

Best practice

Machining Toolox®



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SSAB Oxelösund is neither an expert nor a supplier of cutting tools. We by no means claim to have found the optimum solutions, but we are happy to share our experiences. Please also seek the expertise of your cutting tool suppliers. For further information contact Jonny Myrbakk on +46 155 25 46 48.

Machining



The service life of a cutting edge is governed by the force on and the speed of the tool. ($N \cdot m/s = Nm/s = J/s = W$). In order to lower the force and the heat of the tool, the development of inserts has gone from blunt to sharper edges. According to Sandvik, the cutting speed can be increased by 30% for the same service life.

On top of that, sharp inserts like Sandvik GC1025 allow the cutting speed for TOOLOX 33 to be increased by 25% compared with 2312 (P20S) and much more compared with 2311 (P20). For more information www.coromant.sandvik.com and our recommendations www.toolox.com

Drilling

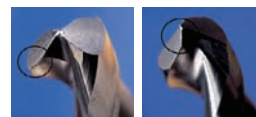


Short holes in TOOLOX 33&44 are best drilled with cemented carbide drills, Sandvik have a wide range of such products. For further information www.coromant.sandvik.com

Deep holes (10-12 times the diameter) in TOOLOX 33&44 with fine tolerances, have been drilled with straight flute cemented carbide drills, using holes in the drill for cooling. The drilled holes look as though they have been reamed. The name of the drill used is a Miller drill called "Futura Coated M2612 12*D". For further information www.miller-tools.de



Cooling channels (10 mm in diameter and 250 mm long) in TOOLOX 33&44 can be drilled with high-speed drills, preferably cobalt alloyed. It is important to use machine feeding to avoid "hard spots" in the material. Drill tip angle for hard material use to be 130 degrees. By using a sharper drill tip angle (110-118 degrees) we have achieved 2-3 times better service life. The wear of the drill will then start at the centre of the drill and not at the periphery. For further information www.guhringer.com



Tapping

Tapping is the most critical operation for TOOLOX 44. Milling the thread is a good method when possible. Tapping the thread works with the right tap. Emuge-Franken of Germany www.emuge-franken.de have run trials to find appropriate taps for TOOLOX 44, their best result are:

- **M6** with "Reckord 1A-Z-TiCN"
185 holes with a coated high speed tap
(art.B0109401.0060)

- **M5** with "Reckord 1A-Z-TiCN"
125 holes with a coated high speed tap
(art.B0109401.0050)



TOOLOX®
PREHARDENED TOOL STEEL