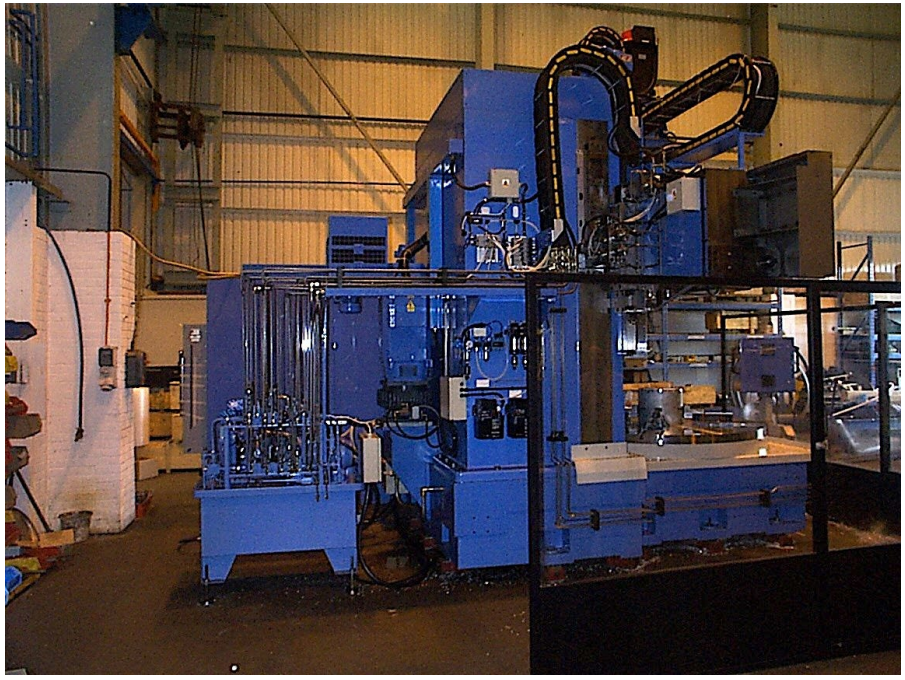
VTT-WB LTD



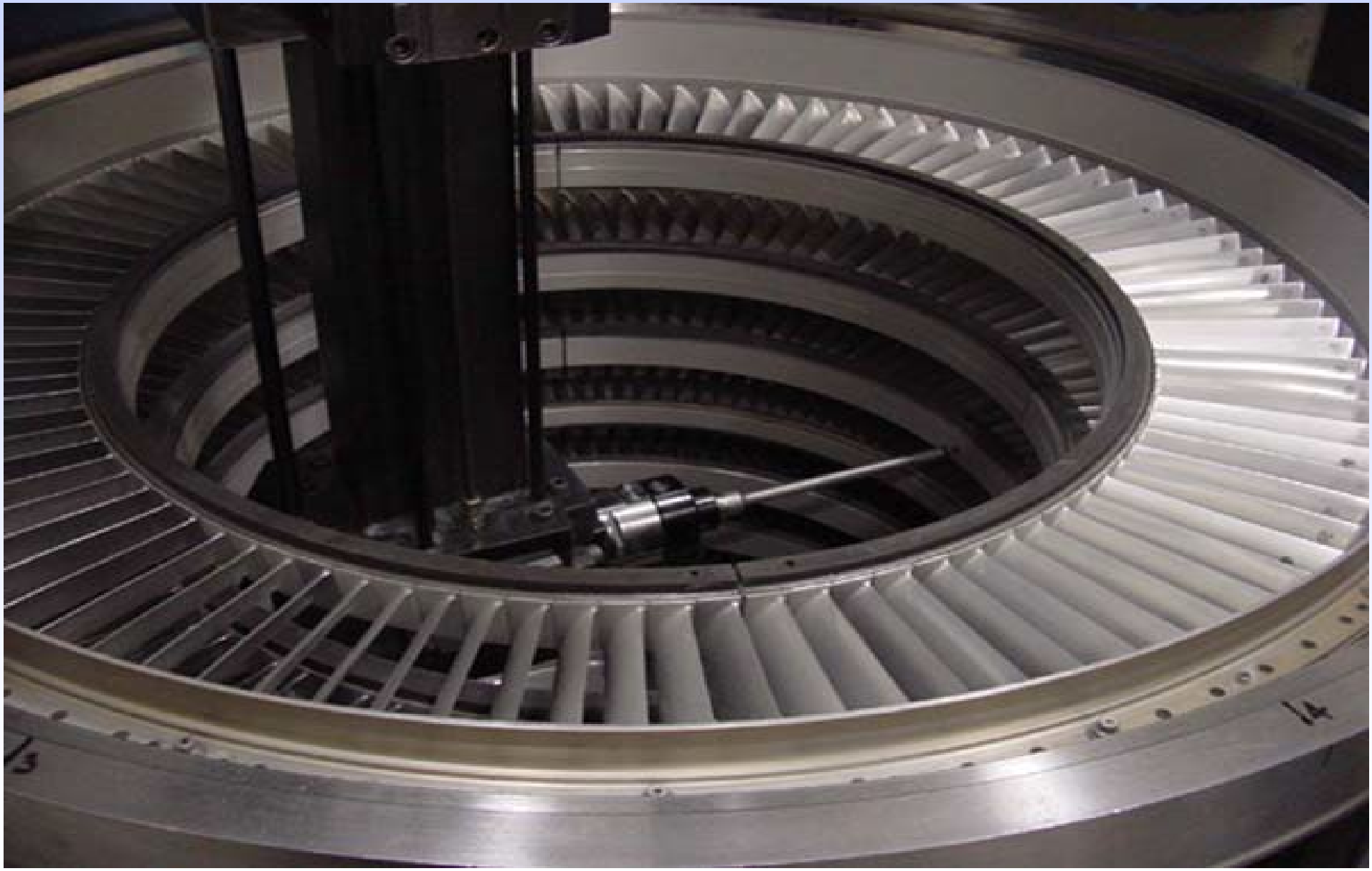
WEBSTER & BENNETT MILLENNIUM VERTICAL TURNING LATHES AND VERTICAL TURNING & MILLING CENTRES

