VTT-WB LTD

for everything Webster & Bennett

For everything – vertical turning

Webster & Bennett blood runs through our veins

and much blood has been spilt recovering from the disastrous corporate decisions of 1981 that brought Webster & Bennett to its knees through to the successes at the end of the old and in this new millennium. Fittingly the first new model was called The Millennium, a brilliant success

Chapter 1

1982 - 1992

From losses to profit and then disaster for a world renowned Coventry company.

In 1981 the British machine tool industry was decimated by political decisions.

Webster & Bennett suffered badly when its large foundry and factory property in Coventry city centre was sold for housing development.

Another Coventry machine tool builder to lose their property for housing development was Alfred Herbert Ltd. A few years earlier Alfred Herbert was the largest machine tool builder in the world. In a short time it was reduced to almost nothing. The UK is really good at giving away world renowned companies

Webster & Bennett was transferred into a group sister company, Wickman, 43 acres in Banner Lane next to Massey Ferguson. The Webster & Bennett workforce was reduced from 1400 to 150

The company names were combined to form Wickman Bennett Limited

Webster & Bennett was the poor relation in the combined company and with no sales or production synergy during the next 8 years sales reduced almost to zero and the workforce to less than 20 in 1989.

Wickman Bennett had lost focus on its world leading products to concentrate on very high tech CNC lathes. These were wonderful sophisticated machines but costs were way in excess of sale price. The development costs and the production losses and lack of sale potential lead to a period of high annual losses.

In October 1989 Exeter purchased 50% of the shares of Wickman Bennett and carried out a major re-organisation to increase efficiency in all areas but the initial concentration had to be on the much larger Wickman operation and to bring focus back to their world leading multi spindle automatics. During the period of re-organisation through to December 1991 sales exceeded £40,000,000 with a net profit of exceeding 10%

Entering 1992 the order book and orders in final negotiation was nearly £100,000,000. 85% was for delivery to Iran. Because of the "machine tools for Iraq" fiasco the UK Government Department for Trade and Industry was afraid to issue export licenses.

8 months of illegal delay before the licenses were granted created major cash flow problems for Wickman Bennett and the banks called in a small, £2m, overdraft and put the company into administration.

UK presses ‘self destruct’ button on the UK machine tool industry

Wickman was the major UK machine tool builder destroyed by government ineptitude and ministerial lies following the ‘machine tools for Iraq fiasco’ but it killed the UK machine tool industry as a world force.

Matrix Churchill were pursued all the way to the Old Bailey, facing jail sentences before the Minister admitted the truth.
After this admission it was allowed to be announced that the Matrix Churchill MD at risk of jail had been working for MI5, for Britain!

The story of this fiasco and the subsequent Scott report illustrate the wonderful British attitude to accept blame when they should not.

With the inability of Wickman to deliver the Iranian orders they were fulfilled mainly by German companies. It emerged in the Scott report that UK customs had invaded the UK machine tool companies at the suggestion of German customs - surprise, surprise.

Germany knows how to look after its own interests! UK sells its great companies to foreign ownership and then buys back the products or services. Our governments should be the board of directors of UK Limited. Instead they are asset strippers.

It still hurts to remember what was lost when Wickman Bennett was destroyed

WORLD WIDE COVERAGE

GREAT BRITAIN AND IRELAND

WICKMAN MACHINE TOOL SALES LTD., P.O. Box 44, TILE HILL, COVENTRY, CV4 9GE, ENGLAND *Telephone:* Coventry 465231

AREA SALES OFFICES

BIRMINGHAM	Somerset House, Temple Street, Birmingham 2	Midland 4101
BRISTOL	28 Baldwin Street, Bristol 1	Bristol 22747
CARDIFF	"Chez Regis", Pentwyn, Treharris, Glamorgan	Treharris 482
COVENTRY	Banner Lane, Tile Hill, Coventry	Coventry 465231
GLASGOW	98 West George Street, Glasgow C2	Douglas 4176
LEEDS	Lloyds Bank Chambers, Vicar Lane, Leeds 1	Leeds 20194
LONDON	17 Stratton Street, Mayfair, London W.1	Grosvenor 6777
MANCHESTER	Century House, St. Peter's Square, Manchester 2	Central 3612
NEWCASTLE	26 Woodvale Gardens, Wylam, Northumberland	Wylam 2307
NOTTINGHAM	36 Market Street, Nottingham	Nottingham 44561
IRELAND	John Rainey & Son Ltd., 48 Elmwood Avenue, Belfast 9	Belfast 667941

AUSTRALIA

Victoria	Wickman (Aust.) Pty. Ltd., P.O. Box 50, Collingwood, Victoria
New South Wales	Wickman (Aust.) Pty. Ltd., Five Dock, P.O. Box 32, New South Wales
South Australia	Wickman (Aust.) Pty. Ltd., P.O. Box 6, Prospect, South Australia
Queensland	Wickman (Aust.) Pty. Ltd., P.O. Box 37, Newstead, Queensland

SOUTH AFRICA

Johannesburg	Drury Wickman Ltd., P.O. Box 3929, Corner of Booysens Road and Trump Street, Selby, Johannesburg

CENTRAL AFRICA

Malawi	Drury Wickman (Blantyre) Ltd., P.O. Box 332, Blantyre
Zambia	Drury Wickman (Central Africa) Ltd., c/o Railway Ind. & Mining Supplies (Zambia) Ltd., Cardiff Road Industria, P.O. Box 482, Kitwe

CANADA

Toronto	A. C. Wickman Ltd., 1425 The Queensway, Toronto 18
Montreal	A. C. Wickman Ltd., Grand Terminal Building, Room 280, 7800 Cote de Liesse Road, Montreal 9, Quebec
Hamilton	A. C. Wickman Ltd., 605 James Street North, Hamilton, Ontario
Windsor	A. C. Wickman Ltd., Room 406, Canada Building, Windsor, Ontario
Vancouver	A. C. Wickman Ltd., 193 East Hastings Street, Vancouver

INDIA

Calcutta	Machine Tools (India) Private Ltd., P.O. Box 585, Wimet House, Russell Street, Calcutta 16
Bombay	Machine Tools (India) Private Ltd., P.O. Box 522, Imperial Chambers, Wilson Road, Ballard Estate, Bombay 1
Bangalore	Machine Tools (India) Private Ltd., P.O. Box 697, 41 Silver Jubilee Park Road, Bangalore 2, Mysore
Madras	Mr. R. C. Trimbee, Resident Engineer, Machine Tools (India) Private Ltd., 13 Wallace Gardens, Madras 6

PAKISTAN

Karachi	Machine Tools (Pakistan) Ltd., P.O. Box 5014, Nadir House, McLeod Road, Karachi 2

REST OF THE WORLD

WICKMAN MACHINE TOOLS (OVERSEAS) LTD., P.O. Box 44, TILE HILL, COVENTRY, CV4 9GE, ENGLAND *Telephone:* Coventry 465231 *Telegrams:* Wickman Coventry *Telex:* 31618

With Sub-Agents in

EUROPE

Austria	Maschinen-Und Werkzeughandelsgesellschaft MBH. und Co. K.G., VI Lehargasse 13/14, 1060 Vienna
Belgium and Luxembourg	R. S. Stokvis & Fils S.A., 17 Rue Brederode, Brussels 1
Denmark	C. A. Herstad Ltd., Gutenberghus, Vogmagergade 7, Copenhagen K.
Finland	Oy. Mercantile A.B., P.O. Box 10029, Helsinki 10
France	R. S. Stokvis et Fils, S.A. 20-22 Rue des Petits Hotels, Paris 10e
West Germany	Mr. R. W. Schuster, 6078 Neu-Isenburg, Friedrichstrasse 112
Greece	G. Maltsiniotis & Cie S.A., Skoufa 15, Athens 136
Holland	Oude Reimer N.V. Soestdijkerstraatweg 95, Hilversum
Italy	Compagnia Generale Macchine Utensili S.p.A., Via Guiseppe Parini 14, 1-20121-Milano
Norway	Chr. Munthe A/S, Kirkegt 9, Oslo 1
Portugal	Globo Sociedade de Equipamentos Industrias Lda, Rua Sa Da Bandeila 478, Porto
Spain	Maquinaria Gumuzio S.A., Apartado 920, Alameda de Urquijo 98, Bilbao
Sweden	Bergman Maskin AB., Svetsarvagen 20, Fack, Solnal 1, Stockholm
Switzerland	Josef Binkert, Thurgaerstrasse 23, 8050 Zurich
Yugoslavia	Progres International Trade & General Agencies, P.O. Box 527, Beograd, Mihajlova

U.S.A.

Head Office	Wickman Machine Tools (Overseas) Ltd., 950 Morse Avenue, Elk Grove, Illinois 60007, U.S.A.
Detroit, Michigan	Production Machinery Sales, 4845 St. Aubin Avenue at East Warren, Detroit
Bedford, Ohio	T. R. Wigglesworth Machinery Distributors Inc., Route 8 at Alexander Road, Walton Hills, Bedford, Ohio 44014
Pittsburg, Pennsylvania	Ra-Dril Machinery Inc., P.O. Box 9666, 535 McNeilly Road, Pittsburg Pa. 15226
St. Louis, Missouri	Nuetzel Machinery Co. Inc., 11746 Administration Drive, St. Louis, Missouri 63141
Los Angeles, California	Machinery Sales Co., 2838 Leonis Boulevard, Los Angeles, California 90058
San Mateo, California	Machinery Sales Co., P.O. Box 1338, 2 South Bayshore Boulevard, San Mateo, California 94401
Wichita, Kansas	Kansas-Oklahoma Machine Tool Corp., P.O. Box 11263, 2234 South Mead, Wichita, Kansas 67202
Tulsa, Oklahoma	Kansas-Oklahoma Machine Tool Corp., 3216 East-21st, Tulsa, Oklahoma 74114
Moorestown, New Jersey	Fidelity Machine Tool Inc., Industrial Center, Route 73 and Church Road, Moorestown, New Jersey 08057
East Rutherford, New Jersey	Triplex Machine Tool Corp., 450 Paterson Plank Road, East Rutherford, New Jersey 07073
Buffalo, New York	G. W. Brunton & Son Inc., 1913 Sheridan Drive, Buffalo, New York 14223
Minneapolis, Minnesota	Minnesota Industrial Tools, 905 North Fifth Street, Minneapolis, Minnesota 55601
East Boston, Massachusetts	Wigglesworth Machinery Company (Machine Tools), 60 Border Street, P.O. Box 166, East Boston 28 Massachusetts
Atlanta, Georgia	D. G. Machinery & Gage Company, 2828 Northeast Freeway, P.O. Box 13135 Station K, Atlanta, Georgia 30324
Houston, Texas	Tools Inc., P.O. Box 16159, 4109 Fulton Street, Houston, Texas 77022
Rockford, Illinois	Behr Machinery & Equip. Corp., 501 Eighteenth Avenue, Rockford, Illinois 61108

CENTRAL AMERICA

Mexico	Casa Nixon S.A., Priv. del Castillo 14-3, Mexico 10 D.F.

SOUTH AMERICA

Argentine	Vallejos-Boidi S.A.I.C. Cassilla de Correo No. 30, Sucursal Lanus (Bs As)
Brazil	Industrias Romi S.A., Caixa Postal 168, Santa Barbara d'Oeste, Sao Paulo

OTHER COUNTRIES

China	Arnhold Trading Co. Ltd., 508 Gloucester Building, 5th Floor, Des Voeux Road, Hong Kong
(London Office)	The Arnhold Trading Co. Ltd., Creechurch House, 37-45 Creechurch Lane, London EC3
Colombia	Representaciones Y Promociones Industriales Ltda, Carrera 12, No. 16-73, Apartado Aero 5660, Bogota D.E.
Egypt	The Industrial Planning Technical Office, P.O. Box 1774, Cairo
Israel	Josef Rosenthaler Ltd., P.O. Box 791, New Business Centre, 17 Ne'emanim Street, Haifa
Japan	Yamamoto & Co. Ltd., 7 Yoyogi 5-chome, Shibuya-Ku, Tokyo
New Zealand	Gilbert Lodge & Co. Ltd., P.O. Box 12-063, 55 Station Road, Penrose, Auckland S.E.6
Nigeria	Nigerian Tool & Die Co Ltd., P.O. Box 136, Ebute Metta, Lagos, Nigeria
Singapore	William Jacks & Co. (Singapore) Ltd., P.O. Box 197, Ocean Building, Prince Street, Singapore
Uruguay	Jose Perez Y Perez, Ituzaingo 1462, Montevideo

Wickman Bennett - MONTHLY PRODUCTION

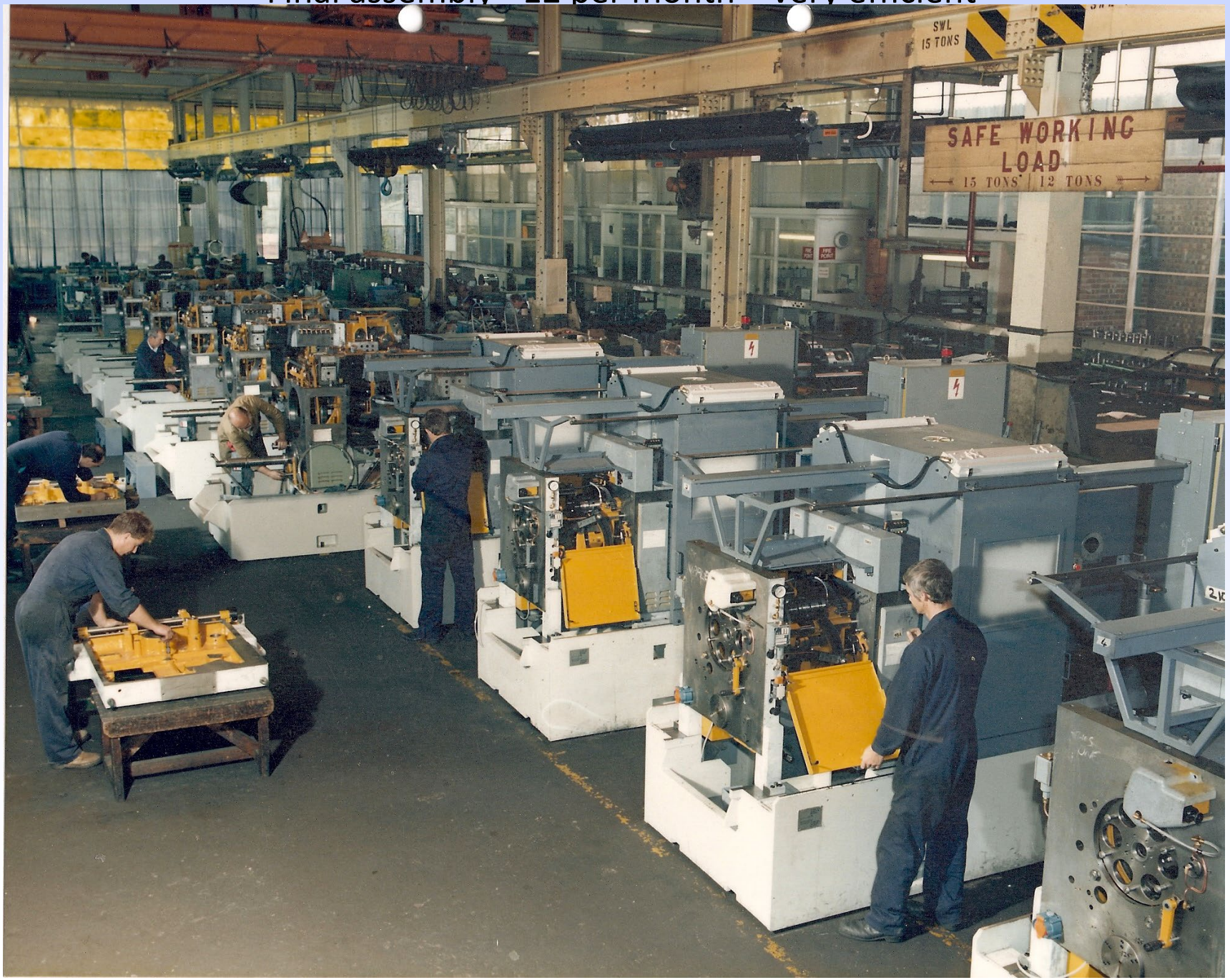
most components produced in house

48,000 COMPONENTS PRODUCED FOR THE ASSEMBLY OF 12 MULTI SPINDLE AUTOMATICS

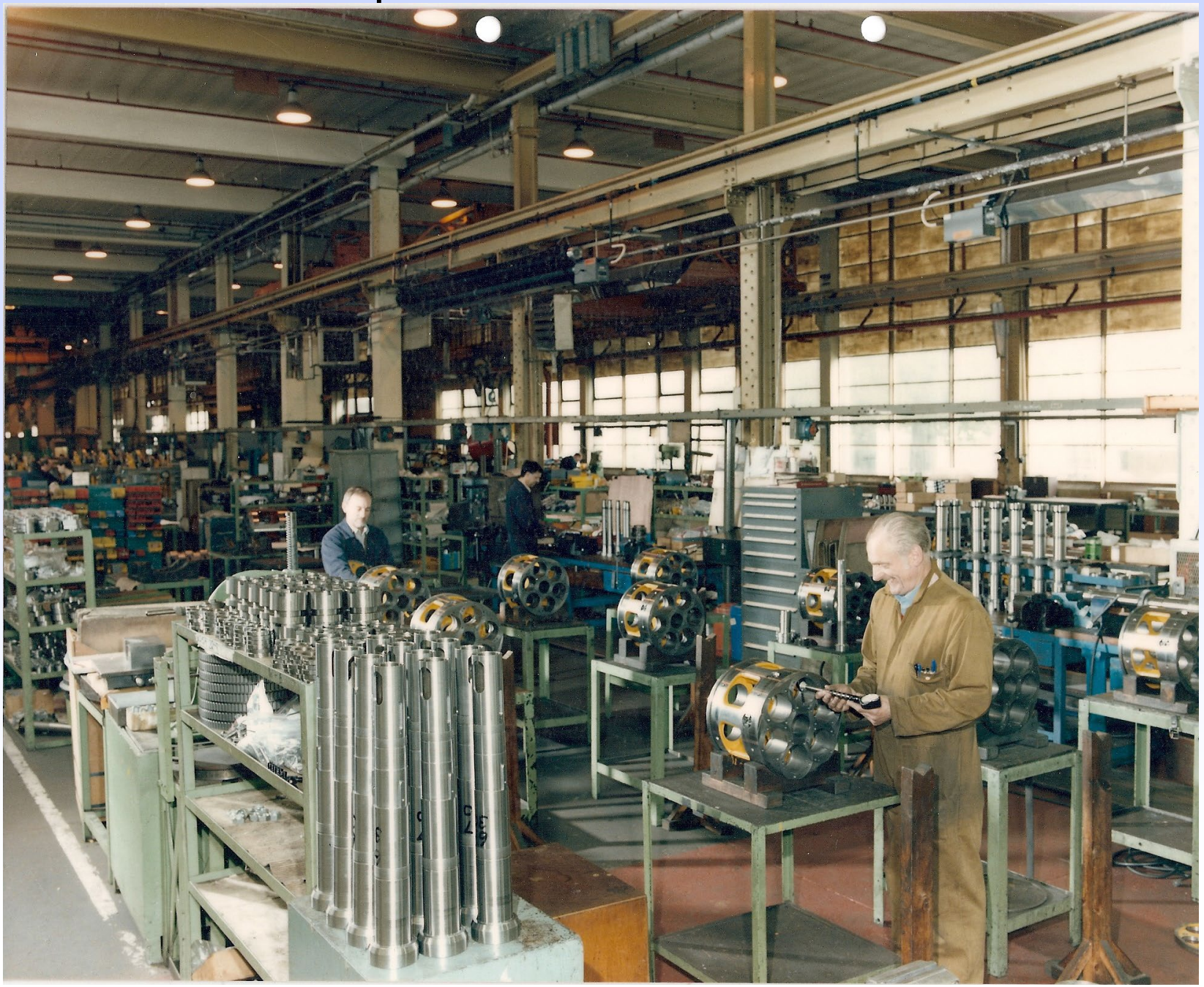
5,000 COMPONENTS PRODUCED FOR THE ASSEMBLY OF 5 CNC LATHES (this product range was planned for removal to Iran)

