Production of spiral bevel gears from the bar
Bevel gear cutting

Production of bevel gears on turning/milling centers from INDEX

Turn your INDEX R200 or INDEX R300 turning/milling center into a gear cutting machine. With this technology you can produce spiral bevel gears from the bar completely in one setup (front and rear end machining).

The proven R series platform, which combines two five-axis machines in one, is an ideal base for bevel gear cutting due to its excellent static, dynamic and thermal properties.

Part of our technology package is a special control cycle. Using this cycle, you enter the relevant machine data and correction data for the toothing.

The tools used are special INDEX cutter heads with carbide inserts. Where you have previously required a special gear cutting machine, you can now use a flexible turning/milling center for production of your bevel gears with a minimum of manpower.

Machining steps
• Outer rough and finish turning
• Facing
• Undercutting
• Drilling
• Milling spiral gears
• Deburring teeth
• Polygon milling & chamfering
• Complete off-the-bar machining in one production run

Example:
• Material: 1.7131 (16MnCr5)
• No. of teeth: 23
• Module: 1.15
• Cycle time (TG): approx. 3 min
• Tooth cutting time: 30 s
• Cutting rate \( v_c \): 180 m/min
Tool

- INDEX cutter heads with module-dependent indexable inserts
- Axial and radial adjustability
- Internal coolant supply possible: Oil or emulsion

Up to 6 cutting edges for:
- maximum tool life
- optimum cutting performance
- top quality

Software

- Easy programming by parameters
- Input of parameter and correction data via cycle directly on the machine control
- On request, calculation of parameter data by INDEX
Index-Werke GmbH & Co. KG
Hahn & Tessky
Plochinger Straße 92
73730 Esslingen
www.index-traub.com/gearing

Quality

- Achievable accuracy up to IT5
- DIN 3965/86
- Module range: 0.6 - 4.0 mm
- Deburring on the machine

Technology available for the following machines:
INDEX R200 and R300

Quality certification including topographic measuring

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