Conceived, designed and built with innovative world leading features that won multiple orders from world leading companies in demanding industries - aero engine manufacture and repair, missiles, compressors, turbines, oil and gas, rail and submarine transmissions, locomotive turbo chargers, space rockets, military tank drives, Cranes, Medical body scanners, Crushers

components ranging from light cutting with super precision to heavy duty cutting with precision
Examples below from several of these industries. Also on film in our website

TURNING AERO ENGINE CASINGS (INTERNAL) – ACCURACY 7 µ

OPERATOR CAMERA TO CONTROL PROCESS



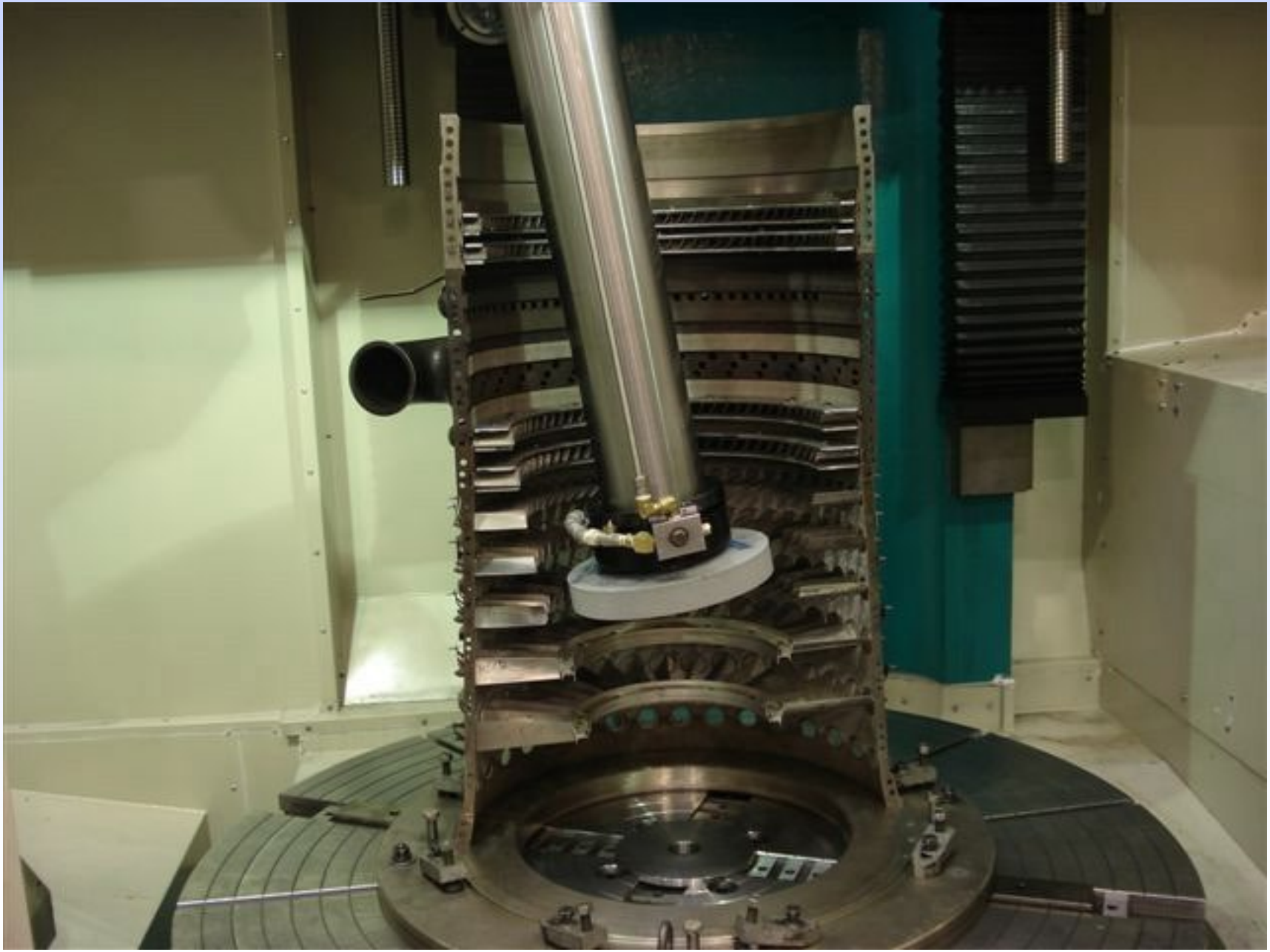
Special probing system for use before and after machining