600 COMPONENTS PRODUCED FOR THE ASSEMBLY OF 2 VERTICAL LATHES

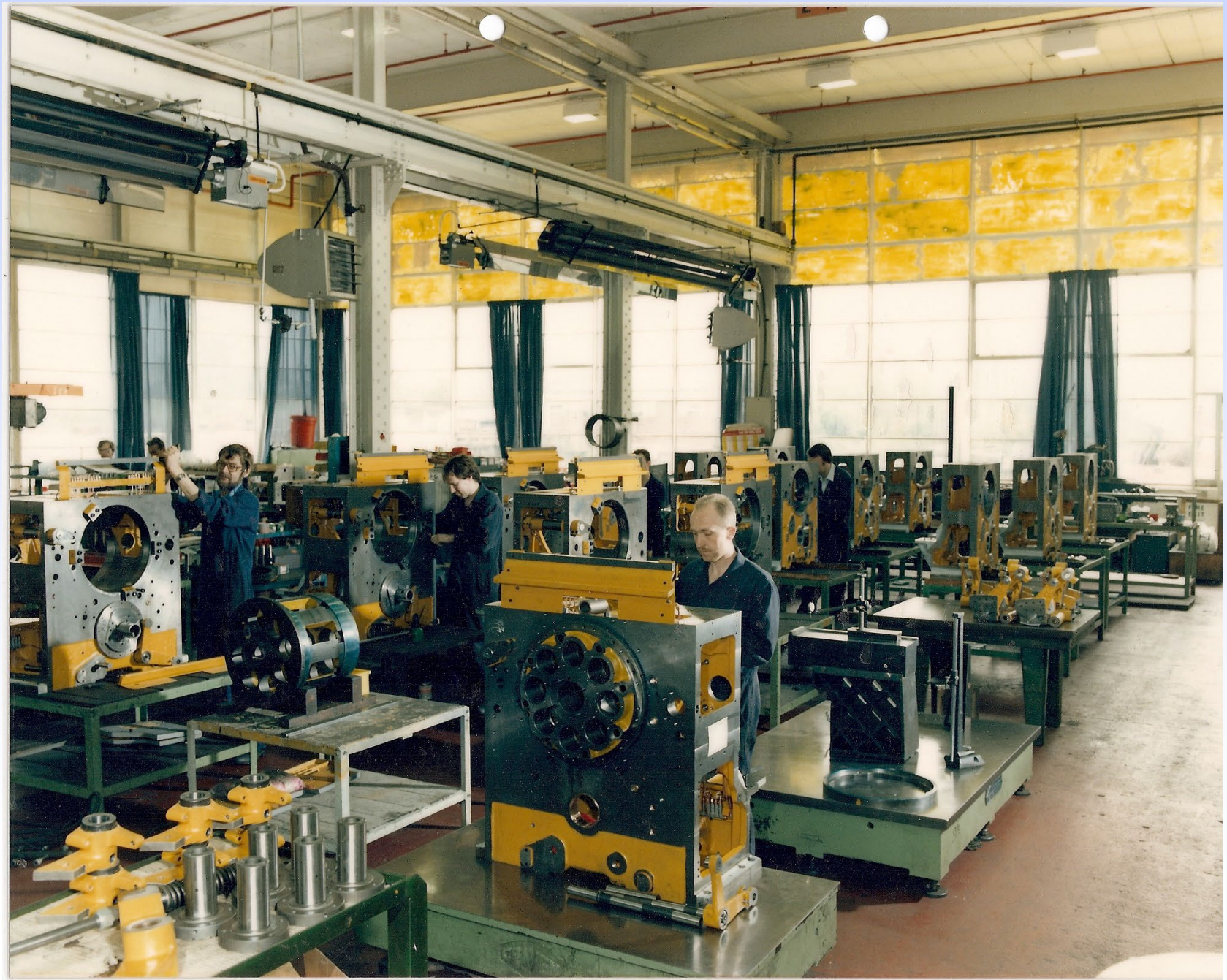
Final assembly - 12 per month – very efficient



6 and 8 spindle drums in batches of 12



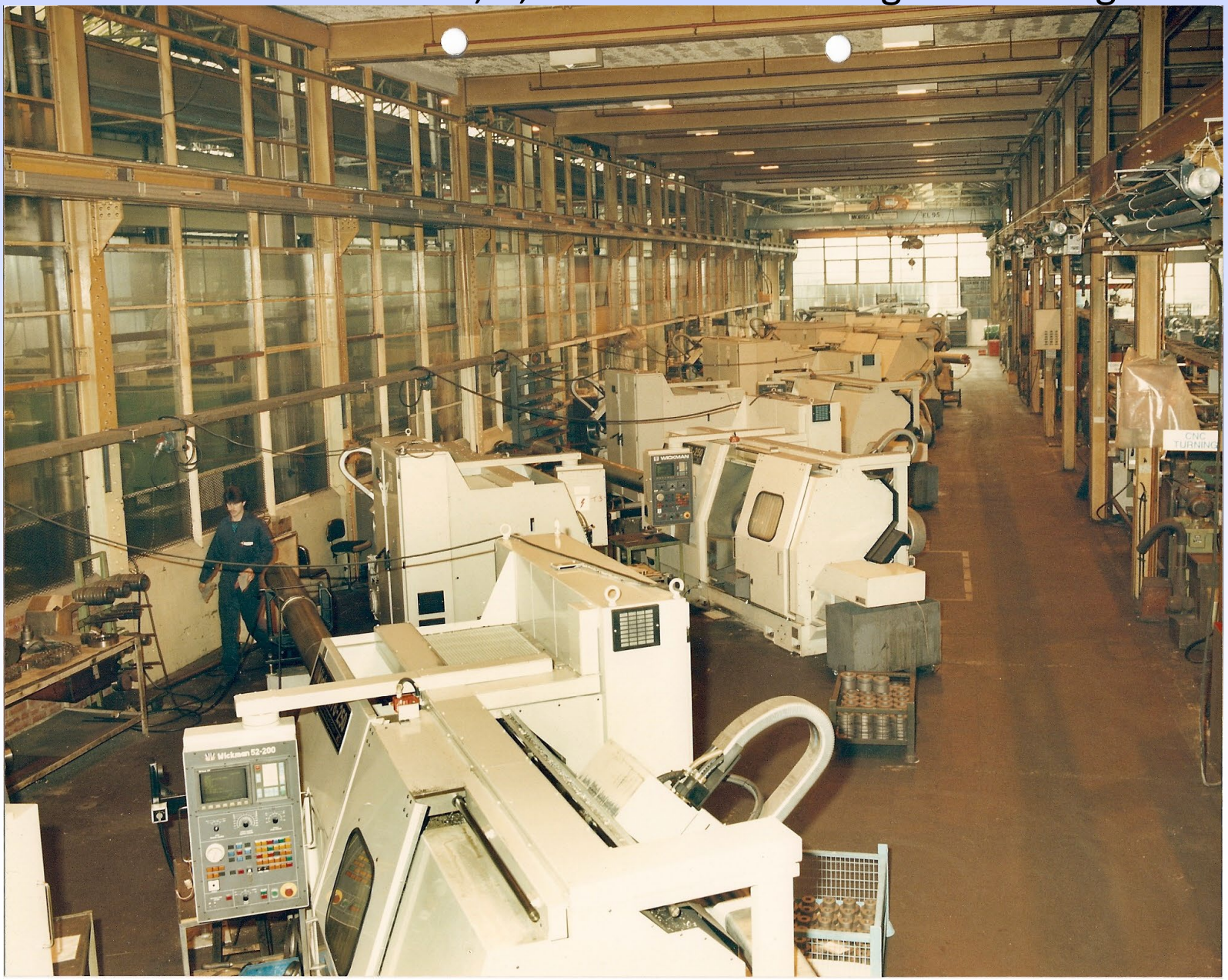
Drum housing assembly



Centre block drives in batches of 12



Thousands of complex and simple turned parts produced every month on Wickman Bennett CNC 2, 4, 5 and 7 axis turning and milling centres



Several Makino MC1210 HMC's machining large castings



Toshiba Shibaura HMC's



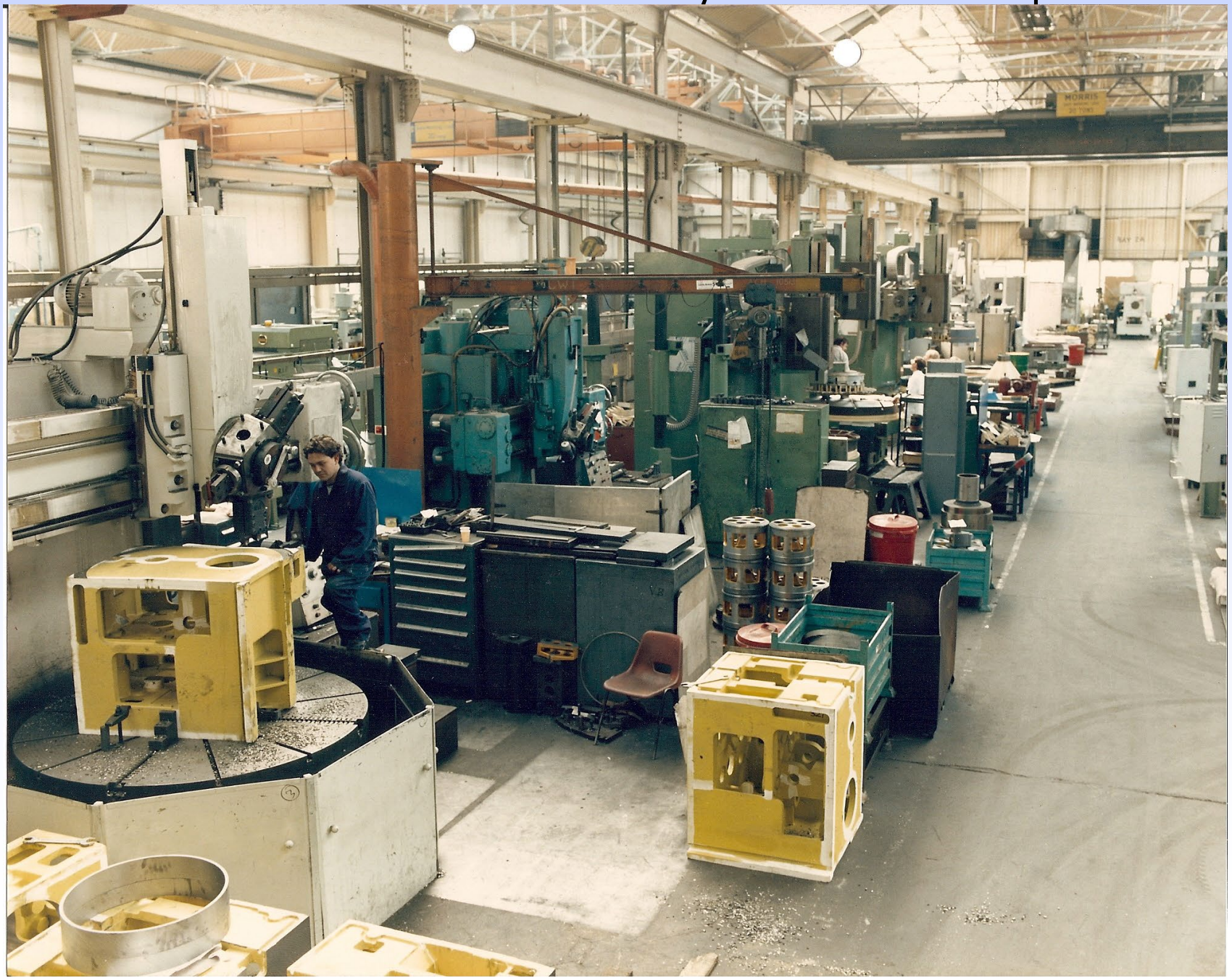
52-200 and 76-250 CNC lathe assembly



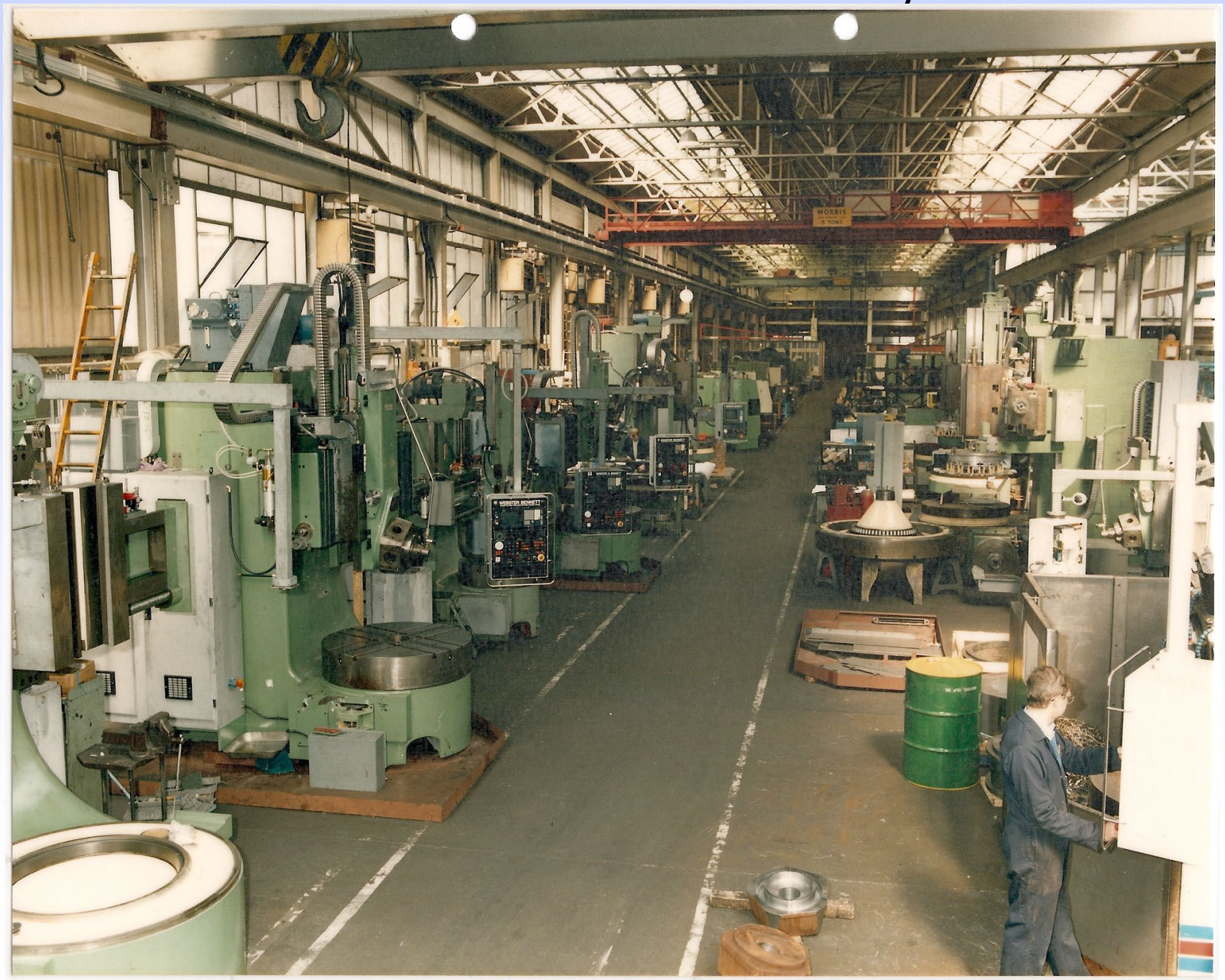
KIS 26-130 CNC frontal turning lathes



Webster & Bennett VTL's – in assembly and also used in production

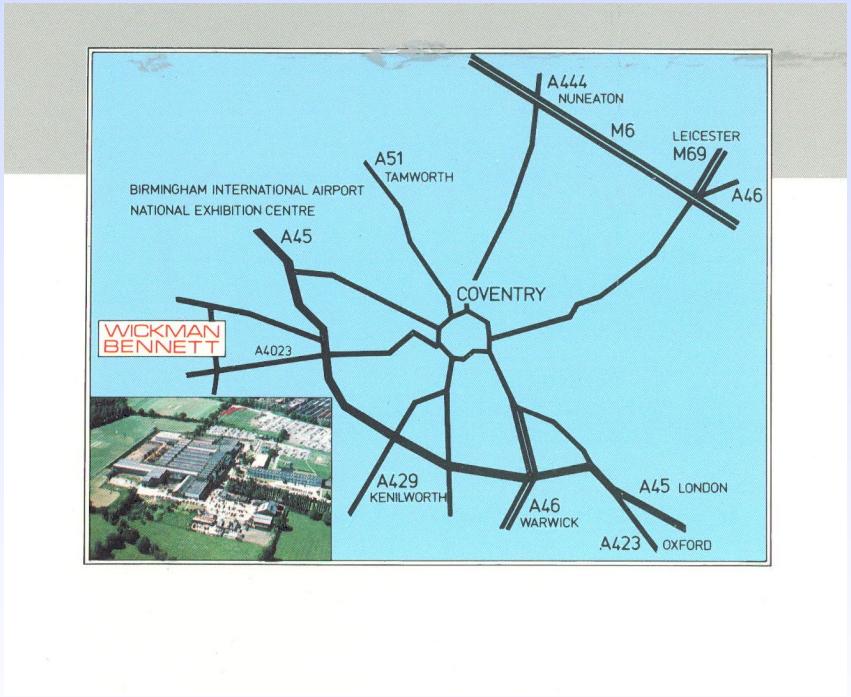


Webster & Bennett VTL's – in assembly and test



Coventry helps destroy another world class company for land development

Exeter had purchased Wickman Bennett in October 1989. The vendors owned the land and would only sell a 20 year lease with the company as they hoped that long term they could profit from the land development. During the difficult period in 1992 it would have been possible to save the company by moving out to smaller premises if the land owners could get permission to go ahead earlier with the site development. Wickman approached the council to see if early development was possible and was told that the 'Coventry Plan' maintained Banner Lane as an industrial location 'forever'. Forever was not very long as only a few years after Wickman was liquidated development started. It was clear that the Coventry Plan was fiction and false information had been given by Coventry council and they had played their part in the destruction of another of the worlds most famous machine tool companies



Chapter 2

1992 - 2002

Back to world class level with success but also with unexpected problems



For nearly 100 years Webster & Bennett was the world's best known specialist builder of vertical turning lathes. By 1980 more than 10,000 machines between 1000mm and 3500mm diameter had been sold all over the world.

A new beginning for Webster & Bennett

When you look at the Webster & Bennett installation history it is easy to understand Exeter's obsession to restore its premier position

Exeter lost his capital in the demise of Wickman but his obsession with machine tools became fixed totally on rescuing Webster & Bennett. Despite starting 1993 with an acute shortage of capital Webster & Bennett recovered its position with an expanded service and machine rebuild program. Exeter, aided by Muller Machines, Switzerland's premier machine tool trader, managed to fund the design program for the **Millennium,** a major advance in vertical lathe and turning centre design.

The first new W&B design was to have spectacular success

Rebuild and service operations aid recovery

Webster & Bennett Limited

MACHINE TOOL MANUFACTURERS IN COVENTRY FOR MORE THAN 100 YEARS

DUTTON ROAD, COVENTRY ENGLAND CV2 2LE Phone (0203) 603360 Fax 602905

NEWS BULLETIN

June 1994



The Assembly Area for New and Remanufactured machines

WEBSTER & BENNETT build the NEW T1200 and T1800 FLEXIDRIVE range of Vertical Turning, Milling and Boring machines.

WEBSTER & BENNETT rebuild and remanufacture Webster & Bennett machines and CNC retrofit where applicable.

WEBSTER & BENNETT provide the best product to suit your budget.

NEWS FLASH

Webster & Bennett are delighted to announce the sale of the first of the new T1200 Flexidrive models to a major International group - users of Webster & Bennett Vertical Turning Lathes for many years.

WEBSTER & BENNETT SALES SUCCESS

Since the acquisition of Webster & Bennett by the S.A. Muller Machine Group of Bienne, Switzerland, substantial sales success has been achieved in the U.K., FRANCE, SWITZERLAND, IRELAND, SCOTLAND, AUSTRALIA and U.S.A.and has encouraged the investment in the new T1200 and T1800 CNC Flexidrive range.

CONVENTIONAL MACHINES - still sold worldwide

Reconditioned, fully guaranteed Webster & Bennett machines have recently been ordered for Aero Engine work by world famous companies from opposite sides of the world. Such machines are regularly available from our stocks.



WEBSTER & BENNETT SALES REPRESENTATIVE IN SOUTH AFRICA

We are pleased to announce the appointment of Michael Shepherd as Sales Representative in Africa for Webster & Bennett Limited and Muller-Exeter.

Age 40, married with a young son, he moved from the U.K. to South Africa in 1992. Although his business experience has been in banking and property he is very enthusiastic about his new position having an understanding, now, of the importance of the manufacturing industry to a country's wealth - creation capability. *See page 8 for details.*

MORE THAN 100 YEARS IN COVENTRY - centre for engineering excellence

A NEW HOME

FOR THE FIRST TIME IN 13 YEARS WEBSTER & BENNETT HAS ITS OWN HOME.

In 1981 Webster & Bennett were moved into the Wickman factory and its unique identity was almost lost.

S.A. Muller Machines of Bienne, Switzerland, acquired the Webster & Bennett business from Wickman in December 1992 and their belief in the company and its products was demonstrated in December 1993 when they provided the funding for Webster & Bennett to acquire their new factory.



NEW MACHINE RANGE - the "FLEXIDRIVE" MODELS.

