

# **MECHANIZATION AND AUTOMATION GEAR MILLING**

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Cutting teeth is the most time consuming process in the technology of gears. It spent 50 - 60% of the total labor input processing gear. Therefore, improving the efficiency of the process is an important task gear milling machine.

Increase production and reduce the labor intensity of production gear can be achieved through mechanization and automation gear treatment. This should be done on hard with a powerful high-performance electric machines at higher cutting conditions using multistart hobs.

To some extent, the control problem can be solved by gear milling process on automatic gear gear milling machines. As more fully this is possible with CNC gear milling machines that extend the capabilities of the different cycles of gear wheels, and within these cycles in the different periods of gear cutting allow to regulating the cutting conditions to changing both the mills in general and some of its teeth, cutting conditions.

In order to facilitate the work of the working for auxiliary devices use high-speed mechanical, pneumatic and hydraulic clamping systems, loading and unloading devices for installation and removal of blanks, the device to automatically turn on and off the supply, the release of gears before unloading.

For gears that are made in small batches, the main focus of mechanization and automation control software, which is used very often in gear treatment rollers and gears, the two-pass processing gears with one unit - preliminary and final, while cutting several identical gears.

Software control milling machines can be carried out using punch cards, with periodically rotating drums, which are installed cams acting on the switches.

Gear milling machines can also be equipped with gauging tools that provide automatic machine according to the detected variations

in the basic parameters of the product. Application of active control is especially useful for large machines where the removal and installation of the new pieces on the machine to correct the abnormalities associated with significant difficulties. Modern gear milling machines are equipped with automatic devices for axial shifting of hobs and loop counter with alarm about the need to change the tool and stop the machine.

And so, if the gears are made in small batches, the main direction of mechanization and automation control software.

For large machines are useful means of active control.

Mechanization and automation of gear milling and control gear directly on the machine makes better use of the high-speed carbide gear milling tools, because in this case, in addition to a reduction in computing time is reduced and idle times. This will lead to increased production of gears without the use of additional equipment and enhance the number of workers - machinists.

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