

## **oelheld, ANCA, Saint-Gabain grinding trial boost's machine efficiency by 200%**

A joint venture between tool and cutter grinding machine maker ANCA, synthetic cutting fluid specialist oelheld ( UK ) Ltd and grinding wheel maker Saint-Gobain Abrasives has resulted in a 200% productivity increase in the manufacture of 10 mm diameter HSS twist drills. As Martyn Cross, Technical Manager at ANCA ( UK ) Ltd affirmed.

' The TX7 has gained universal acceptance from companies involved in high volume rotary cutting tool manufacture. With an 18kW spindle running at speeds of up to 10,000 rpm the ANCA offers accuracy, power and flexibility, permitting a wide range of production work to be undertaken that would have previously required dedicated single operation machines.

' AT ANCA we recognise that coolant and grinding wheel selection are critical factors which must be optimised if a machine is to deliver its best performance. After running identical trials with different wheels and grinding fluids, our tests proved that two products oelheld's SINTOGRIND TT and Saint-Gobain new AULOS wheel, were quite simply miles ahead. '

To validate ANCA's research the three companies used EMO to demonstrate their effectiveness by manufacturing a 10 mm diameter 2 flute HSS twist drill with a flute length of 75 mm. A standard ANCA TX7 machine with 18 kW drive and 0 -10,000 variable speed spindle was equipped with a AULOS type 01 slotted 200 mm diameter grinding wheel. To keep the wheel cool and clean the ANCA was fed with oelheld SINTOGRIND TT at the rate of 100 lts minute / 15 bar. This was increased to 30 lts minute at 70 bar for wheel cleaning. The grinding programme, developed by Martyn Cross, consisted of 6 operations. These included digitising the blank end, fluting from solid, digitising the flute position ( indexing ) OD clearance grinding, followed by point grinding and point gashing or web thinning. Grinding parameters were cutting speed of 100 m/s, in feed of 4.2 mm with feed rate of 1700 mm / minute. The combined effect was to cut the cycle time from ten minutes to just two and half minutes, a productivity increase entirely due to coolant and wheel selection.

Saint-Gobain's AULOS wheel features a patented long aspect ceramic abrasive. It has a very free cutting open wheel face

which permits flute grinding up to 25 times faster than a CBN wheel with a depth of cut from 4 to 6 mm at feed rates of 1200 / 1700 mm minute. To produce the 10 mm HSS drill the ANCA was equipped with two AULOS wheels. The wheel was dressed after every 5 work pieces, the dressing cycle removes 30 microns. This means 4000 / 5000 drill blanks can be ground before the wheels are exhausted.

To ensure the AULOS wheel retains its cutting edge ANCA used SINTOGRIND TT a physiologically safe ultra - thin grinding fluid which is free from chlorine and heavy metals. SINTOGRIND has an absolute resistance to shearing and works by absorbing the heat and pressure generated during grinding. oelheld claim wheel life can be doubled and surface finish improved, typically 0.5 micron compared to 2.0 micron. With a flash point of 160 degrees C ( PMCC ) SINTOGRIND creates virtually no foam even under high pressure ( 70 bar ) making a safer environment for the machine and the operator. With a virtually endless service life SINTOGRIND TT is dermatologically safe. Being 85% bio - degradable it is environmentally safe. With no residual odour it is very user friendly.