CHUCK SIZES - 900mm, 1200mm, 1500mm, 1800mm, 2000mm
Higher Speeds - Faster Traverses - Low Noise - Operator Friendly
Turret machines, Ram machines with ATC, Driven tooling options, & optional C axis to chuck for milling. *Send for full information.*

NEW MACHINES - NEW BENEFITS - UNBELIEVABLE VALUE

REBUILD, REMANUFACTURE, RETROFIT OPTIONS
Send for our brochure

SPARE PARTS • SERVICE • PREVENTIVE MAINTENANCE CONTRACTS

With a 100 year history and more than 10,000 machines delivered WEBSTER and BENNETT takes its responsibility for SUPPORT SERVICES very seriously. To assist us we have :-

- HISTORY RECORDS for all machines to ensure the right part is ordered.
- ORIGINAL & UPDATED DRAWINGS for all components to ensure that they are made to correct tolerances and correct material specification.
- MANUFACTURERS TOTAL RESOURCES to support SERVICE ENGINEERS for cost effective fast machine service, preventive maintenance and breakdown service.
- SAFETY UPGRADES TO CURRENT STANDARDS - standard upgrades at low cost.
- PRODUCTIVITY UPGRADES - new techniques can increase the efficiency of older machines e.g. V track machines can, at very low cost, be brought up to high speed and heavy work loading capability.

For details of these Products and Services contact -

WEBSTER & BENNETT LIMITED
DUTTON ROAD,
ALDERMANS GREEN INDUSTRIAL ESTATE,
COVENTRY, ENGLAND CV2 2LE

Sales Phone : 0203 603360
Sales Fax : 0203 602905
Spares Phone : 0203 604401
Spares Fax : 0203 603660

MULLER-EXETER
DUTTON ROAD,
ALDERMANS GREEN INDUSTRIAL ESTATE,
COVENTRY, ENGLAND CV2 2LE

Sales Phone : 0203 603360
Sales Fax : 0203 602905

The **Millennium** was a major advance in vertical lathe and turning centre design.

The first machine was shown at Mach96 winning the acclaim and orders from major companies in the UK and abroad because of its advanced technical features and high precision performance

Venture capitalists invested to enable production of the Millennium to meet the rapidly growing order book

Webster & Bennett

MILLENNIUM

Vertical Turning Machines

&

Vertical Turning & Machining Centres



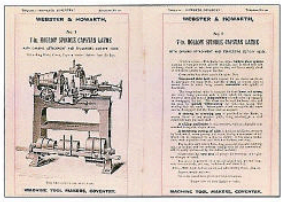
1887

Manufactured in Coventry, England, by Webster & Bennett Limited

The world's best known manufacturer of Vertical Turning Machines

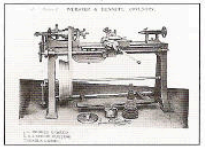
More than 10,000 installations in more than 50 countries

from the beginning



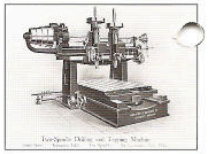
1887 Webster & Howarth

1895 Webster Howarth & Bennett



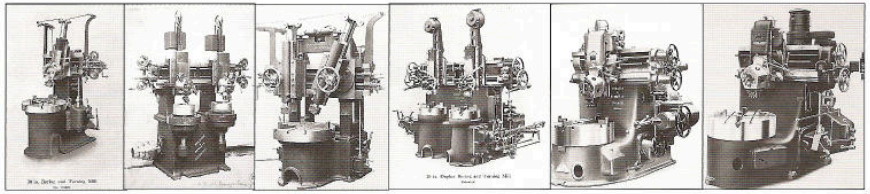


1906 Webster & Bennett Limited

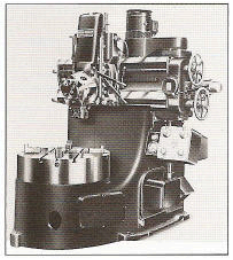


For the next 17 years Webster & Bennett Ltd produced a variety of machine tools including lathes, capstan lathes, plano milling machines and the early examples of what was to become the world's best known range of Vertical Turning and Boring Lathes -

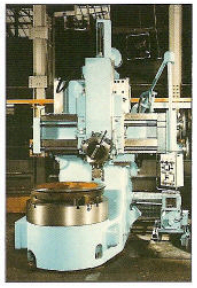
ONE AFTER THE OTHER - LEADING THE WAY



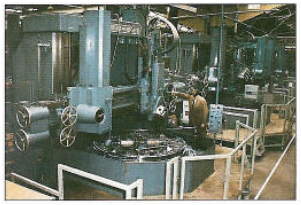
In 1923 Webster & Bennett became the first machine tool manufacturer specialising only in Vertical Turning Machines and produced the conventional machines which were to become class leaders in the world market with more than 10,000 installations - the world's largest customer base.



DH & EH Types
5981 installed between 1950 & 1966



M, EM, V & R Types
1318 installed between 1965 & 1984



DCH & DCM Types
88 installed between 1962 & 1980

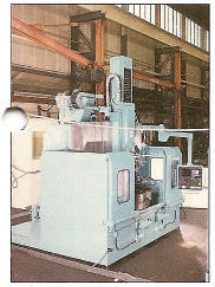
from the beginning of NC & CNC

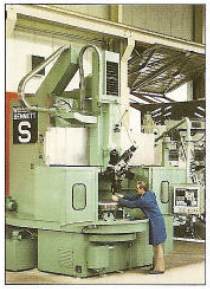
1967 Webster & Bennett introduce..

the FRNC and ERNC models, producing 168 between 1967 and 1981.



1980 Webster & Bennett introduce..







New CNC models - the medium duty 'T' Range and the heavy duty 'S' range which are quickly recognised as class leaders in the world market with more than 100 installations. Unfortunately in 1984 Webster & Bennett is merged into the Wickman factory and for 11 years production and development is virtually nothing.

In 1993 the company has new owners and despite the ongoing demand for 'T' and 'S' machines a totally new Webster & Bennett is developed culminating in the launch of the Millennium 4 Series machine at Mach 96 NEC Birmingham.

1996 Webster & Bennett introduce..the Millennium



Webster
Coventry
WB
England
Bennett
1887

"A glorious history is only of value now if it leads us to a glorious future" - Michel Muller 1993 upon acquiring Webster & Bennett Ltd.

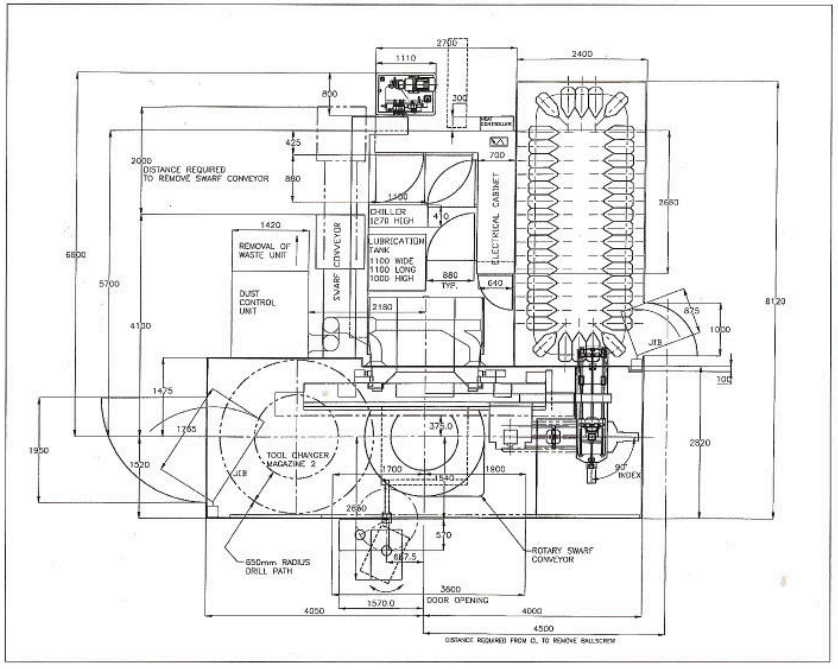
The Millennium 4 Series



A MILLENNIUM 4-160/220S-L with Live Spindle, C axis, 18 tool ATC, 40 tool chain magazine, hydraulic chuck, oil mist removal, totally enclosed guarding (not shown). Siemens 840D CNC.

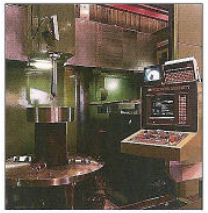
(GEC Alsthom Gears - Rugby)





40-60 tons of high precision machine tool





A MILLENNIUM 4-200/250X boring and turning Oilfield Wellhead Valve Components with extra workpiece height capacity 2800mm. 18 tool ATC, 200mm square ram for small bores. Renishaw work and tool probes. Fanuc 18TB CNC.

(Belmar Ltd - Aberdeen).

A MILLENNIUM 4-160/220T-L with Live Spindle, C axis, 18 tool ATC, Right Angle Milling Head, Fanuc 18TB CNC, Renishaw Tool and Work Probes.

(Nordberg Pty, Johannesburg R.S.A.)

The Millennium Twin Pallet System APS11 is to be retrofitted.

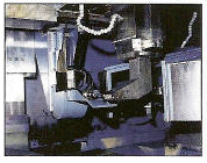


Willie Heunes

Procurement & Supply Manager, Nordberg Pty

"The Millennium 160/220 has proven to set new standards in the market of V.T.L.'s. The 250x250mm square ram and large diameter ball screws are some of the excellent features of the machine tool. The floor mounted tool carousel (18 stations) handles heavy duty toolholders and boring bars, an essential part of Heavy Engineering. Combined with a Renishaw Tool offset probe accuracies in the order of 10µm per metre are obtainable. Table speeds of 440 rpm with weights in excess of 5 ton is easily obtainable. Cut sizes of 16mm per side at 1.6mm feed per revolution on AISI 4340 material placed only 50% load on the main drive. C axis position accuracy is very high and combined with the live tool, milling and drilling characteristics are good.

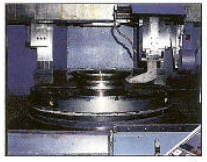
Since installation of the new machine tool our floor to floor lead time has reduced by 60% versus conventional machining times. The machine tool acts as a flexible manufacturing cell in conjunction with the Renishaw workpiece inspection probe, making it a highly valuable asset in any machine shop."



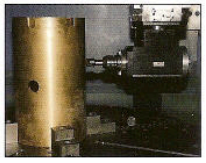
Tool Probing



Work Probing

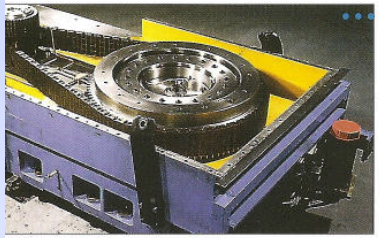


Undercut Turning



Right Angle Milling

Some of the structural details which help make the MILLENNIUM such a superior machine tool



The BASE and MAIN DRIVE

- Grade 300 close grained cast iron, 20 tons tensile
- Chain drive - silent, powerful, reliable
- Timken precision cross roller bearing - a proven quality, proven performance, proven reliability
- A superbly stable drive

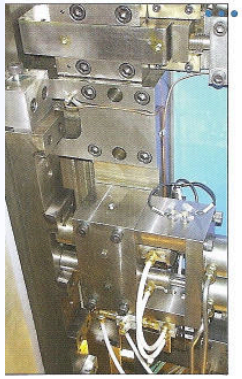
ILUMN

3 piece structure. The outer columns are huge ıctures, grade 300 close grained cast iron, 20 tons sile, to which are bolted and dowelled precision und guideways for the cross rail elevation.

entre column locks the outer columns together to ıduce a substantial column unit weighing)00/35000 kgs, according to model

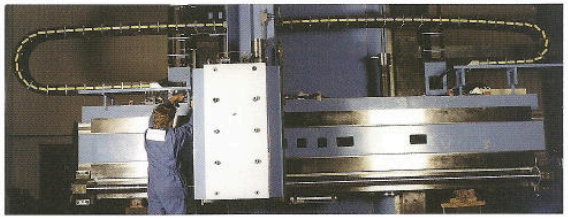
s structure enables the Millennium to offer high formance on workpieces up to 2800mm high





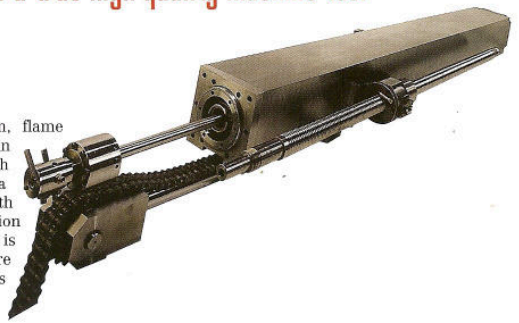
The CROSS SLIDE

A grade 300 close grained iron casting, 20 ton tensile. Precision ground hardened guideways. Mating surfaces and gibs are lined with turcite. A powerful and heavy duty cross rail latching system ensures cross rail positional accuracy.



Some of the detail which contributes towards the production of a true high quality machine tool

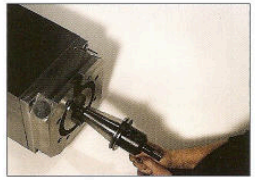
The RAM & LIVE SPINDLE

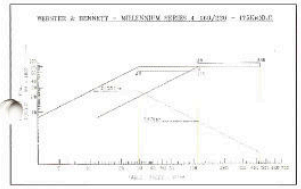


The 250mm square EN8 forged steel ram, flame hardened and precision ground, is mounted in a rigid close grained Meehanite GD275 high quality casting. The ram is supported in a housing whose guideways are lined with 1.1/4mm 'Turcite' material having low friction and anti stick-slip characteristics. The slide is fitted with 'Turcite' faced gib strips to ensure accurate and efficient operation and includes an adjustment facility to compensate for wear.

The live spindle - a 18.5/22 kW A.C. spindle drive motor is mounted on the top of the ram and connected to a hollow drive shaft through the centre of the ram. The front mounted cartridge unit is designed for speeds up to 4000 rpm. The spindle is mounted in high precision angular contact bearings grease lubricated. Driven tools are retained using DIN standard pull studs and are located by a 50 ISO taper.

Static tools are retained by 4 hydraulically actuated wedge lock clamping elements to ensure high rigidity and accuracy.



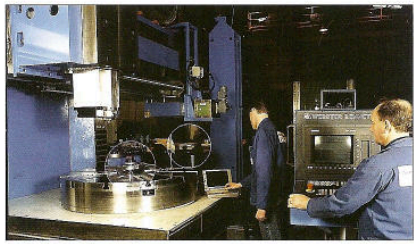


A Millennium 4-160/220 with 75 kw DC motor

FULL USE OF POWER

The Millennium uses all the power over most of its speed range. The choice of motors and gearboxes provides exceptional torque power bands.

The proof is in the performance..





The Millennium is tested throughout its total range of working and is provided with a

- FUNCTIONS TEST CERTIFICATE
- OPERATING ACCURACY CERTIFICATE.

Laser checking and calibration is used extensively.

The Millennium 3 Series



Beautiful and new..... ..... but already PROVEN.

The qualities of the MILLENNIUM 3 SERIES will excite major companies and quality subcontractors in these industries -

- Aerospace
- Aero Engine Repair
- Railway
- Defence
- Foundry
- Pump
- Valve and General Engineering

A 'pre launch' order book from some of the world's great engineering names is now being extended by the orders from well known subcontract engineering companies.

The MILLENNIUM 3 SERIES - 2 frame sizes

(a) 3-120/150 1200mm table, 1800mm swing, 1200mm height (option 1500mm) 37.5 kw DC (continuous duty) (option 50 kw).
Steel table. 580 rpm.
Fanuc 18Ti or Siemens 840D CNC

(b) 3-175/210 1750mm table, 2100mm swing, 1200mm height (option 1500mm) 37.5 kw DC (continuous duty) (option 50 kw)
Steel table. 400 rpm.
Fanuc 18Ti or Siemens 840D CNC

- 200mm square forged steel ram to all models
- 11/15 kw live tooling option
- Very accurate 'C' axis table drive

SUPERB CHOICE OF AUTOMATIC TOOLCHANGERS AND TWIN AND MULTI PALLET SYSTEMS

Webster & Bennett build only Vertical Turning Machines and have done since 1923.
The world's best known manufacturer of Vertical Turning Machines is also known as

The World's specialist in Vertical Turning

High Precision, High Performance, Versatile like its big brother - the 4 series, - the 3 series Millennium has quality stamped all over it.



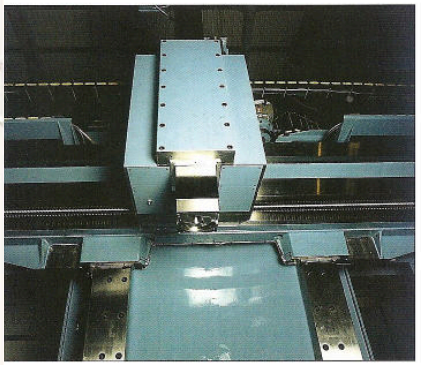


THE MAJOR CASTINGS

The base, column and cross slide are all close grained, grade 300, 20 tons tensile. The drive system utilises a similar chain for high reliability and low noise operation as has been used with such success in the 4 Series Millennium. A high precision Timken cross roller bearing is housed in the main drive sprocket. Precision groundways are bolted to the column face to guide the cross slide during elevation. The cross slide guideways are hardened and precision ground, mating surfaces and jibs aligned with turcite.

THE RAM & LIVE SPINDLE

The 200mm square hardened and ground forged steel ram is mounted in a rigid close grained high quality casting Meehanite Grade GD275. The ram is supported in a housing whose guideways are lined with 'Turcite' material having low friction and anti stick-slip characteristics. The slide is fitted with 'Turcite' faced gib strips to ensure accurate and efficient operation and includes an adjustment facility to compensate for wear. Tooling is located on a 175 dia. spigot and radial tenon locations, and clamped using DIN standard pull stud. A 60 taper ram bore is also offered as an option for machines without Live Spindles.



The Live Spindle - 11/15 kW A.C. spindle drive motor is mounted on top of the ram and connected to a hollow drive shaft through the centre of the ram driving the main spindle which is mounted in high precision angular contact bearings grease lubricated. Driven tools are retained using DIN standard pull studs and are located by a 50 ISO taper. Static tools are retained using DIN standard pull studs into a specially designed location.

Other 50 taper based standard tooling can be accommodated if specified at time of order.

Webster & Bennett offer the Millennium with the following CNC specifications

...UC 18TB
...ries 4 machines

1. Standard Specification

1)	Axis control	3-axis (X,Z,C)
2)	Simultaneous controllable axis	2 axis
3)	Tape code ~	EIA RS244
4)	EIA/ISO switching	MDI setting
5)	Feedrate override	0-120%
6)	Spindle speed override	0-120%
7)	Manual feed	X,Z,C axis
	MPG step	X1 X10 X100
8)	Constant surface speed	
9)	Part program memory 40M	
10)	RS232 mounted on pendant	
11)	14" Colour CRT	
12)	Expanded stroke check	
13)	Custom macro B	
14)	Work coordinate system G52 - 59	
15)	Tool offsets 32	
16)	Graphic display	
17)	Thread cycle retract	
18)	Continuous thread cutting	
19)	Variable lead thread cutting	
20)	Program restart	
21)	Pitch error compensation	
22)	Programmable data input G 10	
23)	Chamferring corner R	
24)	Inch/Metric conversion	
25)	Multi canned cycle	
26)	Multi repetitive cycle	
27)	External message/Alarms	
28)	Tool nose radius compensation	
29)	Tool geometry wear Compensation	
30)	Background editing	
31)	Sequence number stop	
32)	Servo motors Fanuc	
	X-Axis alpha 30	
	Z-Axis alpha 30	
	C-Axis alpha 30	
33)	Modes - Auto Edit Mdi Jog Handle	
34)	Power supply 415V 3-Phase ~ 10%	

(Please specify when different from above)

2. CNC Options

1)	G code B/C	
2)	Canned cycles for drilling	
3)	Super CAP T	
4)	CAP I	
5)	CAP II	
6)	Animated simulation for vertical lathe	
7)	C-axis Fapt	
8)	Tool/chuck/workpiece interference check	
9)	Tool offsets	64 pairs
		99 pairs
10)	Part program memory options	80m
		160m
		320m
		640m
		1280m
11)	No of registerable programs	125
		200
		400
		1000
12)	Run hour and parts count display	
13)	Directory display of floppy cassette	
14)	Floppy disk drive	
15)	Simultaneous control of 4 axis	
16)	Tool retract and recover	

...UC 18Ti
...ries 3 machines

The specification for the 18Ti is the same as above other than the following:
1) CRT 10" Colour LCD

Please note we reserve the right to change the above specification without notice at any time in order to affect improvements.

CNC specifications continued..

