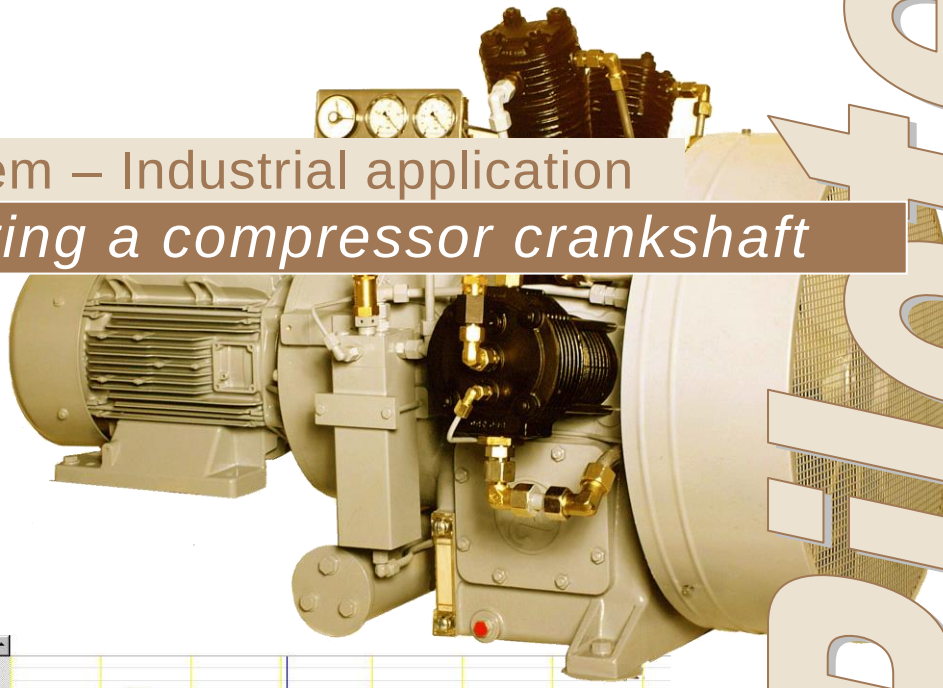
Tool wear and breakage monitoring system – Industrial application

Boring a compressor crankshaft



Machining two 1-mm diameter bores in a cast iron compressor crankshaft on a machining center equipped with a 20kW spindle motor.

WattPilote systems separate the machining power consumption curve from the overall spindle power consumption curve. The no-load spindle power is measured and subtracted before the tool contacts the part. Only the machining power, independent from any variations in no-load power (caused by changes in temperature, lubrication, etc.), is considered while monitoring production.

The small amount of power consumed by the machining operation (64 watts) is repeatable, so the spot-drilling and boring tools are monitored reliably. All spot-drill and boring phases are displayed graphically. Any tool breakage is rapidly detected by the lower limit.

► Sensitivity

Monitoring a 64 watt machining operation done with a 20,000 watt spindle.

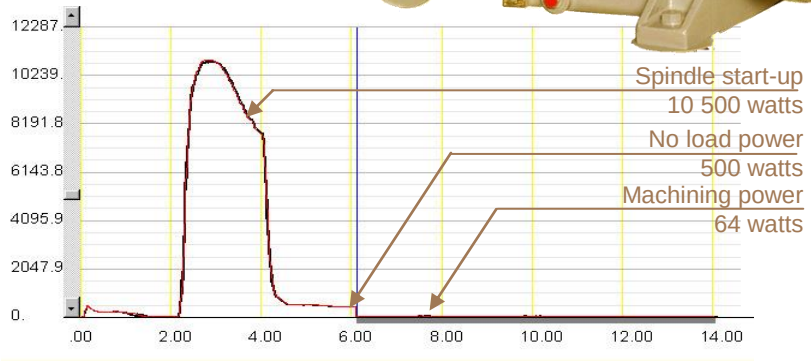
► Resolution

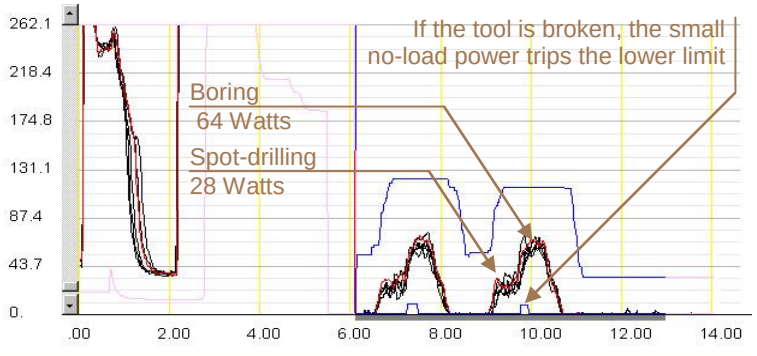
Measuring machining power consumption with a 0.5 watt precision.

► Visualization

Displaying and recording the spot-drilling and boring operations.

The investment in WattPilote is amortised in less than 6 months through the elimination of scrap parts.





WattPilote

1, chemin des Chaux - 42000 Saint-Etienne - FRANCE | Tel +33 (0)4 77 74 92 50 | Fax +33 (0)4 77 74 92 05 | www.digitalway.fr | contact@digitalway.fr