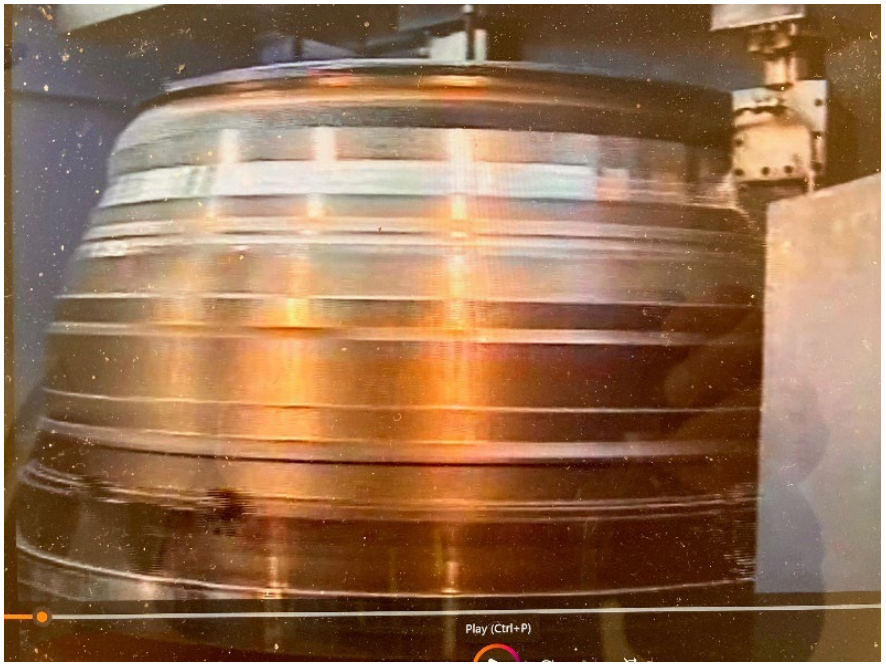
Grinding the nose of the largest commercial jet engine
800 l/min coolant through the table to the fixture to ensure dust free

1

2

An Aero Engine repair facility in Vancouver wanted to be able to grind the varying angles after the engine rings had been assembled together rather than grinding them individually. Because of the accuracy required the setting of the angle of the grinding ram had to be CNC controlled In addition they wanted a second ram for 2 axis turning operations. The photos above show the machine in assembly and test in our Warwick facility. The photo following shows the machine being tested





The Millennium was designed to do everything at the highest levels of accuracy and finish but when required to rip off material they are never found wanting. The component being rough turned is a Trent 800 forging. The photo on the right is taken from the Millennium film you can see on the web site home page. The chips are coming through so fast you would think they were being shovelled

The Millennium in this case is one of the lighter Series 3 models - 3E 175/210!