Siemens 840D
Series 4 & 3 machines

1. Standard Specification

1)	Axis control	3-axis (X,Z,C)
2)	Simultaneous controllable axis	3 axis
3)	Tape code	EIA RS232
4)	EIA/ISO switching	MDI setting
5)	Feedrate override	0-200%
6)	Spindle speed override	0-200%
7)	Manual feed	X,Z,C axis
	MPG step	X1 X10 X100 X1000
8)	Constant surface speed	
9)	Part program memory 256KB	
10)	RS232 mounted on pendant	
11)	14" Colour CRT full qwerty keyboard	
12)	Macro functions	
13)	Tool offsets up to 999 configurable (note the more offsets used the less part program memory available)	
14)	Pitch error compensation	
15)	Continuous thread cutting	
16)	Distance to go display	
17)	Chamferring corner R	
18)	Inch/Metric conversion	
19)	Multi canned cycle	
20)	External message/Alarms	
21)	Tool nose radius compensation	
22)	Tool wear Compensation	
23)	Sequence number stop	
24)	Servo motors digital	
25)	Modes - Auto Mdi Jog Handle.REF	
26)	Power supply 41 SV 3-Phase – 10%	

(Please specify when different from above)

2. CNC Options

1)	Graphics
2)	Background editing
3)	Floppy disk drive

The Millennium 4 Series

WEBSTER & BENNETT MILLENNIUM Vertical Turning and Boring Machine		4-125/175S	4-160/220S	4-200/250S	4-270/310S
CNC Control		Fanuc 18TB Siemens 840D NUM 1060T	Fanuc 18TB Siemens 840D NUM 1060T	Fanuc 18TB Siemens 840D NUM 1060T	Fanuc 18TB Siemens 840D NUM 1060T
Table and Drive					
Table is all steel, machined to choice & 'T' slotted for 4 chuck jaws		1250mm diameter	1600mm diameter	2000mm diameter	2700mm diameter
Maximum swing & maximum turning diameter		2000mm	2200mm	2500mm	3100mm
Maximum table loading		10,000 kg	15,000 kg	20,000 kg	20,000 kg
Table speeds		400 rpm (option 560rpm)	312 rpm (option 440rpm)	250 rpm (option 350rpm)	185 rpm 50 kwDC
Main motor - DC, continuous duty, for high torque		50 kwDC (option 75 kw)	50 kwDC (option 75 kw)	50 kwDC (option 75 kw)	(option 75 kw)
Maximum cutting height above table		1400mm (option to 2200mm)	2000mm (option to 2800mm)	2000mm (option to 2800mm)	2000mm (option to 2800mm)
Crossrail					
Maximum height admitted under cross rail		1585mm (option to 2385mm)	2185mm (option to 2985mm)	2185mm (option to 2985mm)	2185mm (option to 2985mm)
Vertical travel of cross rail - W axis		1000mm (option 1800mm)	1400mm (option 2200mm)	1400mm (option 2200mm)	1400mm (option 2200mm)
Crossrail latching - incremental		200mm/min	200mm/min	200mm/min	200mm/min
Crossrail adjusting speed		1000mm/min	1000mm/min	1000mm/min	1000mm/min
Ram Toolslide					
Dimension of ram toolslide (square forged steel ram)		250x250mm	250x250mm	250x250mm	250x250mm
Ram toolslide stroke - Z axis		1500mm	1500mm	1500mm	1500mm
Maximum height admitted under ram		1570mm (option to 2370mm)	2170mm (option to 2970mm)	2170mm (option to 2970mm)	2170mm (option to 2970mm)
Horizontal travel of ram - X axis	*Total*	3000mm	3200mm	3500mm	4100mm
Horizontal travel of ram right of centre		1500mm	1600mm	1750mm	2050mm
Horizontal travel of ram left of centre		1500mm	1600mm	1750mm	2050mm
Rapid traverse		12000mm/min	12000mm/min	12000mm/min	12000mm/min
Feed rates - infinitely variable to		6000mm/min	6000mm/min	6000mm/min	6000mm/min
Machine weight, approx		34,000 kgs	39,000 kgs	44,000 kgs	48,000 kgs

WEBSTER & BENNETT MILLENNIUM Vertical Turning and Machining Centre		4-125/175S-L	4-160/220S-L	4-200/250S-L	4-270/310S
CNC Control		Fanuc 18TB Siemens 840D NUM 1060T	Fanuc 18TB Siemens 840D NUM 1060T	Fanuc 18TB Siemens 840D NUM 1060T	Fanuc 18TB Siemens 840D NUM 1060T
Table and Drive					
Table is all steel, machined to choice & 'T' slotted for 4 chuck jaws		1250mm diameter	1600mm diameter	2000mm diameter	2700mm diameter
Maximum swing & maximum turning diameter		1750mm	2200mm	2500mm	3100mm
Maximum table loading		10,000 kg	15,000 kg	20,000 kg	20,000 kg
Table speeds		400 rpm (option 560rpm)	312 rpm (option 440rpm)	250 rpm (option 350rpm)	185 rpm
Main motor - DC, continuous duty, for high torque		50 kwDC (option 75 kw)	50 kwDC (option 75 kw)	50 kwDC (option 75 kw)	50 kwDC (option 75 kw
Maximum cutting height above table		1400mm (option to 2200mm)	2000mm (option to 2800mm)	2000mm (option to 2800mm)	2000mm (option to 2800mm)
Crossrail					
Maximum height admitted under cross rail		1585mm (option to 2385mm)	2185mm (option to 2985mm)	2185mm (option to 2985mm)	2185mm (option to 2985mm)
Vertical travel of cross rail - W axis		1000mm (option 1800mm)	1400mm (option 2200mm)	1400mm (option 2200mm)	1400mm (option 2200mm)
Crossrail latching - incremental		200mm/min	200mm/min	200mm/min	200mm/min
Crossrail adjusting speed		1000mm/min	1000mm/min	1000mm/min	1000mm/min
Ram Toolslide with Live Spindle					
with spindle orientation & through spindle coolant					
Dimension of ram toolslide (square forged steel ram)		250x250mm	250x250mm	250x250mm	250x250mm
Ram toolslide stroke - Z axis		1500mm	1500mm	1500mm	1500mm
Power of live spindle drive		18.5/22 kw AC	18.5/22 kw AC	18.5/22 kw AC	18.5/22 kw AC
Live spindle speeds up to		4000 rpm	4000 rpm	4000 rpm	4000 rpm
Toolholder taper/pull stud		ISO 50/B	ISO 50/B	ISO 50/B	ISO 50/B
Maximum height admitted under ram		1570mm (option to 2370mm)	2170mm (option to 2970mm)	2170mm (option to 2970mm)	2170mm (option to 2970mm)
Horizontal travel of ram - X axis	*Total*	3000mm	3200mm	3500mm	4100mm
Horizontal travel of ram right of centre		1500mm	1600mm	1750mm	2050mm
Horizontal travel of ram left of centre		1500mm	1600mm	1750mm	2050mm
Rapid traverse		12000mm/min	12000mm/min	12000mm/min	12000mm/min
Feed rates - infinitely variable to		6000mm/min	6000mm/min	6000mm/min	6000mm/min
'C' Axis to Table					
Torque at table		6.25 KNM	8 KNM	10 KNM	16 KNM
Table speeds for continuous milling		0.1 to 3.1 rpm	0.1 to 2.4 rpm	0.1 to 2 rpm	0.1 to 1.25 rpm
Table speeds for positioning & intermittent milling		0.1 to 6.5 rpm	0.1 to 5 rpm	0.1 to 4 rpm	0.1 to 2.5 rpm
Machine weight, approx		34,000 kgs	39,000 kgs	44,000 kgs	48,000 kgs

The Millennium 3 Series

WEBSTER & BENNETT MILLENNIUM Vertical Turning and Boring Machine		3-120/150		3-175/210	
CNC Control		Fanuc 18Ti Siemens 840D NUM 1060T	*options*	Fanuc 18Ti Siemens 840D NUM 1060T	*options*
Table and Drive					
Table is all steel, machined to choice & 'T' slotted for 4 chuck jaws		1200mm dia.	*1400mm*	1750mm dia.	*2000mm*
Maximum turning diameter		1500mm		2100mm	
Maximum swing		1800mm		2150mm	
Maximum table loading		10,000 kg		15,000 kg	
Table speeds		580 rpm		400 rpm	
Main motor - *DC for high torque*	*continuous duty*	45 kwDC	*60 kW*	45 kwDC	*60 kW*
Maximum cutting height above table		1200mm	*1500mm*	1200mm	*1500mm*
Crossrail					
Maximum height admitted under cross rail		1325mm	*1625mm*	1325mm	*1625mm*
Vertical travel of cross rail - W axis		600mm		600mm	
Crossrail latching - incremental		200mm/min		200mm/min	
Crossrail adjusting speed		1000mm/min		1000mm/min	
Ram Toolslide					
Dimension of ram toolslide (square forged steel ram)		200x200mm	*250x250mm*	200x200mm	*250x250mm*
Ram toolslide stroke - Z axis		1000mm		1000mm	
Maximum height admitted under ram		1320mm	*1620mm*	1320mm	*1620mm*
Horizontal travel of ram - X axis	*Total*	2980mm		3530mm	
Horizontal travel of ram right of centre		1490mm		1765mm	
Horizontal travel of ram left of centre		1490mm		1765mm	
Rapid traverse		10000mm/min		10000mm/min	
Feed rates - infinitely variable to		5000mm/min		5000mm/min	
Machine weight, approx.		28,000 kgs		34,000 kgs	

WEBSTER & BENNETT MILLENNIUM Vertical Turning and Machining Centre		3-120/150-L		3-175/210-L	
CNC Control		Fanuc 18Ti Siemens 840D NUM 1060T	*options*	Fanuc 18Ti Siemens 840D NUM 1060T	*options*
Table and Drive					
Table is all steel, machined to choice & 'T' slotted for 4 chuck jaws		1200mm dia.	*1400mm*	1750mm dia.	*2000mm*
Maximum turning diameter		1500mm		2100mm	
Maximum swing		1800mm		2150mm	
Maximum table loading		10,000 kg		15,000 kg	
Table speeds		580 rpm		400 rpm	
Main motor - *DC for high torque*	*continuous duty*	45 kwDC	*60 kW*	45 kwDC	*60 kW*
Maximum cutting height above table		1200mm	*1500mm*	1200mm	*1500mm*
Crossrail					
Maximum height admitted under cross rail		1325mm	*1625mm*	1325mm	*1625mm*
Vertical travel of cross rail - W axis		600mm		600mm	
Crossrail latching - incremental		200mm/min		200mm/min	
Crossrail adjusting speed		1000mm/min		1000mm/min	
Ram Toolslide with Live Spindle					
with spindle orientation & through spindle coolant					
Dimension of ram toolslide (square forged steel ram)		200x200mm	*250x250mm*	200x200mm	*250x250mm*
Ram toolslide stroke - Z axis		1000mm		1000mm	
Power of live spindle drive		11/15 kw AC	*18.5kW/22kW AC*	11/15 kw AC	*18.5kW/22kW AC*
Live spindle speeds up to		4000 rpm		4000 rpm	
Toolholder taper/pull stud		ISO 50/B		ISO 50/B	
Maximum height admitted under ram		1320mm	*1620mm*	1320mm	*1620mm*
Horizontal travel of ram - X axis	*Total*	2980mm		3530mm	
Horizontal travel of ram right of centre		1490mm		1765mm	
Horizontal travel of ram left of centre		1490mm		1765mm	
Rapid traverse		10000mm/min		10000mm/min	
Feed rates - infinitely variable to		5000mm/min		5000mm/min	
'C' Axis to Table					
Torque at table		6 KNM		8 KNM	
Table speeds for continuous milling		0.1 to 2.65 rpm		0.1 to 1.8 rpm	
Table speeds for positioning & intermittent milling		0.1 to 5.3 rpm		0.1 to 3.6 rpm	
Machine weight, approx		28,000 kgs		34,000 kgs	

The versatility and productivity of the Millennium range of machines can be further enhanced with the use of second RAM TOOLSLIDE, AUTO TOOL SETTING PROBES, TOOLFORCE MONITORING, WORK PROBING, EXPANDED TOOLCHANGING & STORAGE SYSTEMS, MANUAL and AUTOMATIC PALLET SYSTEMS, RIGHT ANGLE & UNIVERSAL MILLING ATTACHMENTS, 'Y' AXIS MILLING & DRILLING ATTACHMENT.

FIXED RAIL, LOW HEIGHT, MACHINES AVAILABLE FOR STANDARD and HIGH PRECISION WHEEL TURNING and BORING OPERATIONS FOR THE RAILWAYS INDUSTRY.

Automatic toolchange options

STANDARD DISC TYPE AUTOMATIC TOOLCHANGERS

The standard 18 and 24 station toolchangers are floor mounted and carry static or driven tooling in any of the stations. Maximum load on the toolchanger is 656 kg, 1440 lb. Maximum individual toolholder weight 40 kg, 90lb. Maximum length of toolholder 450mm/18', maximum diameter of toolholder 250mm/9.3/4'. Random tool selection. An optional second standard ATC can be fitted - Ref: ATC1-18 and ATC1-24.

HEAVY DUTY DISC TYPE TOOLCHANGER (optional extra)

An 18 position disc type ATC with capacity of 55 kg individual tool weight and 600mm tool length - Ref: ATC2. Can be used in conjunction with Crossrail Unit - Ref: CRTU.

HIGH CAPACITY MAGAZINES - available in several specifications.

CROSSRAIL MOUNTED TRANSFER UNIT (optional extra)

This unit, Ref: CRTU, is a 6 station rotary magazine fed by the Elevating Transfer Unit which can select tools from either the 18 station Disc Type Tool Magazine Ref: ATC1 and ATC2, or from the High Capacity Magazines - Ref: ATC3. The individual maximum toolholder weight allowed is 80 kgs and the total toolholder weight must not exceed 220 kgs at any one time.

NB: When used on a live spindle machine one position must be reserved for use of the tool blanking plate. This equipment is part of the standard supply with the High Capacity Magazines -Ref: ATC3.

HIGH CAPACITY MAGAZINES (optional extra)

A heavy duty base unit with 40 tool capacity magazine maximum individual toolweight 80 kgs. Total loading up to 1600 kgs. Tool length up to 650mm - Ref: ATC3-40.



ATC 3 - 40 & CRTU

Tools are transferred from the magazine to a six position transfer unit - Ref: CRTU mounted on the cross slide. Only the transfer time into the machine spindle interrupts the cutting cycle time.

A second and third tier may be added to give 80, Ref ATC3-80, or 120, Ref ATC3-120, tool capacity. The upper tiers have individual tool capacity of 20 kgs and 300mm length and increase the total tooling weight allowed to 2200 kg and 2800 kg respectively.

Automatic pallet systems

AUTOMATIC PALLET SYSTEMS - 7000 kgs transfer capacity.
Ref: APS7

1. Pallet Holder - machine table mounted. This unit replaces the standard machine faceplate or chuck. It is directly mounted on the main machine bearing housing and incorporates the following features.

(a) pallet holder,

(b) hydraulically actuated conical centre locator, to accurately locate the pallet on the centre of the machine table,

(c) centre guide with male angled wedge locators to transmit radial torque and accurately locate the pallet for 'C' axis positioning.

(d) two tee shaped clamping rails either side of the centre guide. Each with a series of clamp cylinders. Each cylinder is disc spring clamped and hydraulically released. Services i.e. air and hydraulic are fed to the pallet holder. Each locating face and clamping area incorporates an air blast port to clean contact faces while clamping and each part is monitored by a pressure switch for back pressure to ensure air tight mating contact and correct clamping condition.

Total clamping force acting on the pallet 30,000 kg min. 1200 diameter pallet

35,000 kg min. 1750 diameter pallet

The thickness of the standard pallet table reduces the height under cross rail by 190mm

Maximum transferable weight of pallet table, fixture and component is 7000 kgs

2. Pallet transfer unit - this floor mounted unit is positioned in front of the machine base. It incorporates a primary and secondary linear slide system and servo driven rotary index drive. + To transfer the pallet between the machine table, pallet setting station and pallet static station.
3. Pallet Setting Station - the pallet setting station is a floor mounted unit and is positioned adjacent to the pallet transfer unit. This features a pallet holder table as per section 1. But also incorporates a rotary drive via an inverter controlled A.C. Motor. This is used to rotate the pallet at slow speeds for setting purposes.
4. Pallet Static Station - this unit is a floor mounted unit and incorporates a pallet guide and locking plunger, to store and hold pallets whilst being transferred through the system.

HEAVY DUTY AUTOMATIC PALLET SYSTEM - 11,000 kgs - transfer capacity
Ref: APS11

Only available for 4-160 and 4-200 models

1. Pallet Holder - machine table mounted. This unit replaces the standard machine faceplate or chuck. This system has class leading workholding capacity. It is directly mounted on the main machine bearing housing and incorporates the following features.

(a) pallet holder,

(b) hydraulically actuated conical centre locator, to accurately locate the pallet on the centre of the machine table,

(c) centre guide with male angled wedge locators to transmit radial torque and accurately locate the pallet for 'C' axis positioning,

(d) two tee shaped clamping rails either side of the centre guide, each with 3 off per rail clamping cylinders. Each cylinder is disc spring clamped and hydraulically released. The total clamping force acting on the pallet is 40,000 kg. Each locating face and clamping area incorporates an air blast port to clean contact faces while clamping and each part is monitored by pressure switch for back pressure to ensure air tight mating contact and correct clamping condition.

(e) services i.e. air and hydraulic system are fed to the pallet holder via rotary joint mounted on centre and below the pallet holder. Incorporated with this rotary joint is the 'C' axis encoder which is directly connected to the centre of the table ensuring accurate radial positioning.

2. Pallet transfer unit - this floor mounted unit is positioned in front of the machine base. It incorporates a primary and secondary linear slide system complete with hydraulic pallet clamp and servo driven rotary index drive. This is used to transfer the pallet between the machine table, pallet setting station and pallet static station.
3. Pallet Setting Station - the pallet setting station is a floor mounted unit and is positioned adjacent to the pallet transfer unit. This features a pallet holder table as per section 1. But also incorporates a rotary drive via an inverter controlled A.C. Motor. This is used to rotate the pallet at slow speeds for setting purposes.
4. Pallet Static Station - this unit is a floor mounted unit and incorporates a pallet guide and locking plunger, to store and hold pallets whilst being transferred through the system.
5. The maximum transferable weight - pallet table, fixture and component, is 11,000 kgs

MULTIPLE PALLET VERSIONS AVAILABLE

The Millennium manual pallet system - a very efficient cost effective alternative to Automatic Systems - suitable for any VTL.

By adding new ideas and technologies to the experience and expertise developed over many years, we continue to produce the Vertical Turning and Machining Centres most sought after by high quality industry manufacturers. The same manufacturers who have appreciated Webster and Bennett virtues for nearly 80 years.

These are the virtues of building long term reliability and quality at a realistic price.

Iain Exeter

Managing Director

Webster & Bennett Ltd

Webster & Bennett Ltd has 3 groups of shareholders

LICA Development Capital Ltd.

A venture capital fund specialising in engineering investments.

EXETER family.

Iain Exeter is Managing Director of Webster & Bennett Ltd



S.A. MULLER MACHINES of Bienne, Switzerland.

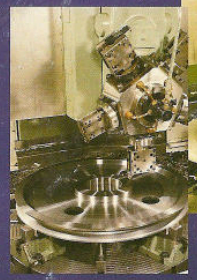
SA Muller are Europe's best known suppliers of precision machine tools, established in 1916.



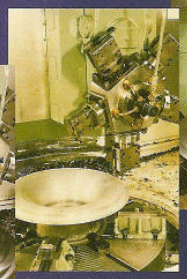
Webster & Bennett Vertical Turning Machines

have been a hard working partner in industries manufacturing these components for more than 70 years.

With the enhanced turning capability and the sophisticated and powerful milling and grinding capability of the Millennium the partnership goes from strength to strength.



