INDEX has developed a technology package for bevel gear hobbing, which consists of a special control cycle and four INDEX cutter inserts. This technology is also fully integrated on various INDEX machines. The two inserts as on a conventional gear cutting machine. These include, for example, machine distance, eccentricity and auxiliary angle. The cycle translates these values into the movements of each axis so that, in the end, the relative movements are effected.

INDEX meanwhile covers its high in-house demand for bevel gears autonomously with a gear cutting machine. After all, their quality is largely responsible for smooth parts removal. The complete machining results in a clear advantage in cycle time. Dr. Volker Sellmeier provides figures: “When we machine the typical bevel gears with module 1.15 mm and approximately 25 teeth for our tool holders completely from bar stock, we achieve a cycle time of less than 3 minutes. The share of gear cutting amounts to about 30 seconds.”

Advantages of bevel gear hobbing on the INDEX R200 & R300

Throughput advantage
• Replacement of several machines with one INDEX R200/R300
• Machining from bar stock possible
• Reduced cycle and setup times
• Tool magazine with sliding tools

Process advantage
• Front and rear end machining
• Automatic parts removal
• Easy and stable clamping when machining from bar stock
• Machine can not only be used for gear cutting, but also for turning, drilling, milling, tapping, brushing (deburring), internal/external grinding, and measuring.

Quality advantage
• Minimization of re-clamping errors
• Very tight geometry and position tolerances
• Mass producers that want to produce bevel gears in large quantities at minimal cost

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