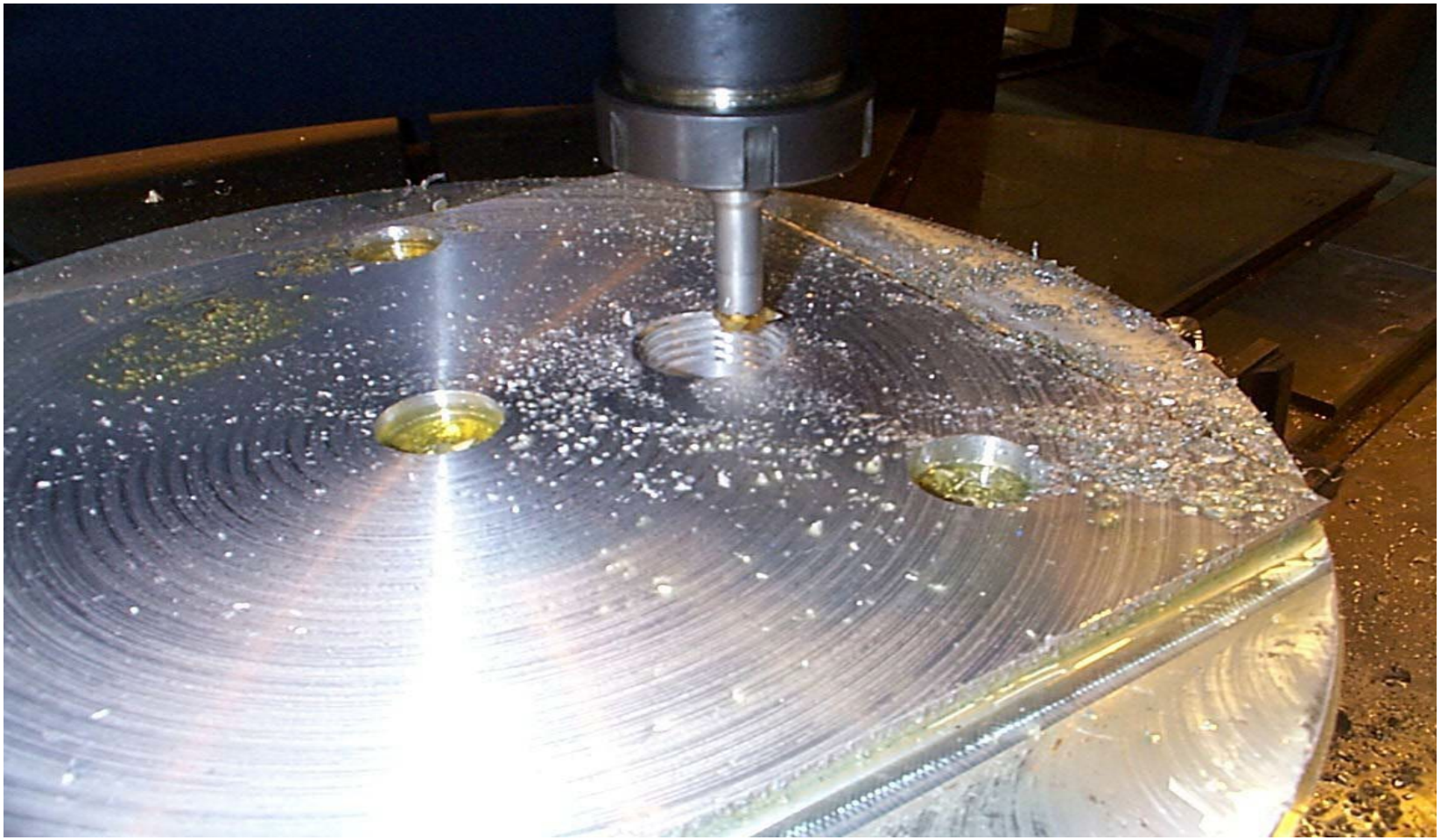
The flexibility of the Millennium machines is further demonstrated by the machine below making components in the Oil and Gas industry, from very small to huge! That Millennium became available when the oil industry went through very difficult times recently – it is now turning large cylinders in acrylic material!

