with its three independently controllable mandrel and bending axes, the two axes for lowering the bending pins as well as the moving cut option, see fig. 1 WAFIOS BM 90. It enables completely new production possibilities and bending variants in the area of thick and spring-hard wires. The standard equipment of the bending head consists of 7 axes for cross stroke, up and down stroke, mandrel axis and two bending axes. In addition, the bending pins of the bending axes can be axially lowered independently of each other which increases the range of parts that can be produced even more. Moreover, the machine features optimized tools for increasing the output of specially bent parts and options for additional operations, like e.g. chamfering.

For the past two years, the WAFIOS BM 90 CNC bending machine has been available with the possibility to be upgraded to a torsion spring machine by the optional use of a coiling unit. Thanks to its lateral movement coiling mandrel axis, the coiling unit supports genuine right-hand/left-hand coiling in one bent part. The impressive bend-back clearance of the coiling unit, combined with the (manually) adjustable bending head, is enabling previously unheard of levels of variety to be achieved in the production of ready-to-use parts in one pass.

By implementing the additional "bending-after-the-cut" option, the already impressive range of parts that can be produced, is increased even more.
The system enables the production of ready-to-use, complicated geometries by clamping the partially finished part with a gripper after it has been cut off from the coil, and feeding it backwards to the bending head where the requested geometry is finished.
Therefore, parts which would collide with the cutting unit, if the "bending-after-the-cut" unit were not installed, can now be produced ready-to-use.
The customer benefits are obvious. Additional manual operations are avoided, costs per unit are reduced.

Two-dimensional or three-dimensional parts with loops (with two closed loops) at one plane are geometric examples of parts that can be manufactured ready-to-use only with this system. Small, closed frame parts can be produced without an height offset. (See fig. 2 and 3)

The "bending-after-the-cut" function has been incorporated for a long time into the WAFIOS programming system. It can be easily programmed and proved to be useful for smaller diameter ranges in the past.
The system is mounted to the CNC-controlled support plate (BM 30 - BM 60 or to the bending unit (at the BM 90)). It is now available for all WAFIOS BM and BMU machines.

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Fig. 1 WAFIOS BM 90

Fig. 2 Bending-after-the-cut

Fig. 3 Bending-after-the-cut