

► Application example

A road milling machine has a large, rotating roller equipped with hard metal cutters, which mills off the surface in the required manner. For this purpose it is necessary to have the height of the roller as well as its angle variable.

In the case of the machines up to now, the milling depth and the angle were set with pushbuttons (Up, Down, Left, Raise / Lower and Right Raise / Lower) by the operator and continually corrected. The controlling was purely visual. This required the highest concentration of the operator and frequently led to mistakes in the settings. With the new solution, the controlling activity is to be automated. Milling depth and milling angle shall be able to be predefined and set and complied with by means of the control system.

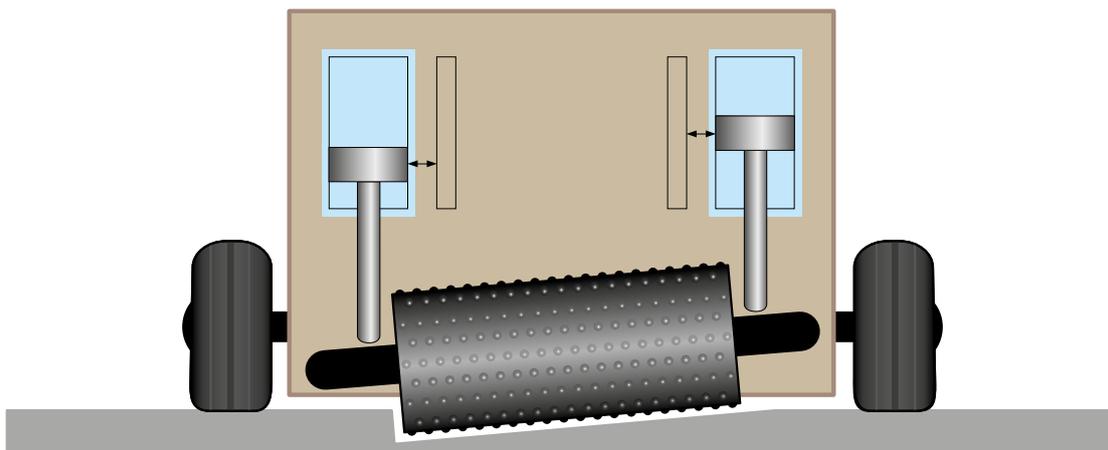
Solution approach

In the zone of the roller two hydraulic cylinders set the required milling depth. This is measured with position control systems and returned to the control electronics. Every axis has its own position control circuit which automatically complies with the predefined milling depth. An offset signal is supplied to the two position control circuits, by which the milling angle can be set.

Customer benefit

- ◆ Automated, economical working sequences
- ◆ Low effort for the implementation
- ◆ Solution from one hand

Task



► Technical description

As the milling depth command variable, to both position control circuits an analogue value in the form of a voltage is provided with the potentiometer “milling depth” at the analogue input 1. On the controller card this is used as command value for the cylinder 1 and cylinder 2. As milling angle command value an analogue value in the form of a voltage is provided at the analogue input 2 with the potentiometer “milling angle”. On the controller card for the cylinder 1 this is added to the position command variable, for the cylinder 2 subtracted from the command variable. Thanks to the flexible parameterisation possibilities, the MD2 electronics enable the addition / subtraction of the two command values (milling depth / milling angle).

The current position of both cylinders is provided at the analogue input 3, resp., at the analogue input 4 as an analogue value in the form of a voltage with the two position control measuring systems “feedback value 1”, resp., “feedback value 2”.

The predefined position of the cylinders is complied with automatically by the control system and corrected in case of changes. In case of the MD2 electronics, two channels are used internally. Both channels are operated in the controller mode “axis position controlled”. Channel 1 controls the cylinder 1 through the solenoids A and B, channel 2 the cylinder 2 through the solenoids C and D. In case of both channels, the value of the analogue input 1 is used as the command value 1, the value of the analogue input 2 as command value 2, whereby the command value 2 is inverted in case of the channel 2.

Utilised components

2 proportional directional valves

WDPFA06-ACB-S-16-G24

Data sheet 1.10-75

1 controller module „Enhanced controller“

MD2388D81-A

Data sheet 1.13-240

Technical realisation