Oil and Gas - machines are flexible enough to machine small components

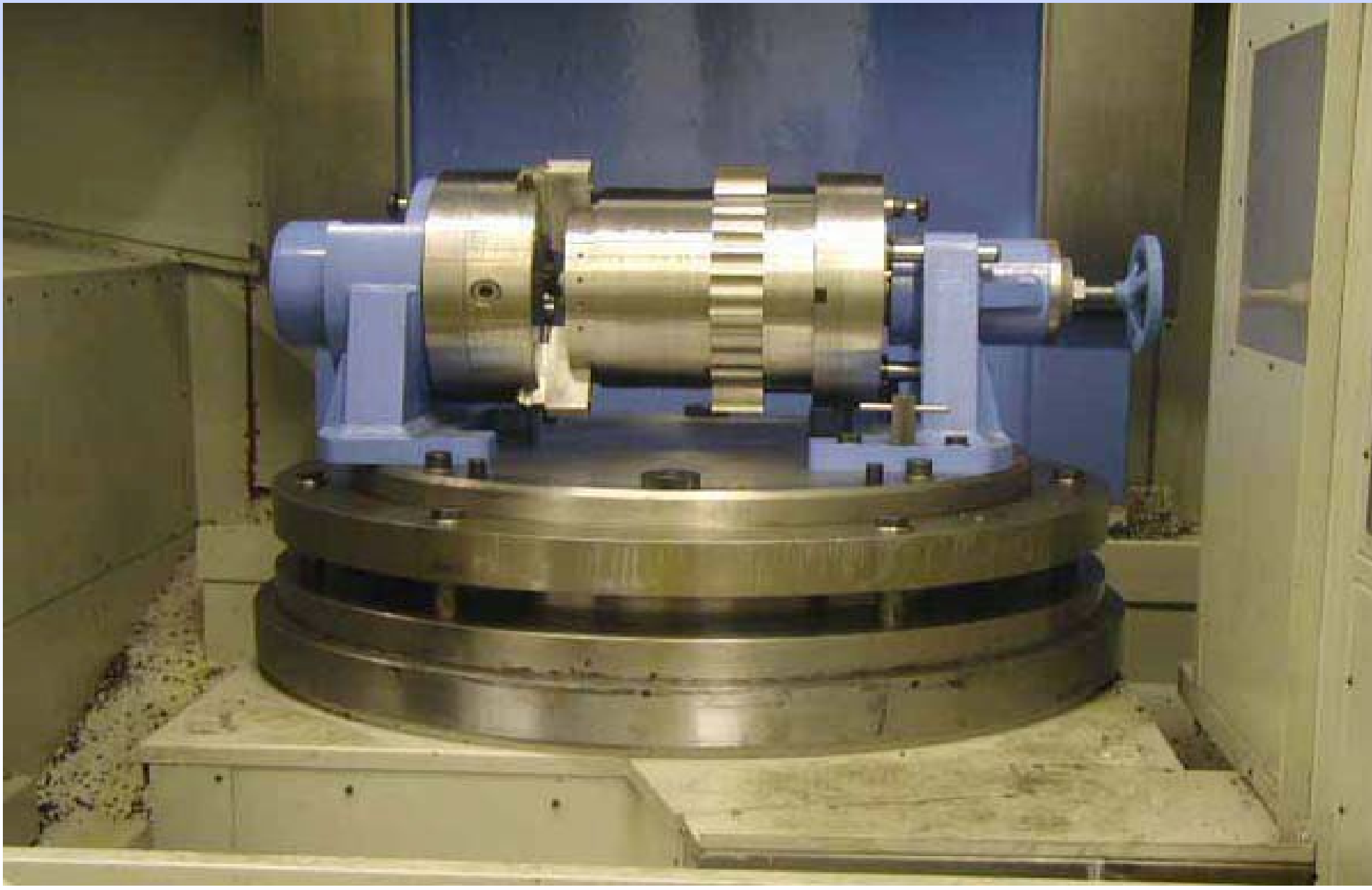
Same machine - large component

No need for to wait for and invest in large taps.

Off centre thread milling can be performed utilising all the axes



HIGH PRODUCTION with HIGH QUALITY. A really challenging task was set us by one of USA's major defence product manufacturers
Almost 30 machine tools were producing a major component for a military rocket. As the component moved from machine to machine, usually each with unbalanced production cycle times WIP was difficult to control and delivery programmes were difficult to maintain.
SOLUTION – produce the complete component on one machine with multiple set ups. The Webster & Bennett Millennium filled the bill with five.
EVEN BETTER – set up two machines in one relatively small production space and divide the process between the two machines reducing the time needed for setting up
Such was the component design that the milling process took up over 50% of the 39 hour production time. The solid forging is Rockwell 50 and a huge amount of material is machined off. The Millennium performed as required and produced the component complete. The photos show the machine in test in Warwick and the first one installed in America and two of the set ups




ady for Inspection!!!