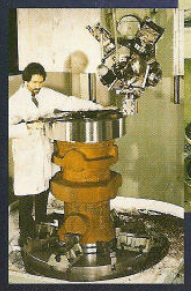
Mining Cable Pulleys



Pump Impeler Housings



Traction Gear Blanks



Oilfield Pipeline Valve Body



Oilfield Rock Drill Bits



Aero Engine Fan Casings



Webster Coventry WB England Bennett

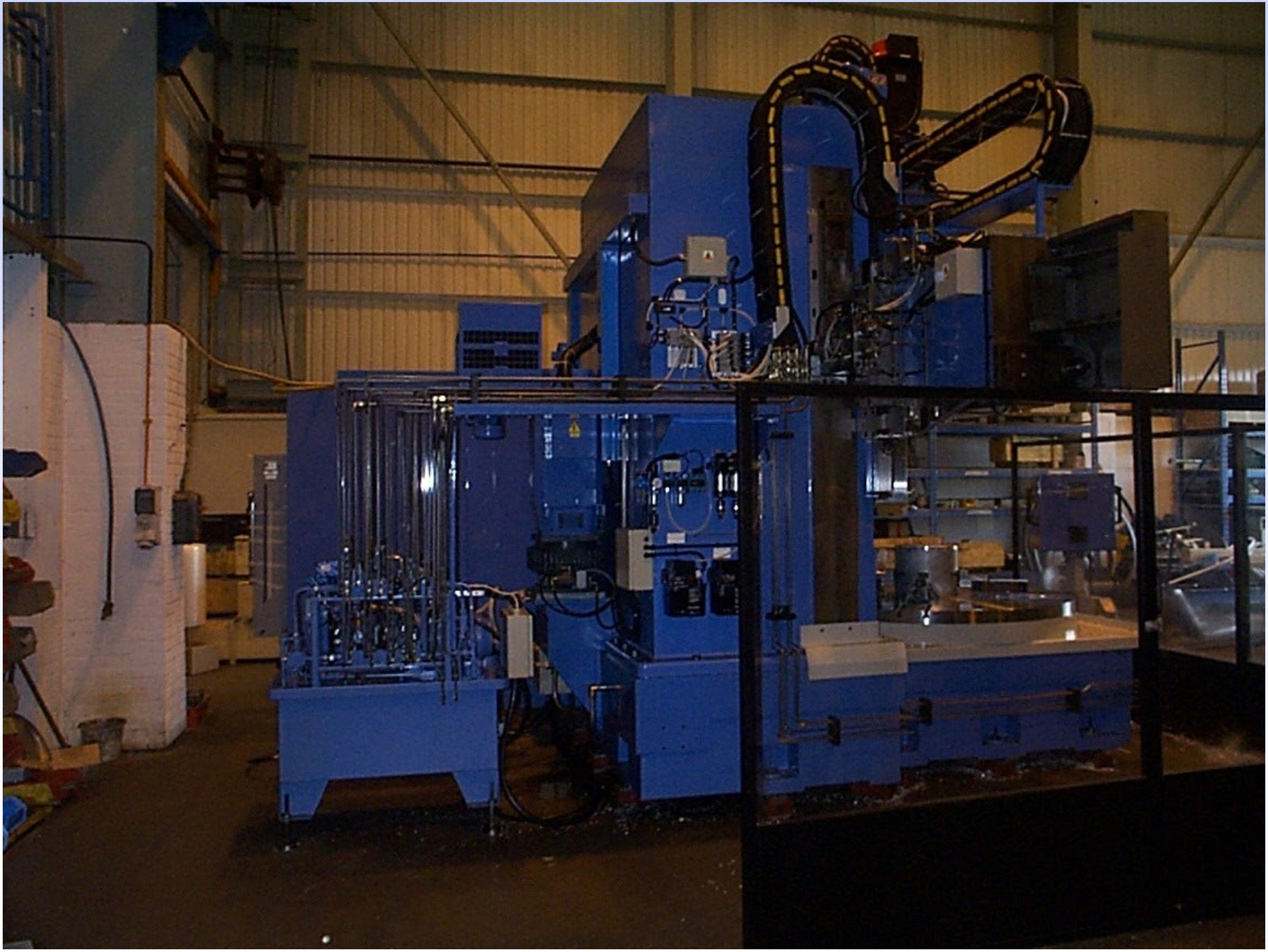
1887

WEBSTER & BENNETT LIMITED
Dutton Road
Coventry
England
CV2 2LE

Telephone (01203) 603360
Facsimile (01203) 602905
EMail mail@webster-bennett.co.uk

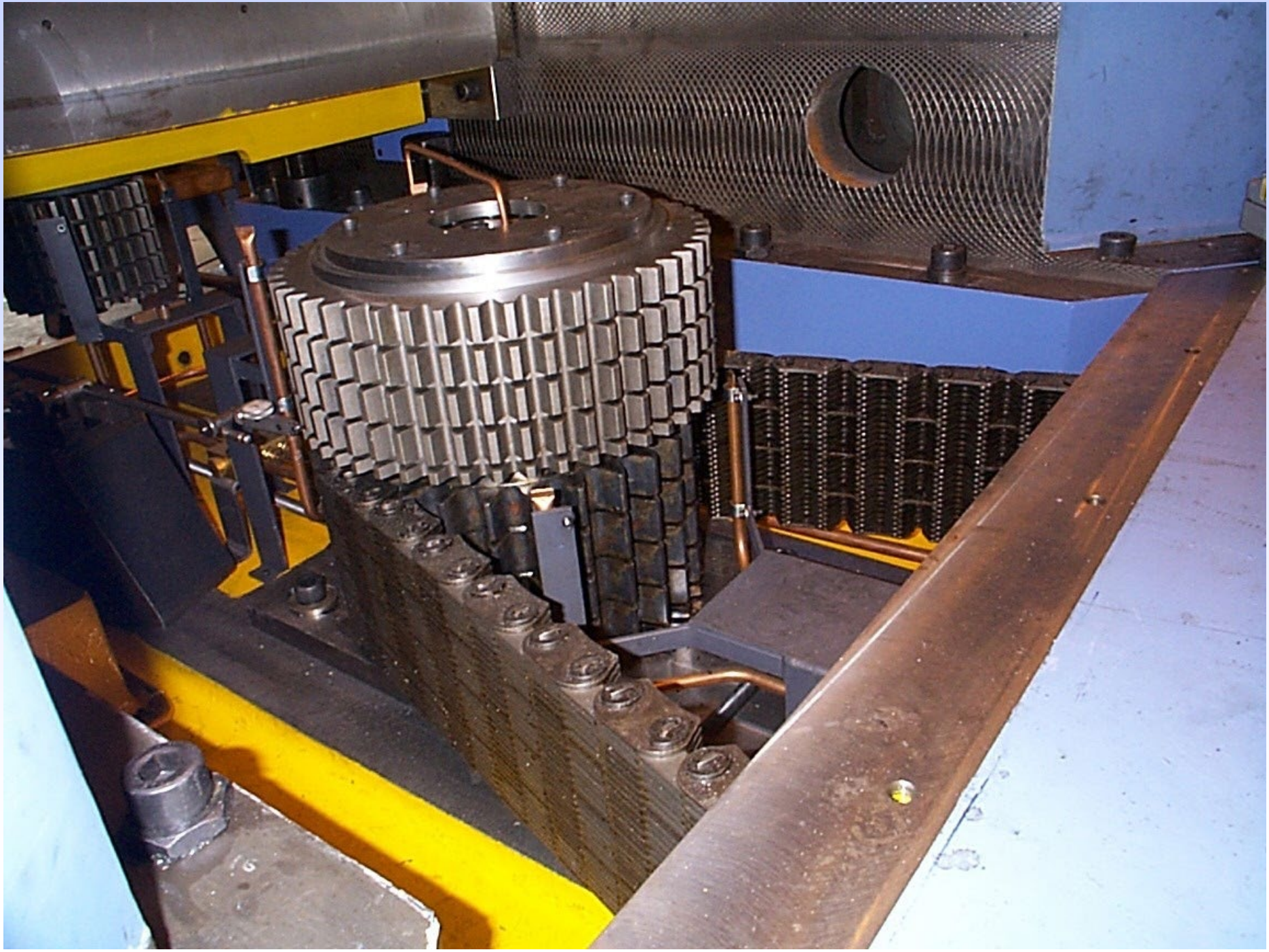
The Millennium in production and on test in Coventry and in users production. 1996 - 2002

















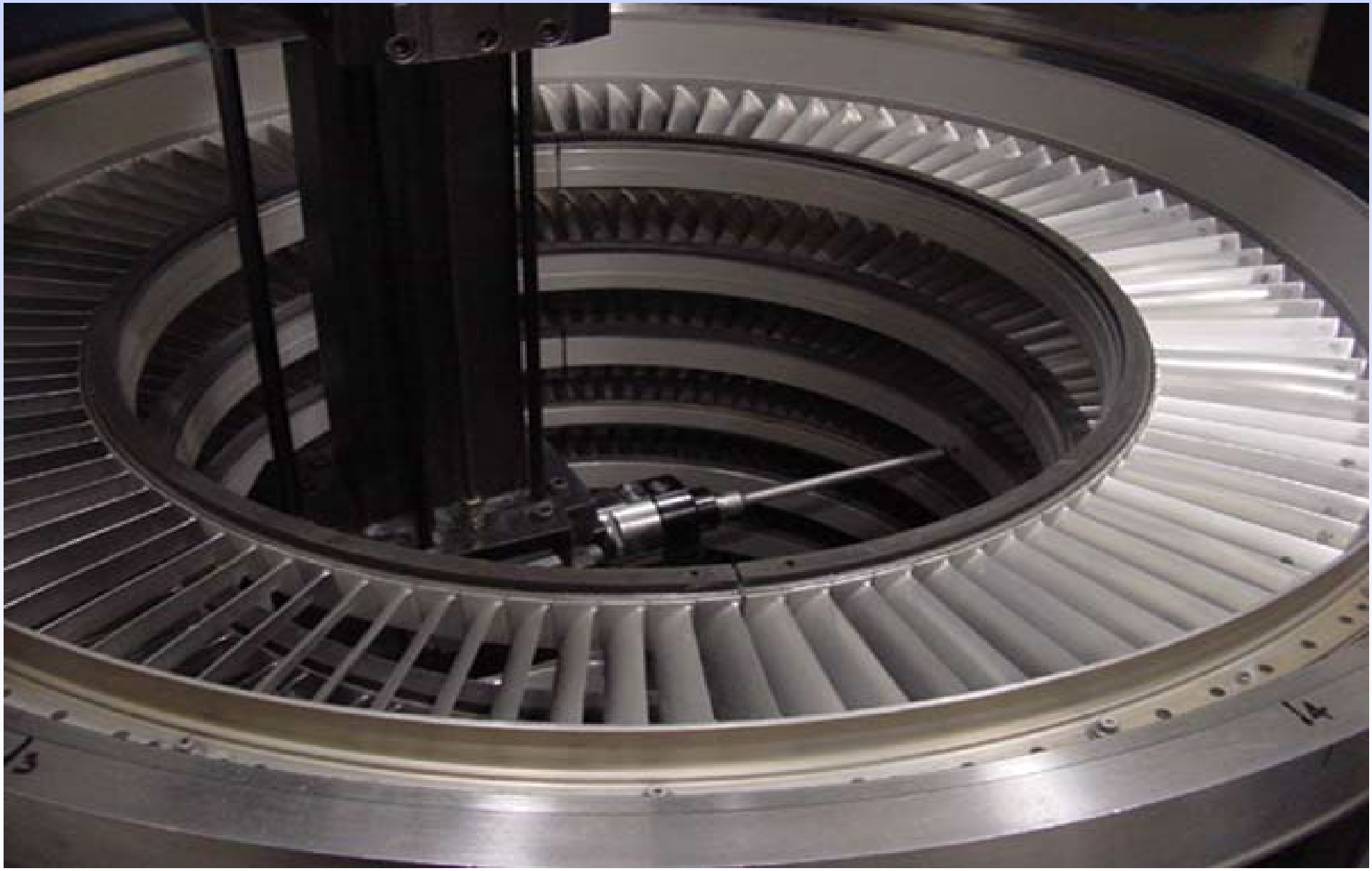




GEAES : TURNING AERO ENGINE CASINGS (INTERNAL) – ACCURACY 7 µ



OPERATOR CAMERA TO CONTROL PROCESS



Special probing system for use before and after machining



Fixture transfer using 3R location system for off machine set up.



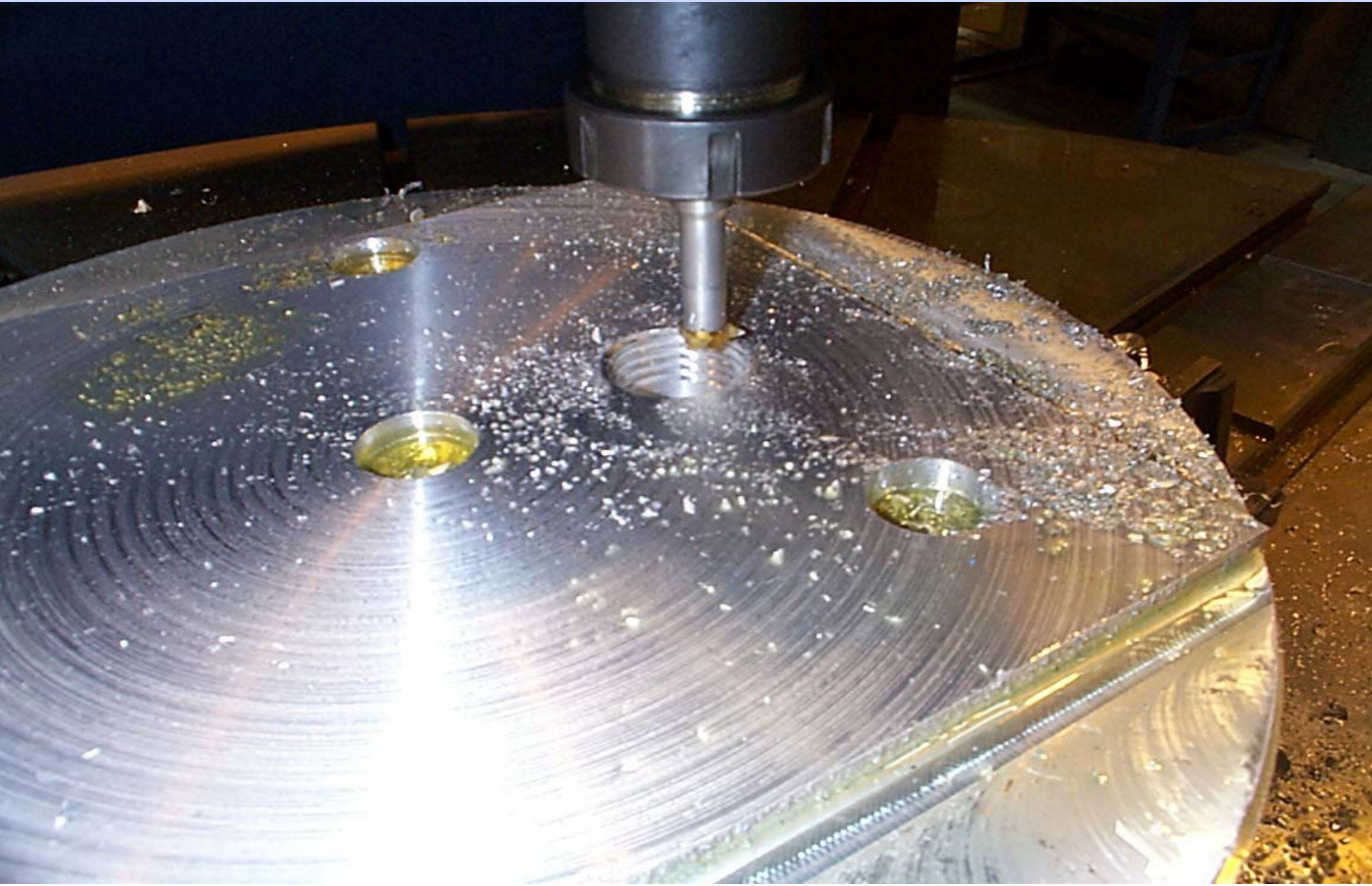
The elliptical head can pick up Capto tools automatically



Grinding the nose of a GE90 jet engine
800 l/min coolant through the table to the fixture



Automatic pallet systems are also available



Off centre thread milling can be performed utilising all the axes



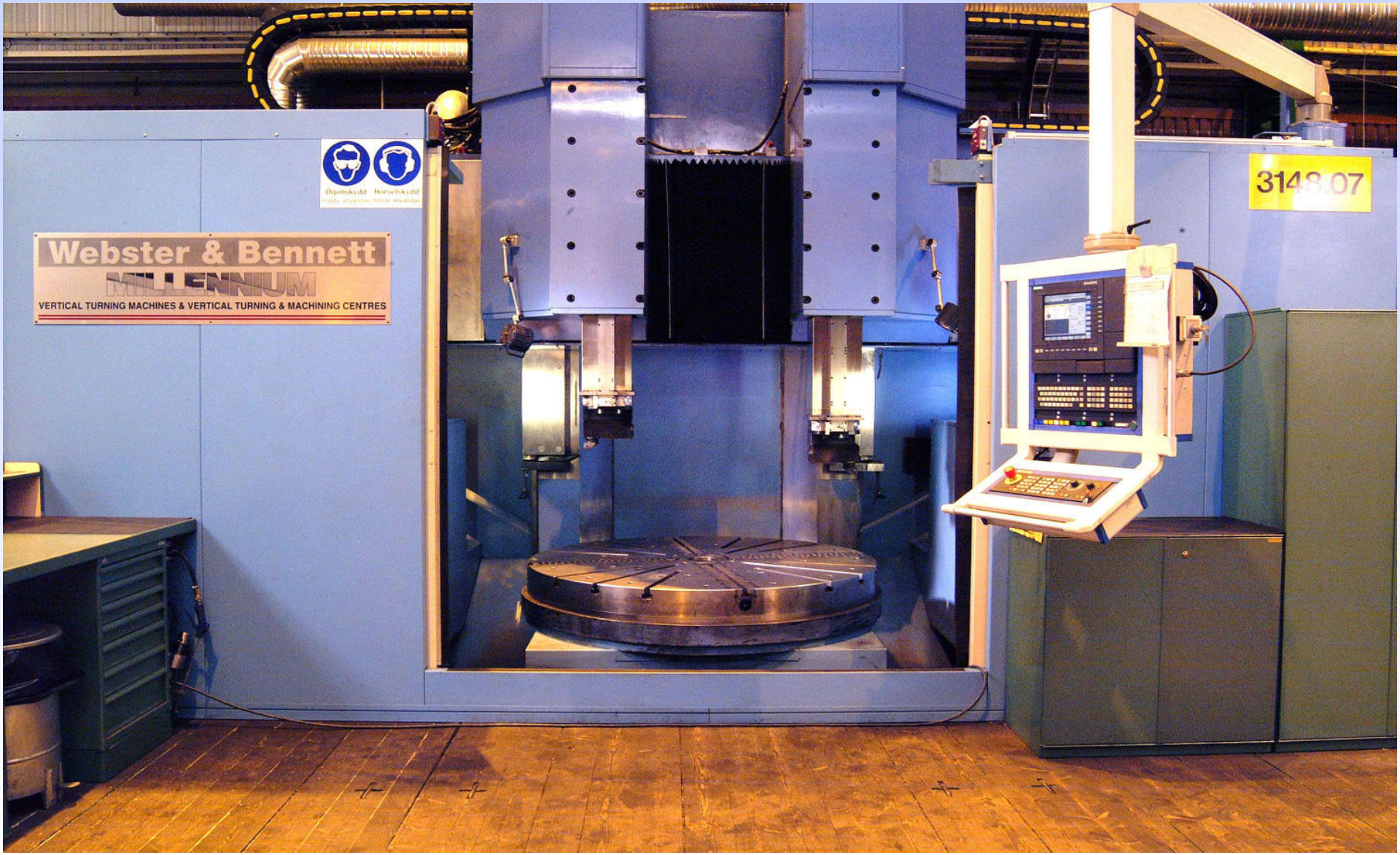
Our machines are flexible enough to machine small components



Same machine - large components



Three machine installation in Sandvik, Sweden



Twin ram - 4 axis machines

The success of the Millennium encouraged the venture capital investors to take a majority shareholding to assist further technical and market share development.

Unfortunately they did not understand the priorities in building machine tools and brought in systems and extra management that caused unacceptable delivery delays and extra costs. End 1999 Exeter walked away in frustration, the small capital he had invested, £1.8m, would soon be lost.

- Early 2000 Exeter accepted a 2 year contract to manage the re-organisation of a 2000 people machine builder in the Czech Republic, Tajmac-ZPS.
- Late 2001 the venture capitalists finally gave up mismanaging Webster & Bennett and put up for sale the wreck they had created.
- Exeter had left an £8m order book (for 1 year). No new orders had been obtained, the workforce had doubled and one machine was being produced with a workforce of 77!
- Exeter bought back the wreck of W&B early 2002.

