

## CASE STUDY

# Machine Kehren CNC Multi-spindle Vertical Grinding Centre

Customer **Aerospace Manufacturer**

## Retrofit & Rebuild

Persistent mechanical systems failures cost you time and money. Mechanical wear is inevitable with all machines, but it doesn't mean the end of your machines life. You can reduce downtime and improve performance with a CNC retrofit and rebuild. Guiding systems, ballscrews, spindles, along with hydraulic, pneumatic and lubrication systems, CNC control, servo and spindle motors, drives, electrical component and wiring can all be rebuilt or replaced, giving your machine a new lease of life. An economical alternative to buying a new machine.



### Original Machine Condition

- Machine surplus to requirements in disused workshop
- Control system consisted of obsolete technology
- Spindles in-operable
- Rotary indexing axis in-operable
- Worn mechanics



### Refurbishment Specification

**MTT** were required to dismantle, relocate, refurbish and re-install this machine in a new site location.

- Machine stripped down, moved to MTT workshop, cleaned, inspected
- Replaced Electrical & Control system with Siemens 840D Solution-Line NC with full safety integrated control
- Replaced axis motors
- Refurbished 3 spindles
- Replaced all measuring systems with new EnDat02 absolute encoders and linear scales which reduce machine start up times
- Refurbished or renewed all oil and fluid pumps and motors
- Replaced Operator control station with Rittal comfort panel and Siemens 15" HMI, control panel and keyboard
- Replaced Electrical cabinet with new Rittal cabinet
- Replaced complete machine wiring
- Retrofitted and commissioned a new Renishaw work piece probing system

*continued overleaf*



Rotary table before refurbishment



Refurbished rotary table





### Mechanical refurbishment comprised

- Replacement of linear bearings
- Refurbishment of hydrostatic guide-ways
- Refurbishment of rotary table and drive train
- Refurbishment of three grinding spindles
- Refurbishment of spindle head rotary positioning axis
- Refurbishment of hydraulic, hydrostatic, lubrication, chiller and coolant systems including the addition of an in-line coolant chiller
- Design and install of fully enclosed machine guarding system in line with the Machinery Directive and PUWER regulations.

Following successful completion of Factory Acceptance Test refurbished machine was re-installed in a new location and geometric alignments reset prior to Site Acceptance Testing and sign off

MTT can modify your CNC machine at your facility. We can also transport machines to MTT's modernisation facility to minimise disruption to your manufacturing environment.

#### After Refurbishment



#### Refurbishment of spindle



#### Before Refurbishment



By choosing one of our four key services you could extend the life of your machine

**Retrofit   Rebuild   Remanufacture   Design & Build**



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To talk with one of our engineers  
or book a machine assessment

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