THREE MORE SIGNIFICANT DEVELOPMENTS WERE

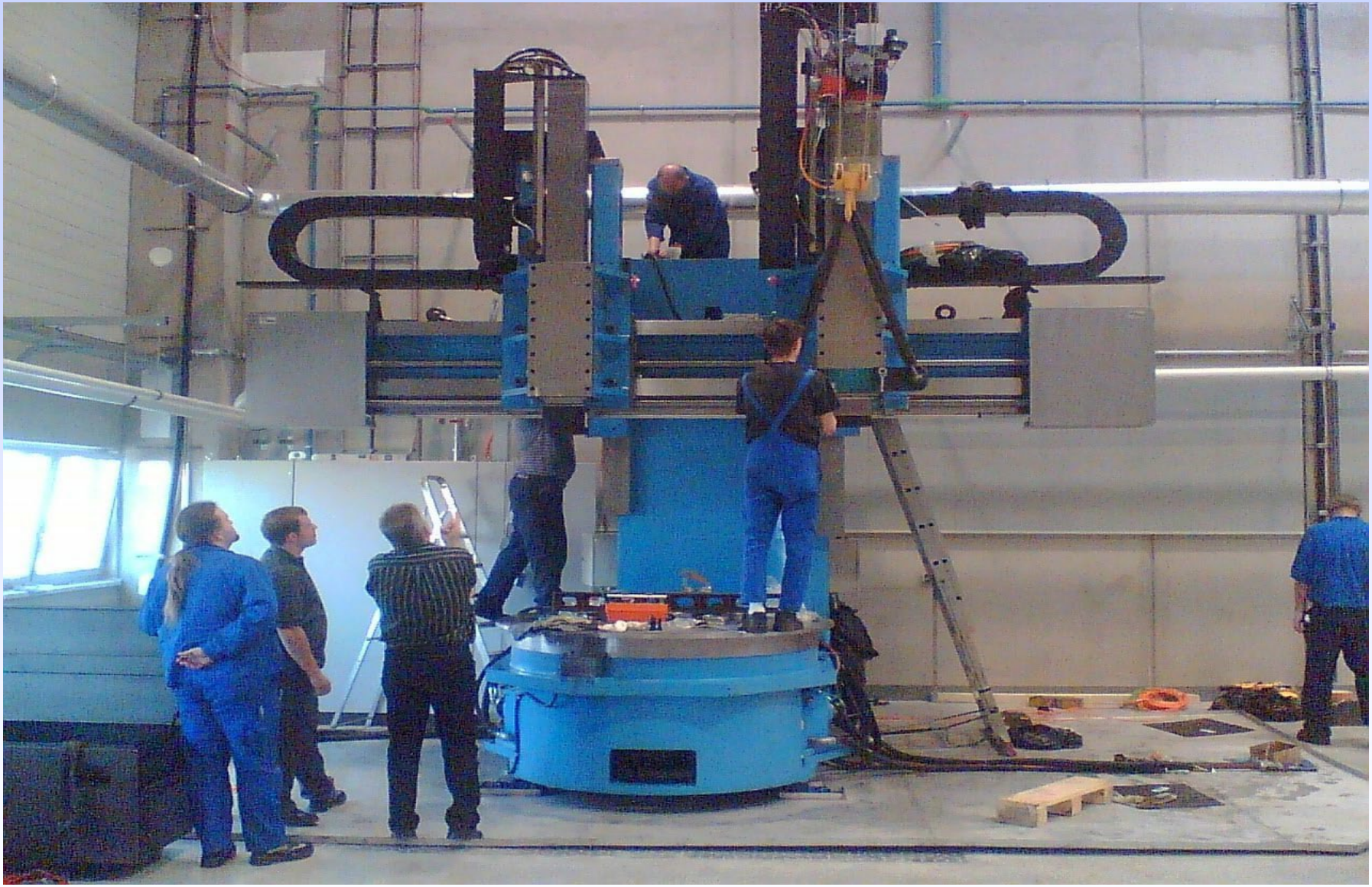
- A HEAVY DUTY RIGHT ANGLE MILLING ATTACHMENT WITH AUTO CLAMPING OF 50 Int TOOLING