Chapter 3

2003 - 2010

Continuous development and success
but with a twist

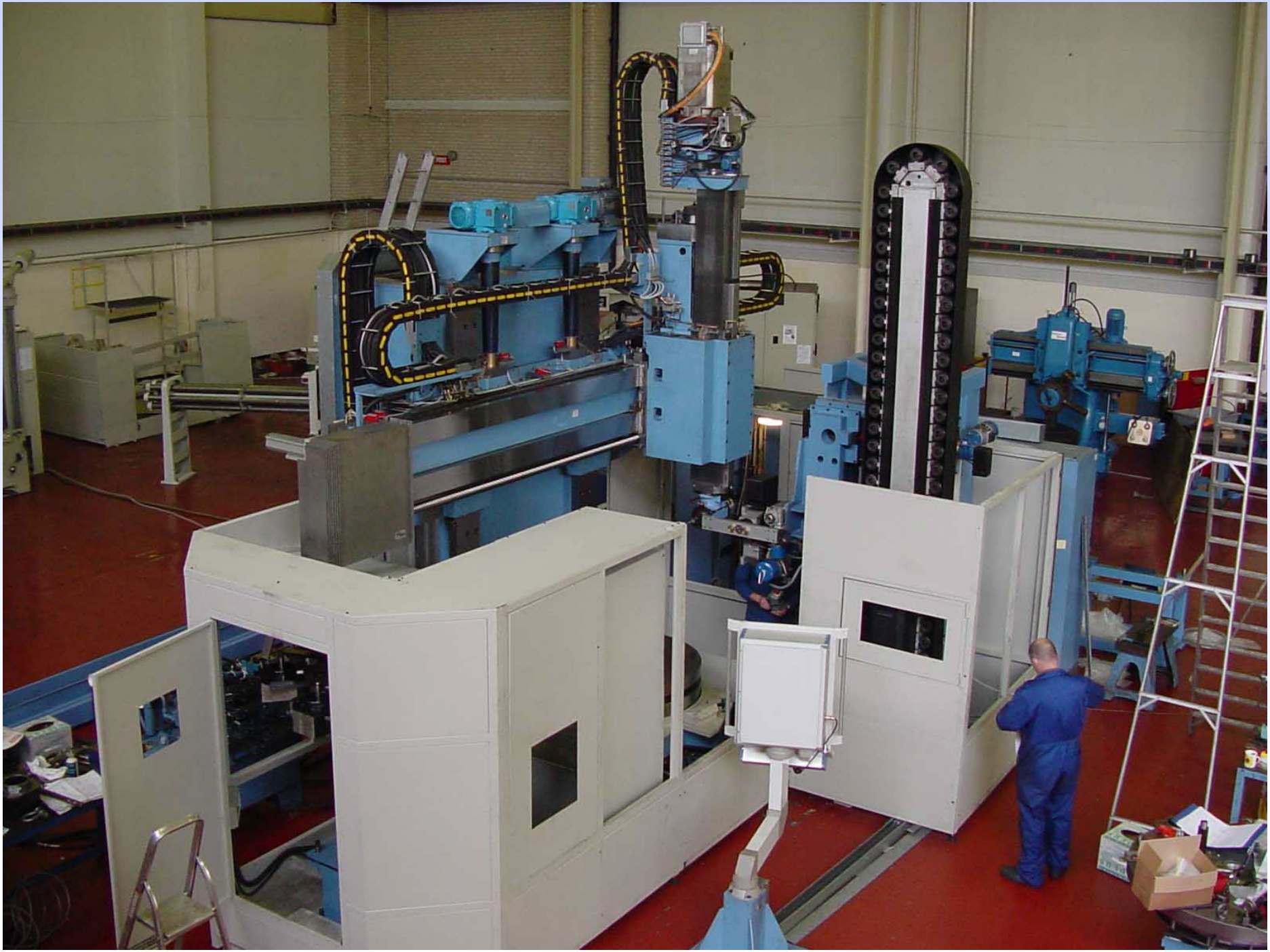
To help fund the W&B future a 10 year exclusive license to produce the Millennium was sold to Danobat, a massive machine tool group in Spain.

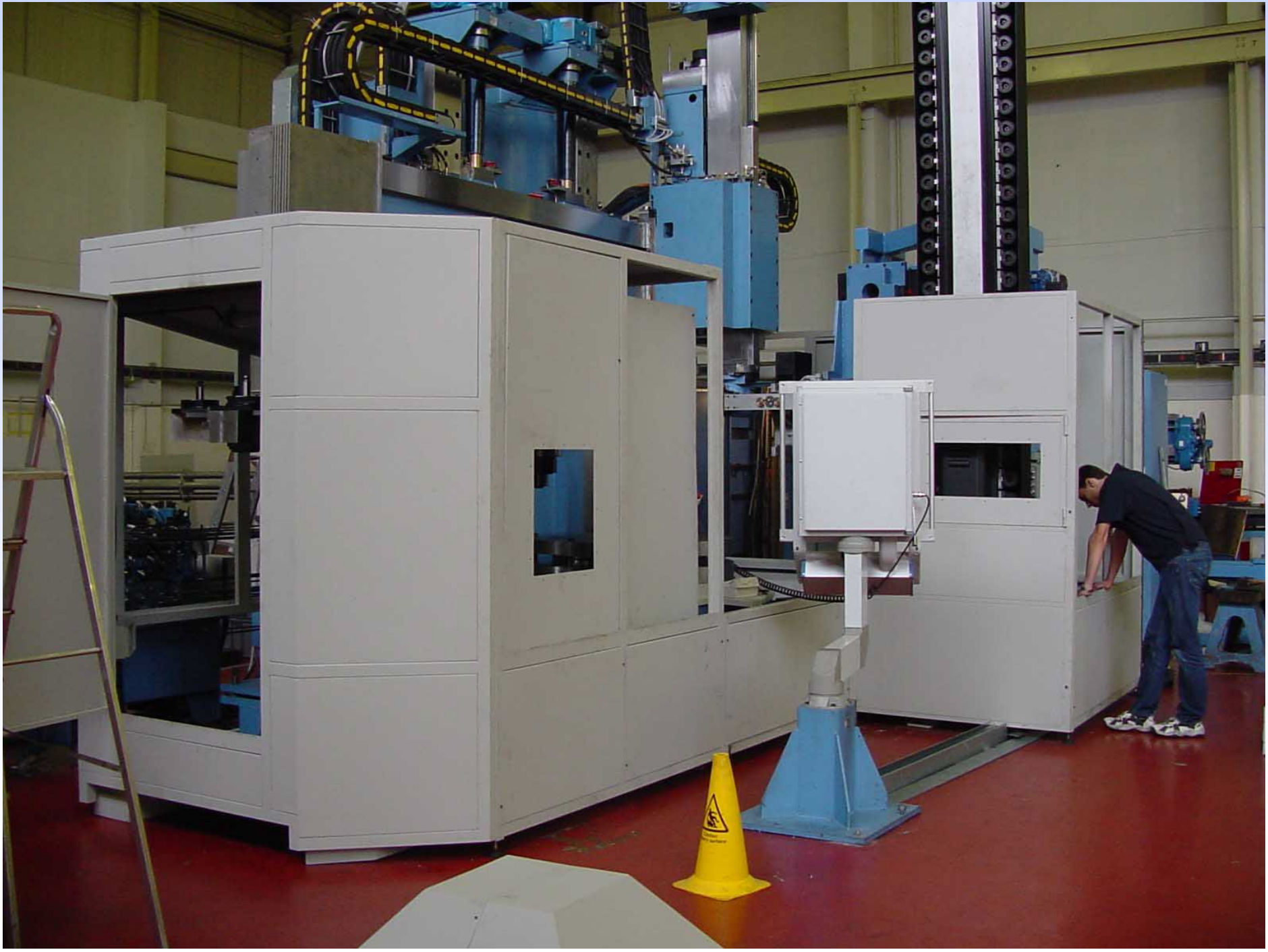
The last Millennium machines built in the UK were built in the new Warwick facility. These were two very high specification machines designed and built for Kaiser Rockwell Collins the major defense contractor in America.

This was a total TURNKEY project to produce a major missile component previously produced on 34 machines

First three photos are these in build in the superbly efficient Warwick factory - ultimately destroyed by success!





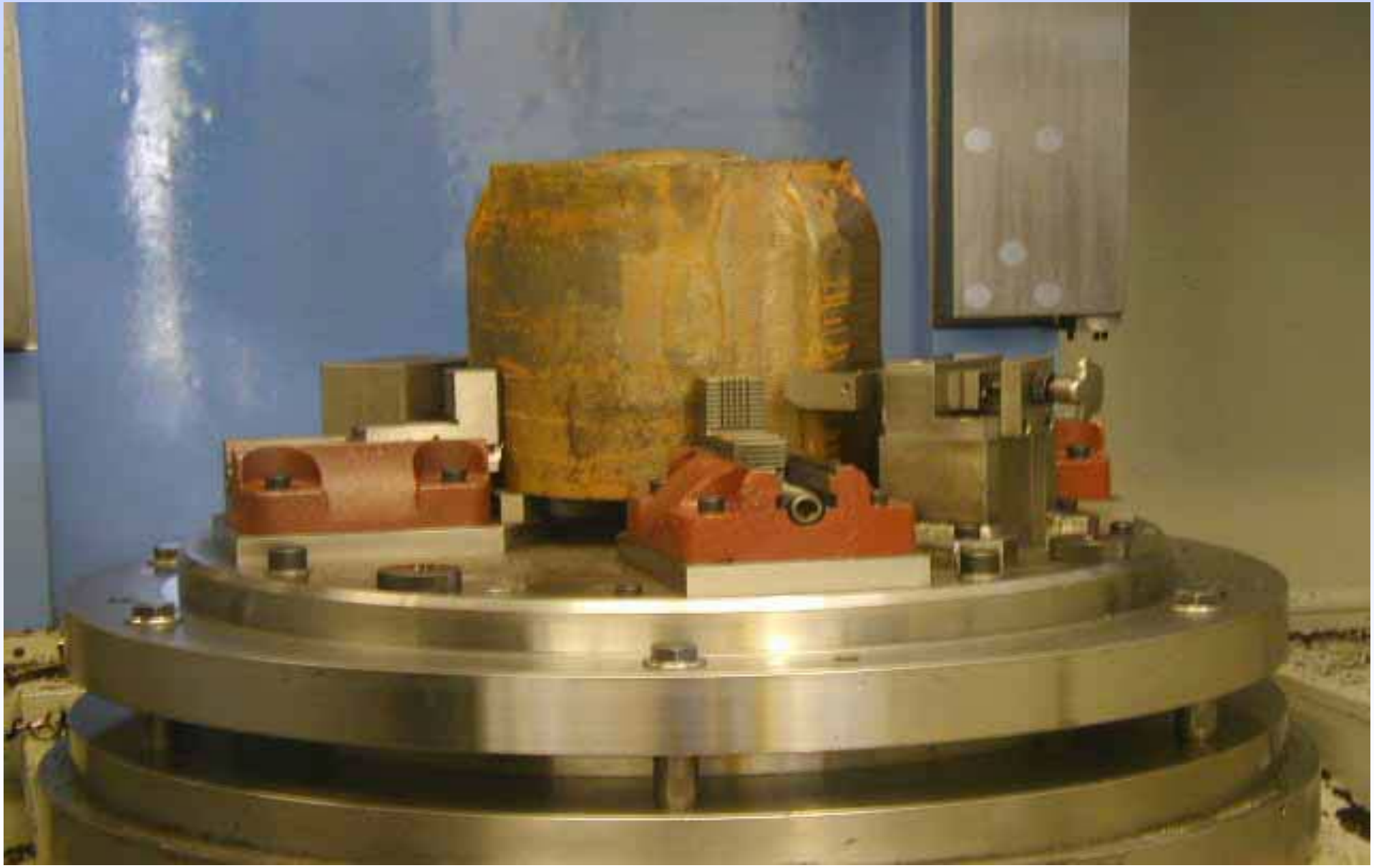




Vertical turning center for total production of a major rocket component



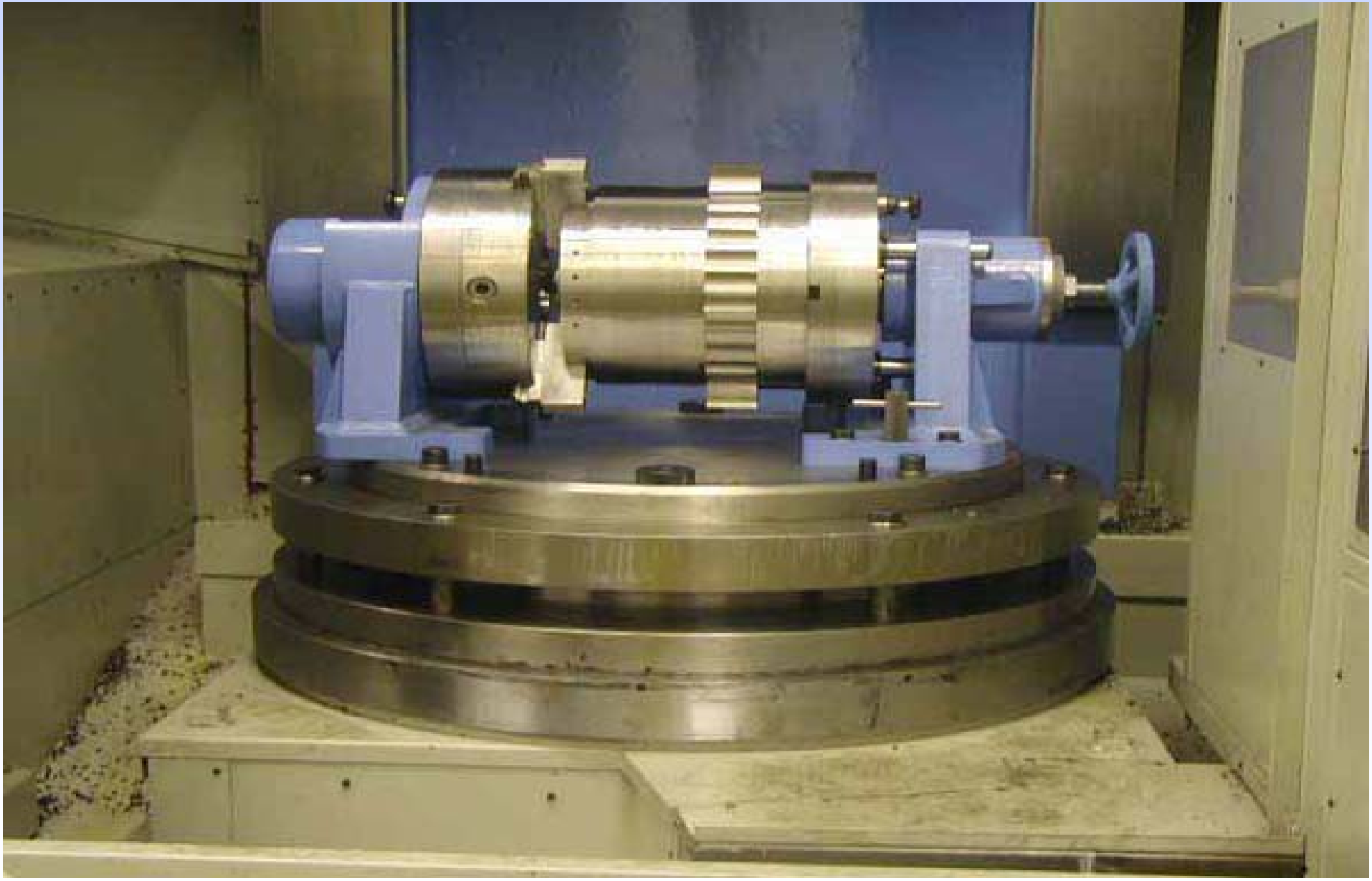
Machine installed and producing in USA



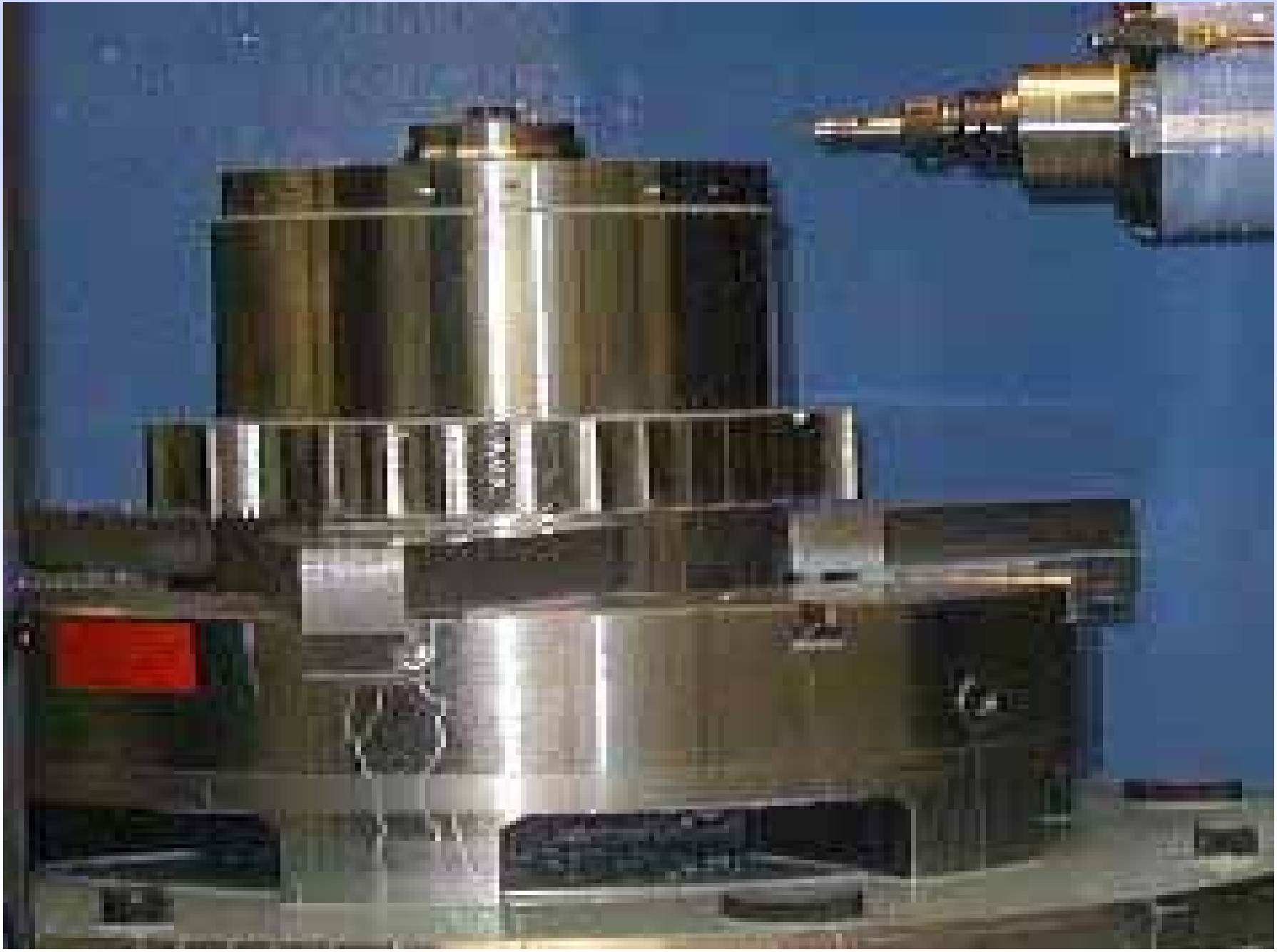
This machining process for Kaiser Rockwell started from a raw forging



It is a rocket component in 50 Rockwell material



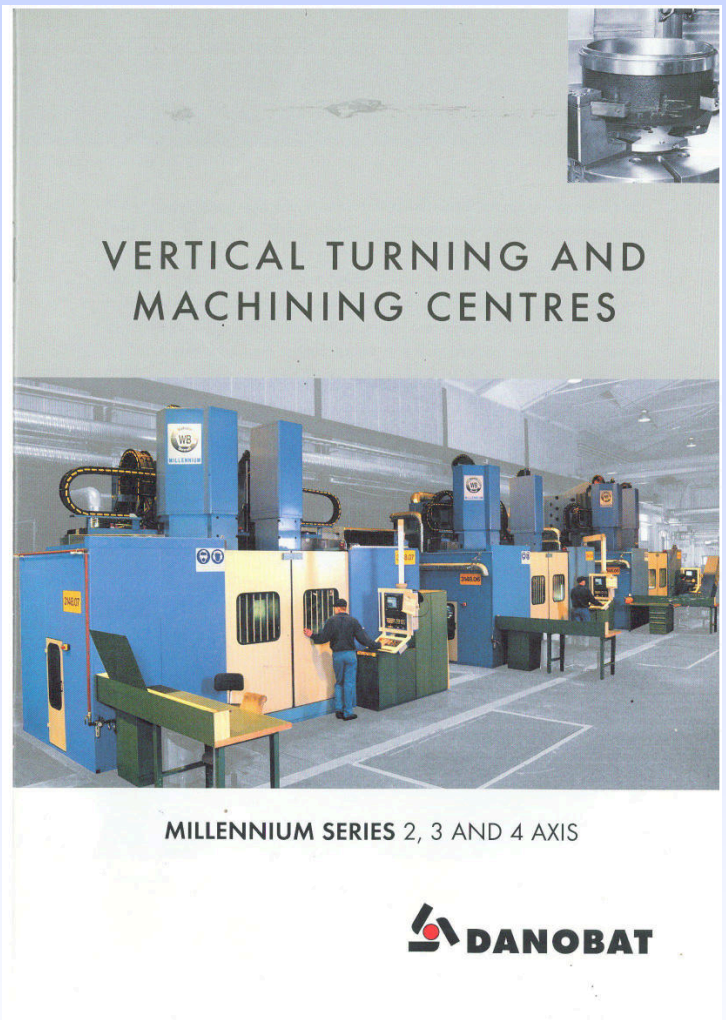
using 5 different fixtures this component was produced complete on one machine



this process had previously needed more than 20 machines


ady for Inspection!!!