- ROBOT TOOL LOADING ESPECIALLY WITH CAPTO C60 TOOLING

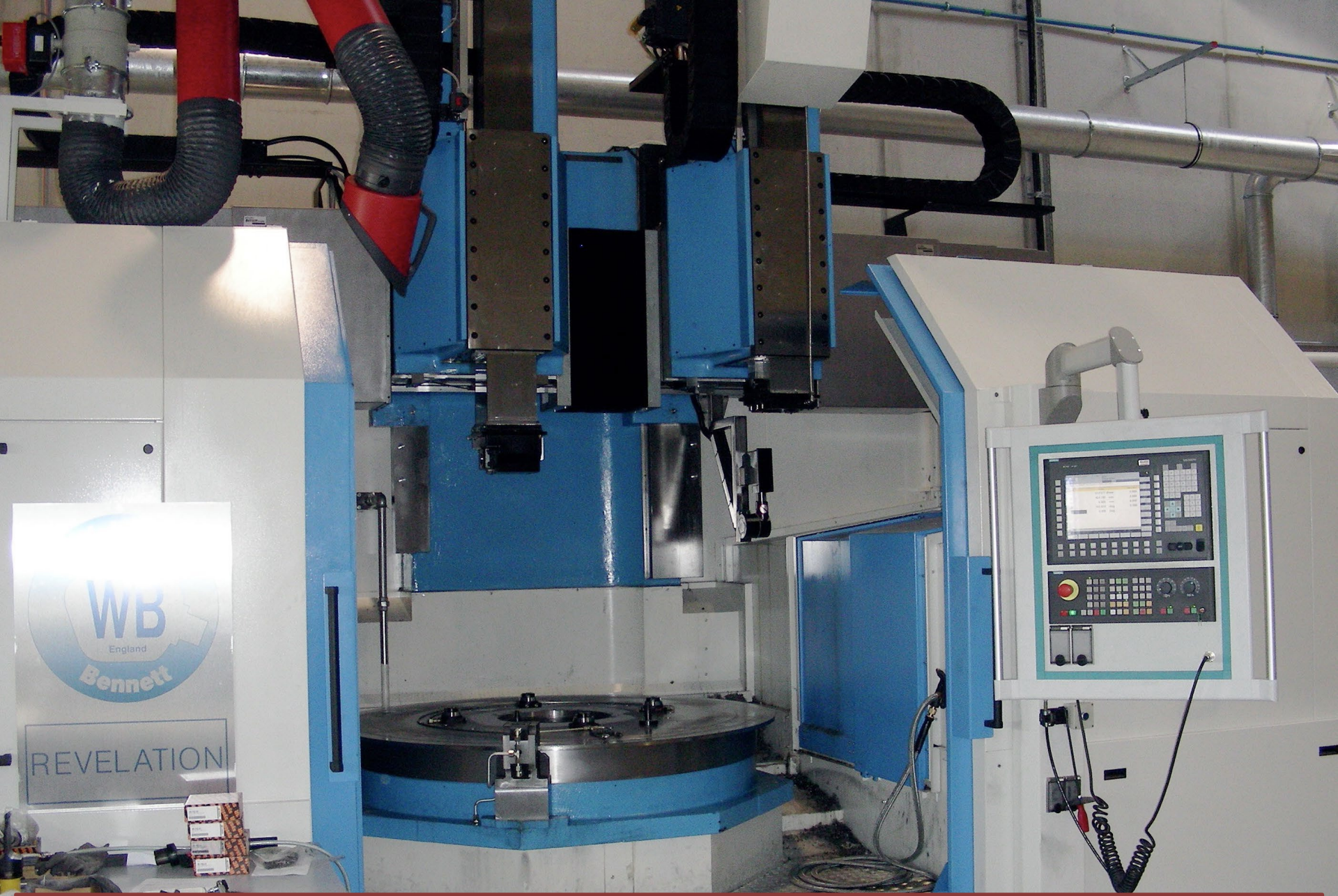
- TO ENABLE EASIER RECONDITIONING OF AN AERO ENGINE THAT WAS DELIBERATELY DESIGNED WITH ECCENTRIC RINGS WE DEVELOPED THE ECCENTRIC TURNING RAM AS SHOWN IN THE PHOTOS BELOW

THE FINAL PHOTO IS THE FIRST MILLENNIUM THAT WE WERE CONTRACTED TO REFURISH AND UPGRADE WHER POSSIBLE – VERY FEW CHANGES NEEDED

A VERY COMPLEX MACHINE IN A NEW FACILITY IN GERMANY



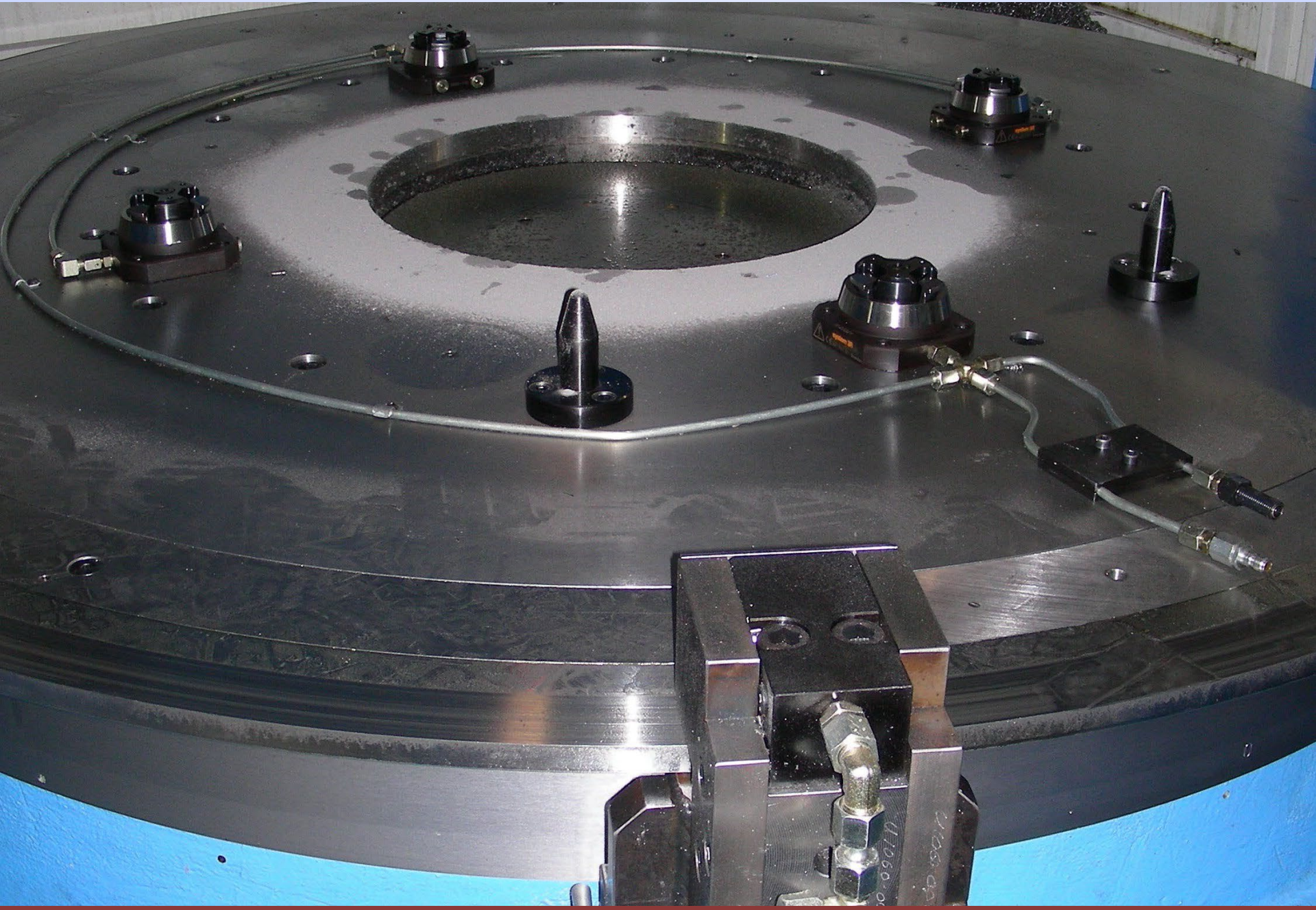
A TWIN RAM MACHINE, WITH ELLIPTICAL TURNING HEAD DURING INSTALLATION IN GERMANY



2 RAMS - THE LEFT ONE PROVIDES CONTROLLED ELLIPTICAL TURNING FACILITY. THE RIGHT ONE IS FOR TURNING AND MILLING - LOOK AT THE TOOL MAGAZINES (next 2 slides)

COMPACT ELLIPTICAL TURNING HEAD - AUTO CAPTO TOOL PICK UP

IF YOU ARE READING A POWERPOINT CLICK ON ME FOR ELLIPTICAL ACTION



PRECISION MANUAL PALLET SYSTEM FOR OFF MACHINE SET UP


Webster
WB
Bernett
1887
MILLENNIUM