Webster & Bennett International Limited was formed in 2002 to acquire the business of the old company. The new company had inadequate capital and to help fund a period of stabilisation the Millennium design license was sold to Danobat together with a marketing agreement. One year later this agreement was cancelled by Danobat so W&B started to design new lower cost models, the Evolution range using existing main body castings.



In 2004 the Evolution “Classic” range was developed. In 2006 the Evolution and Revelation “2PB” models were introduced.

In 2007 the development of the Evolution and Revelation models continued with the introduction of the “Xtreme” models.



Done

Just at this time Webster & Bennett were negotiating the sale of the first Evolution to Anglo Belgian Corporation, manufacturers of diesel engines. ABC is the main manufacturing company in an large Belgian/Ruwandan industrial group OGEPAR SA.

Ogepar had other machine tool interests and was attracted to the possibilities of growing the Webster & Bennett business.

Within a few weeks, on the advice of ABC Diesels, Ogepar, Ogepar had acquired the company gauaranting financial support to enable the spectacular growth that was achieved and shown in the later slides 124 and 125.. *Unforunately that was not the end of the story*



EVOLUTION 48 IN THE WARWICK FACILITY



EVOLUTION 2 IN GERMANY

Innovative Fixture Transfer Systems for time saving precise off machine set up had been started on Millennium machines and now advanced on Evolution, Revelation and Aeroturn machines


16t
Webster
WB
England
Bennett
EVOLUTION


WB
EVOLUTION
Webster
WB
Bennett
EVOLUTION

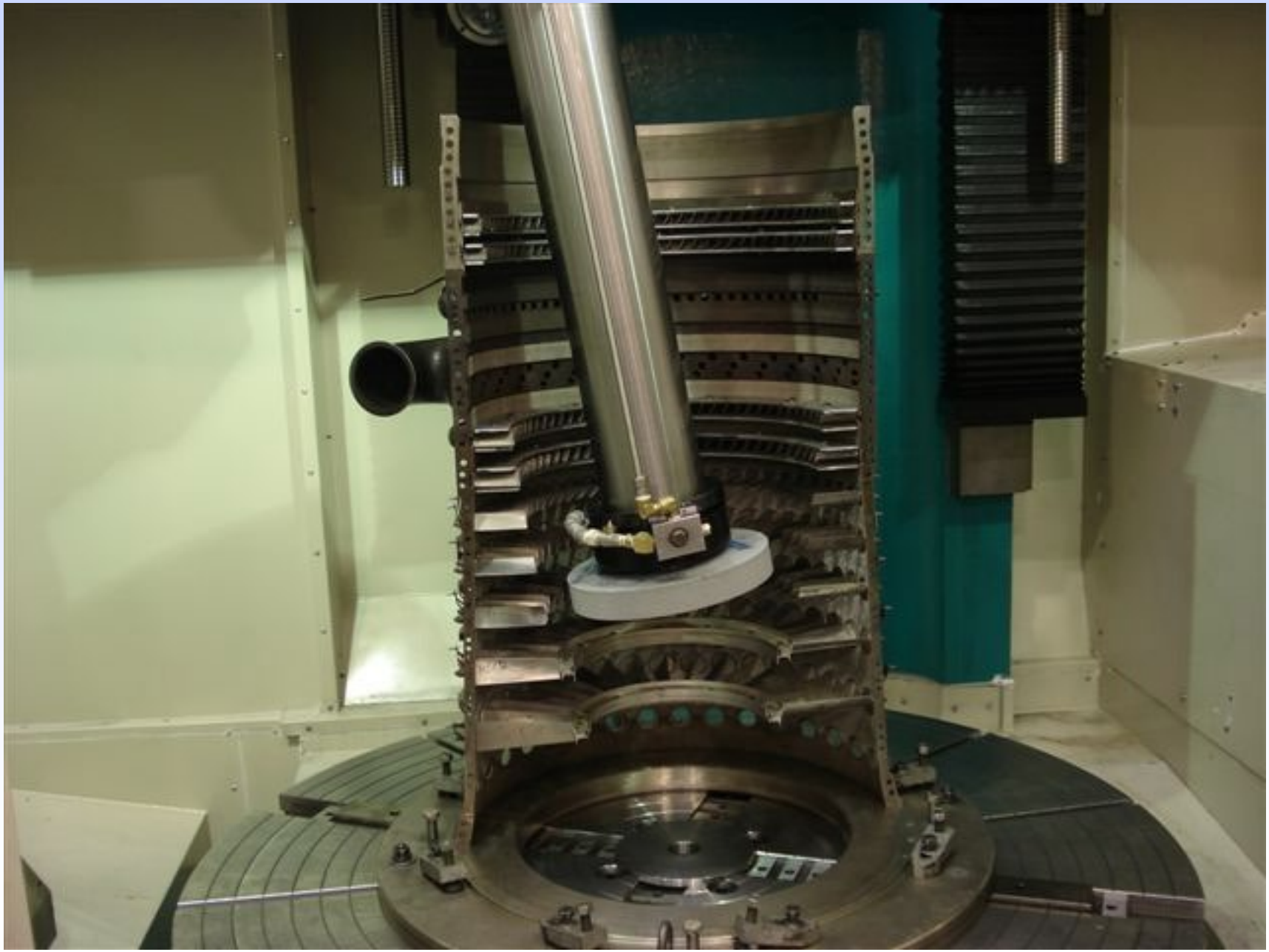
MEETING THE DEMAND FOR SOLUTIONS TO COMPLEX PRODUCTION PROBLEMS

Our experience with the Millennium range, especially the mega complex machine built for Kaiser Rockwell Collins, gave us confidence to take on more difficult problems. MTU Canada wanted to improve productivity and reduce tooling costs while grinding repaired engine rings still fixed in the assembly. A CNC swivelling ram was the answer



A second ram, for grinding, with CNC angular positioning.


7
AXIS
Webster & Bennett
Total Production Centre
WB
EVOLUTION

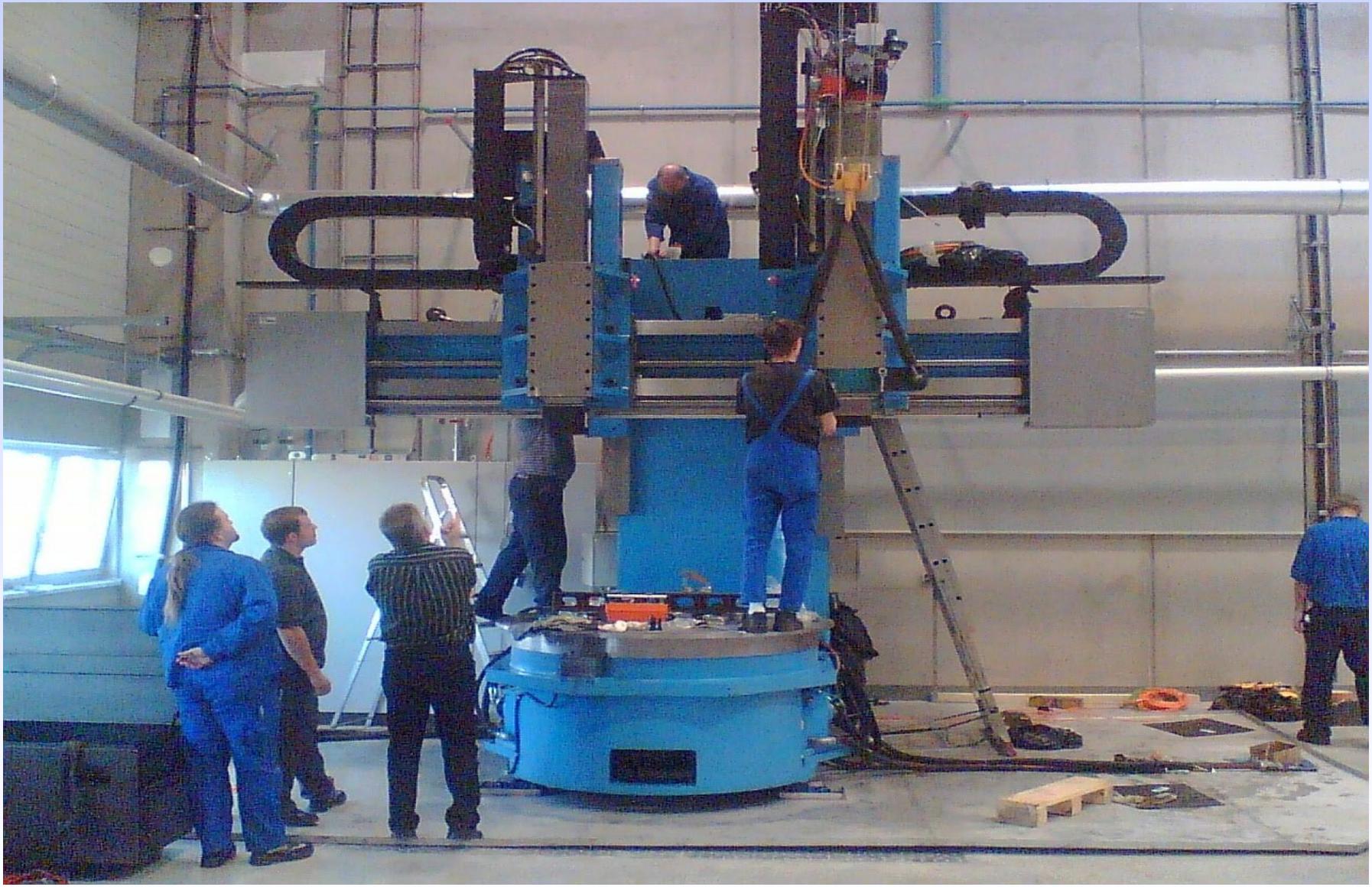


Programmed ram angle changes to avoid wheel angle re-dressing - saves production times and costs

ANOTHER COMPLEX MACHINE REQUIRED A HIGH PRECISION ELLIPTICAL TURNING CAPABILITY THAT HAD TO BE MEASURED IN CYCLE. ADD TO THIS THE NECESSITY FOR AUTOMATIC CAPTO TOOL CHANGING AND AN OFF MACHINE FIXTURE SETTING CAPABILITY THAT WAS PRECISE WHEN CLAMPED TO THE MACHINE REQUIRE NO FURTHER SET UP



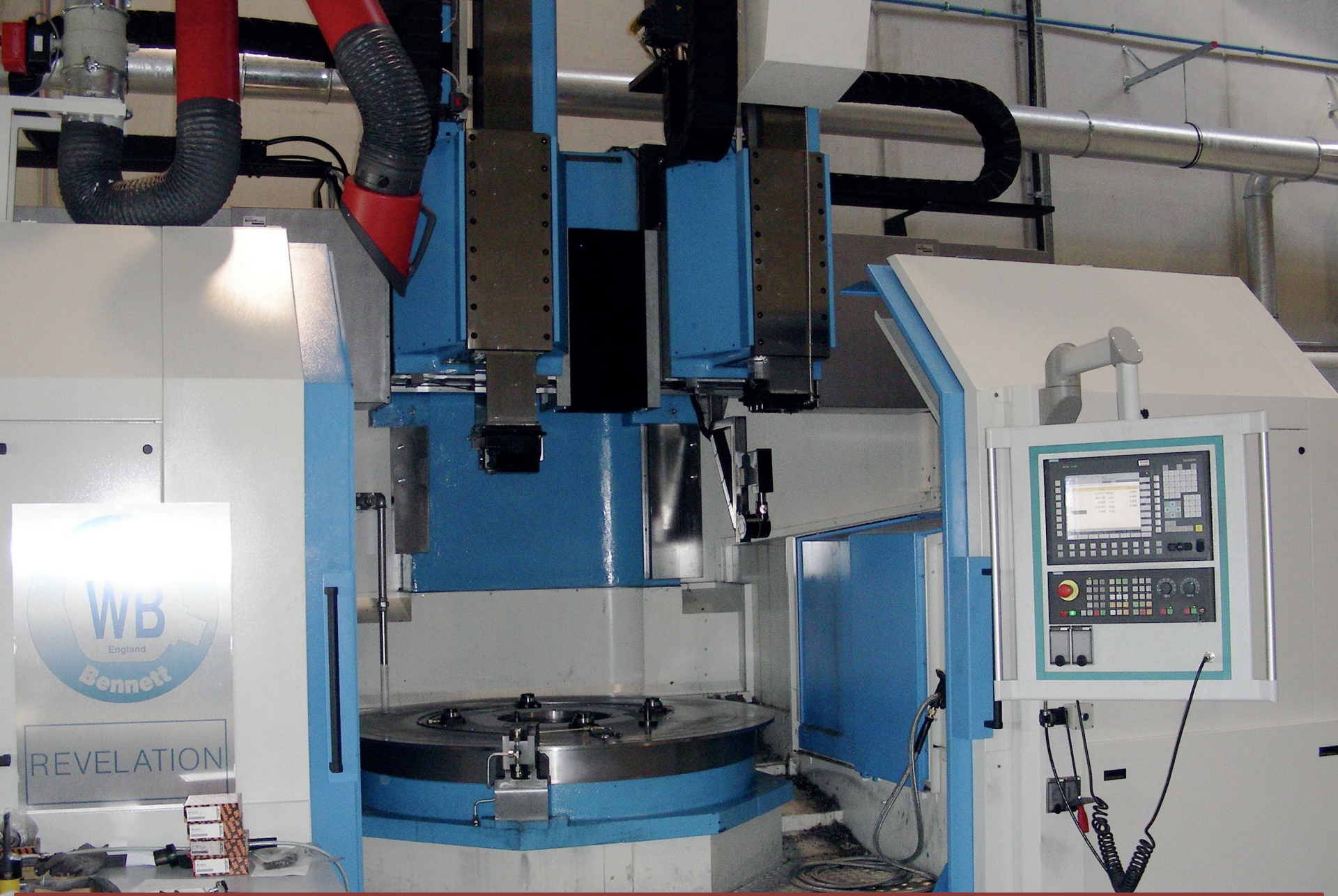
A VERY COMPLEX REVELATION IN NEW FACILITY IN GERMANY



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



REVELATION 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)



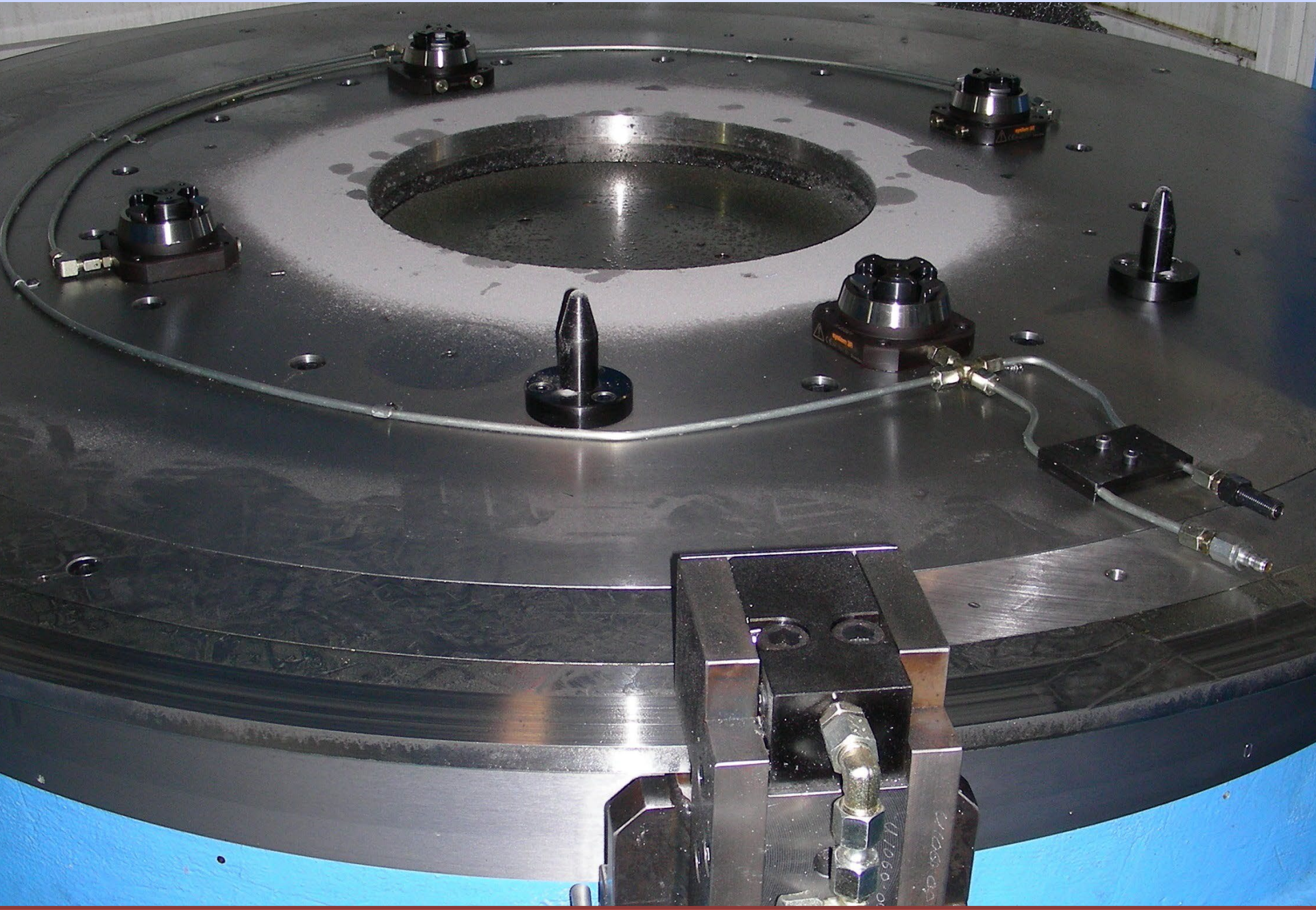




COMPACT ELLIPTICAL TURNING HEAD - AUTO CAPTO TOOL PICK UP



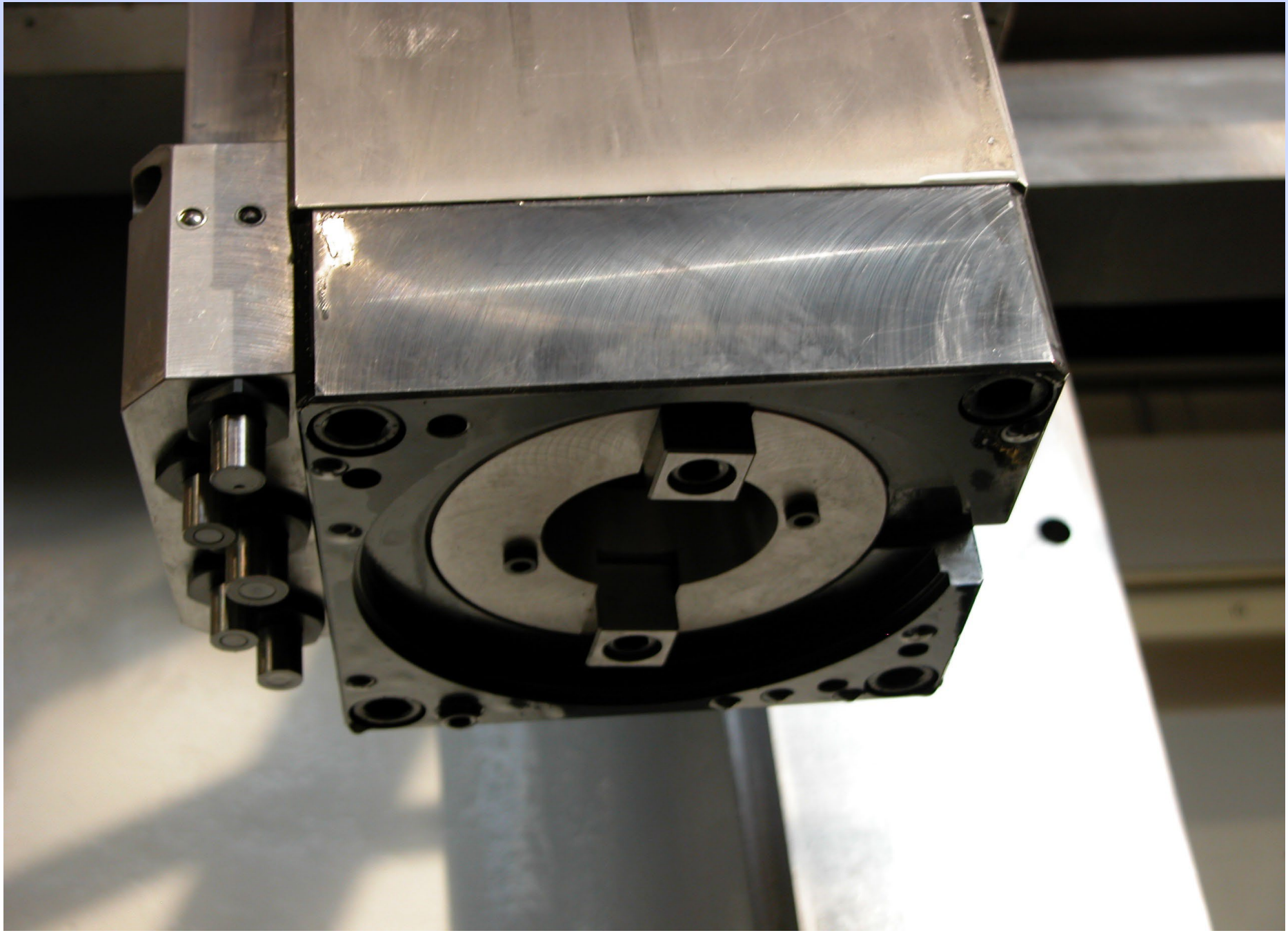
CLICK ON ME FOR ELLIPTICAL ACTION

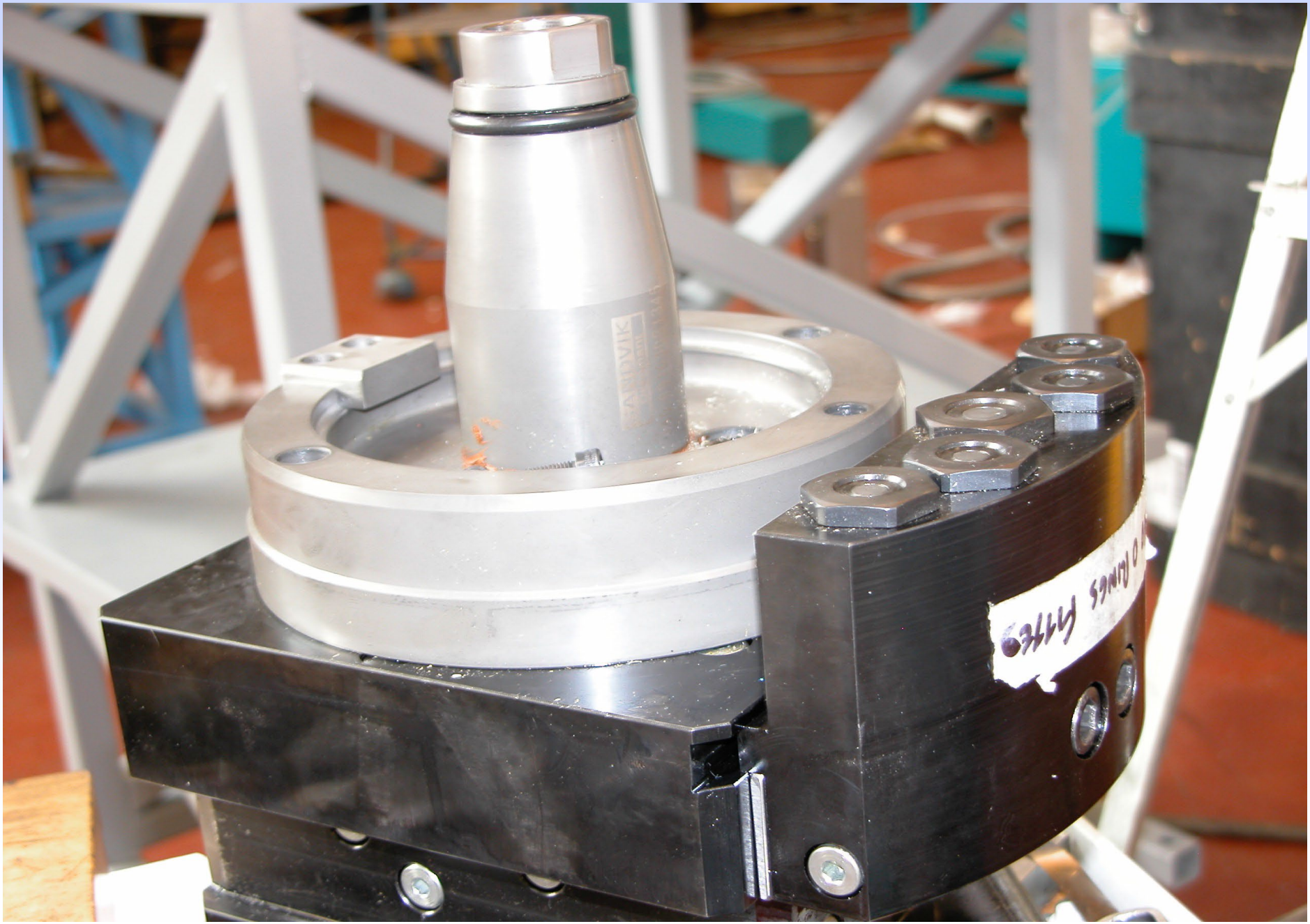


PRECISION MANUAL PALLET SYSTEM FOR OFF MACHINE SET UP

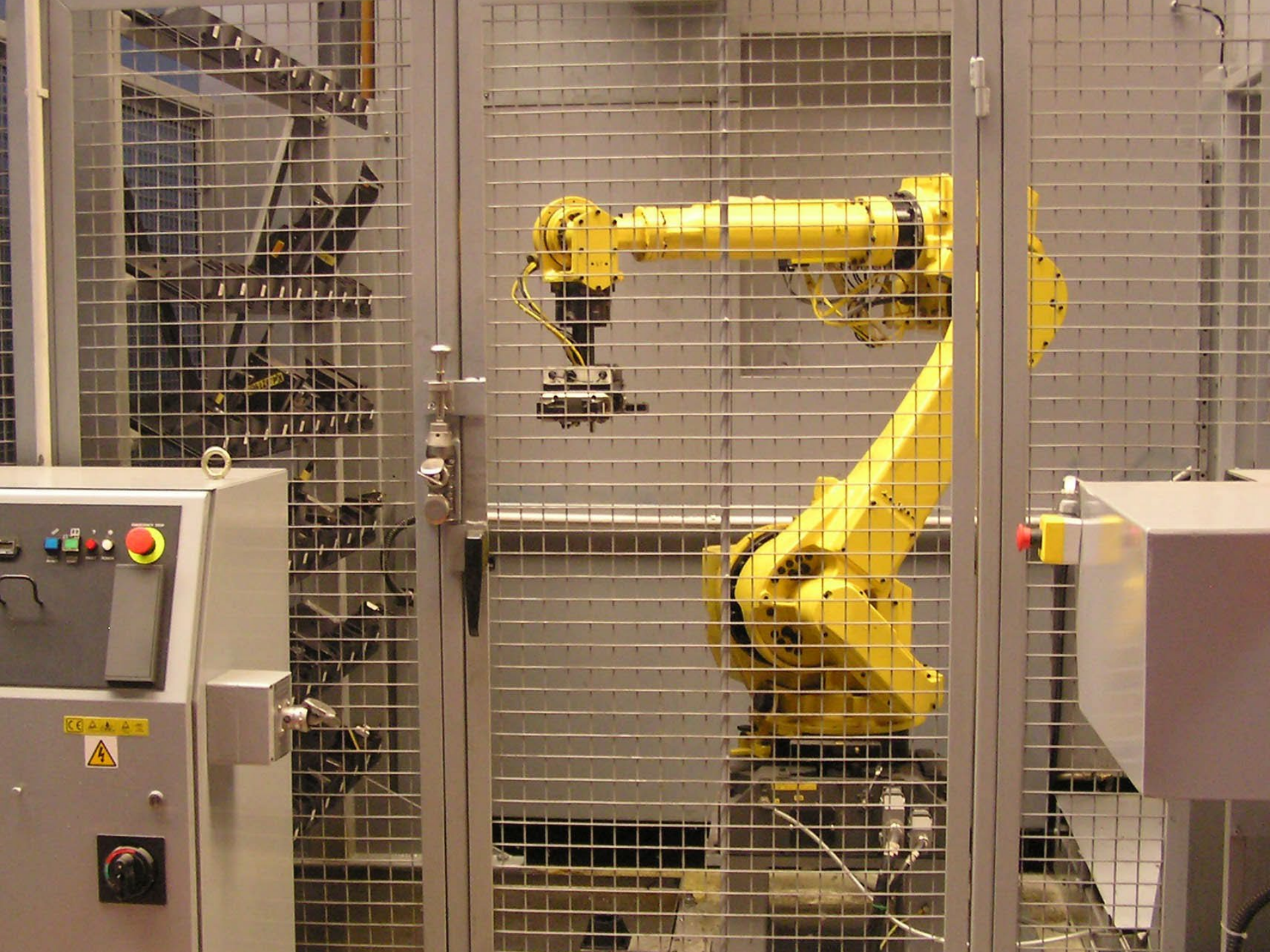

Webster
WB
England
Bennett
REVELATION
Plasmaspäne

We started to produce quite a few Capto tooling machines. These require complex additions to the ram nose. Coupled with this we introduced the option of robot tool loading to offer significant gains in productivity and reduce the need for complex mechanical tool magazines.






SANDVIK
Coromant
130



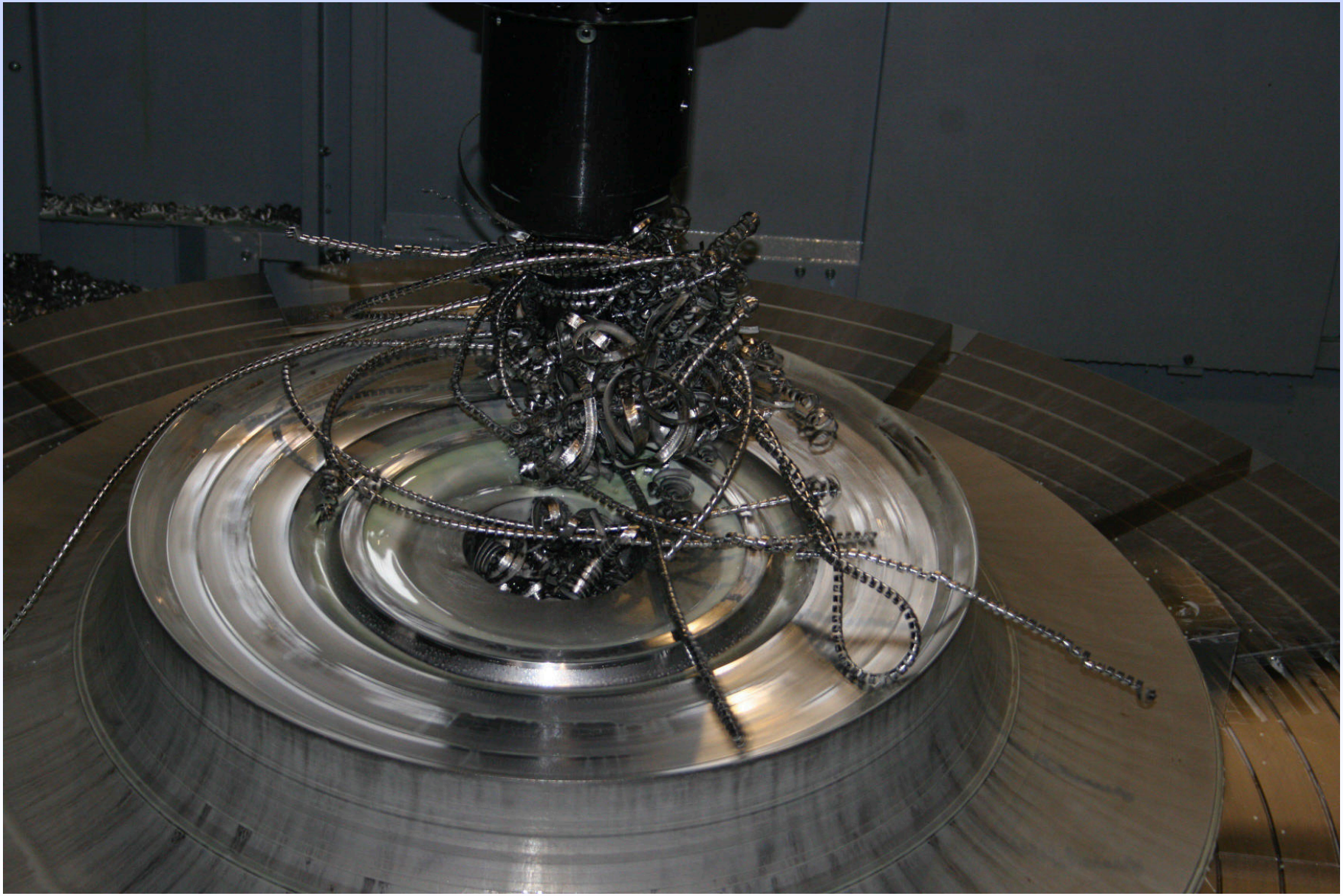

14
15
16
4
5



3 EVOLUTION 2 WITH ROBOTS IN GERMANY

Customer test day





Customer test day



Customer test day

ROBOT TOOL LOADING



1500sq.m - perfect machine tool facility

- An efficient use of space in the Warwick facility and efficiency of operation enabled us to develop and grow again, just had we had 10 years earlier in Coventry.
- We had, and still have, quality suppliers and this enabled us to use Warwick as an Assembly Hall. In 2007 we were close to achieving our 20 machines in a year target



ASSEMBLY IN WARWICK



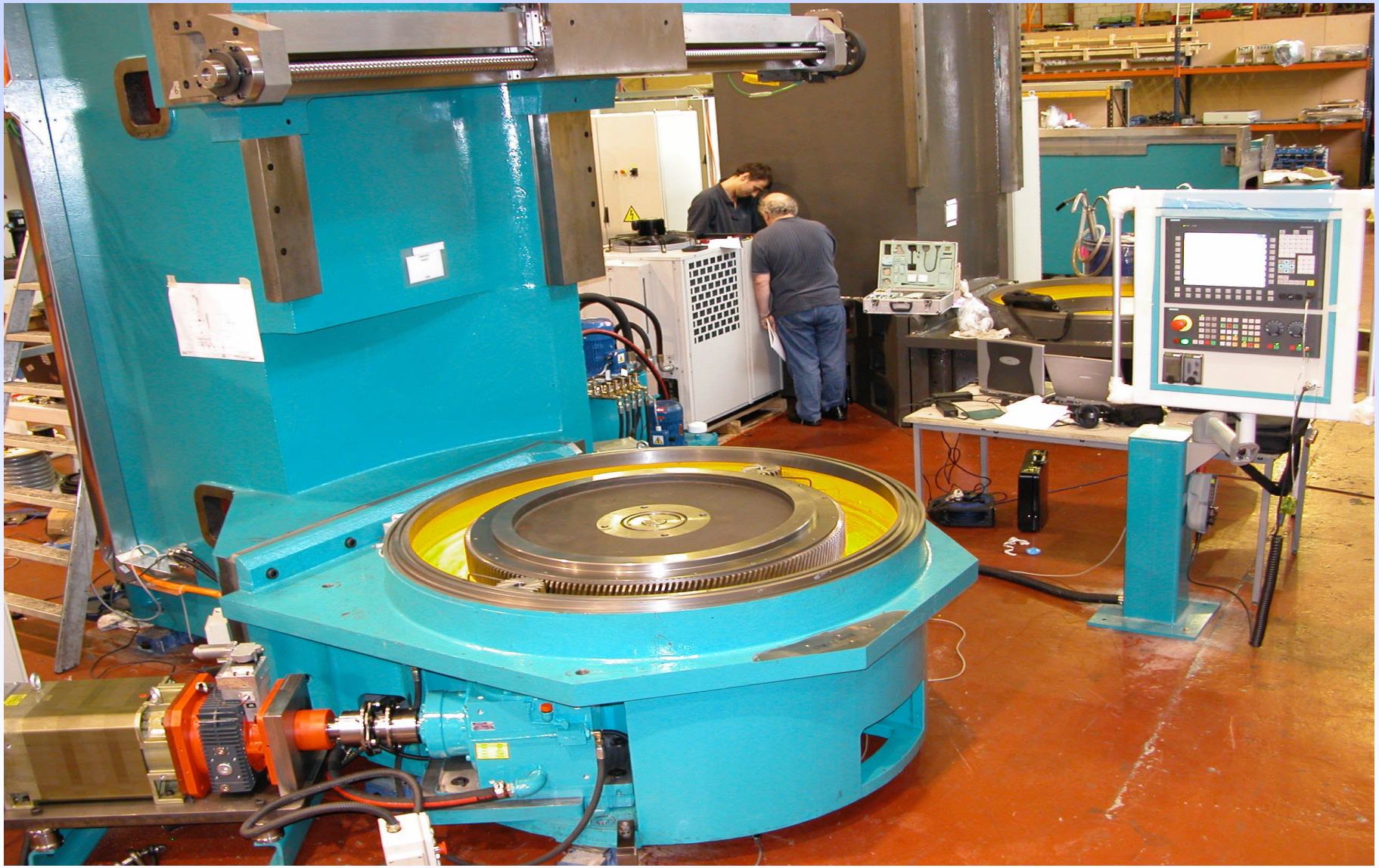
ASSEMBLY IN WARWICK



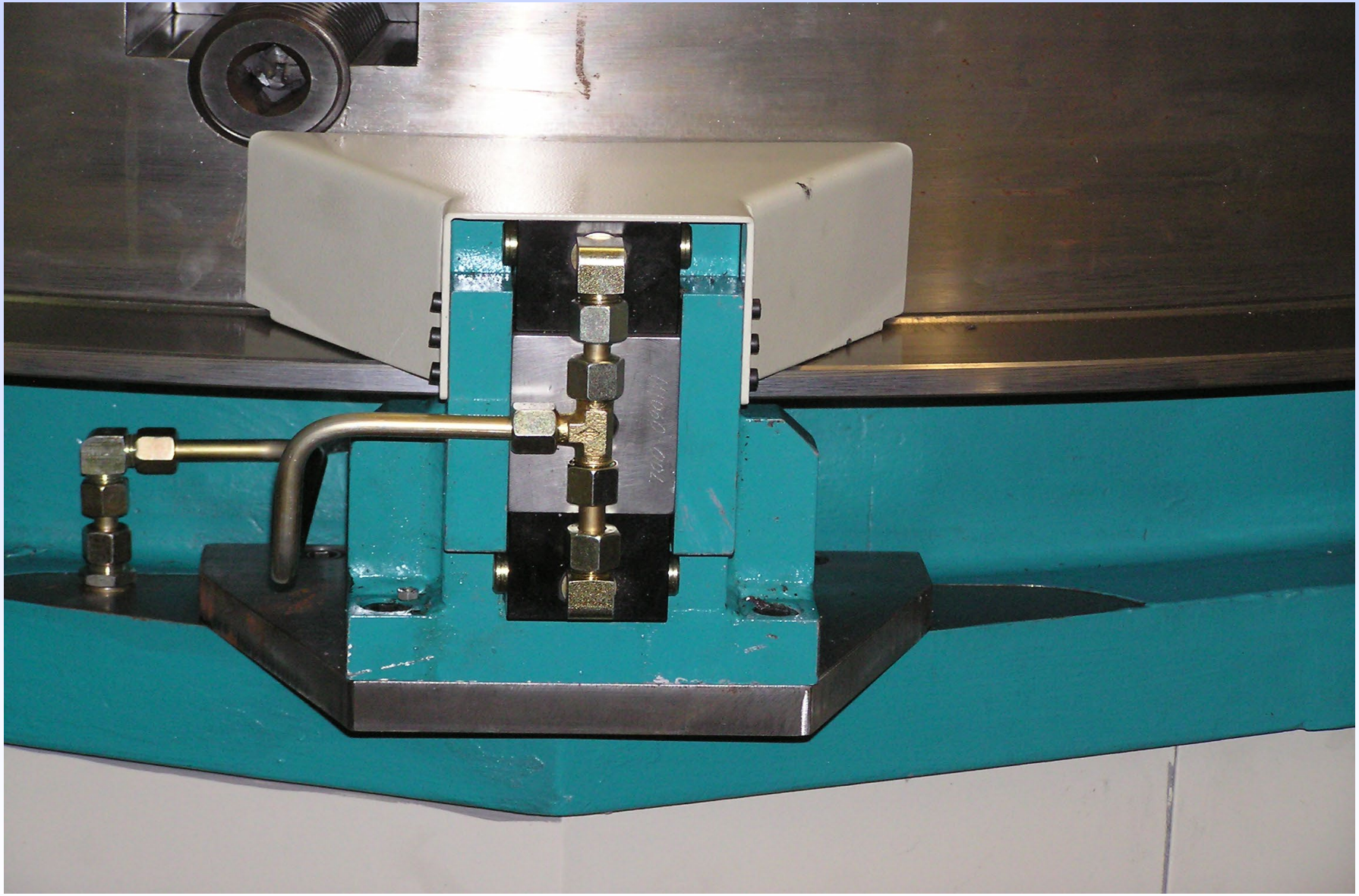
Electrical assembly



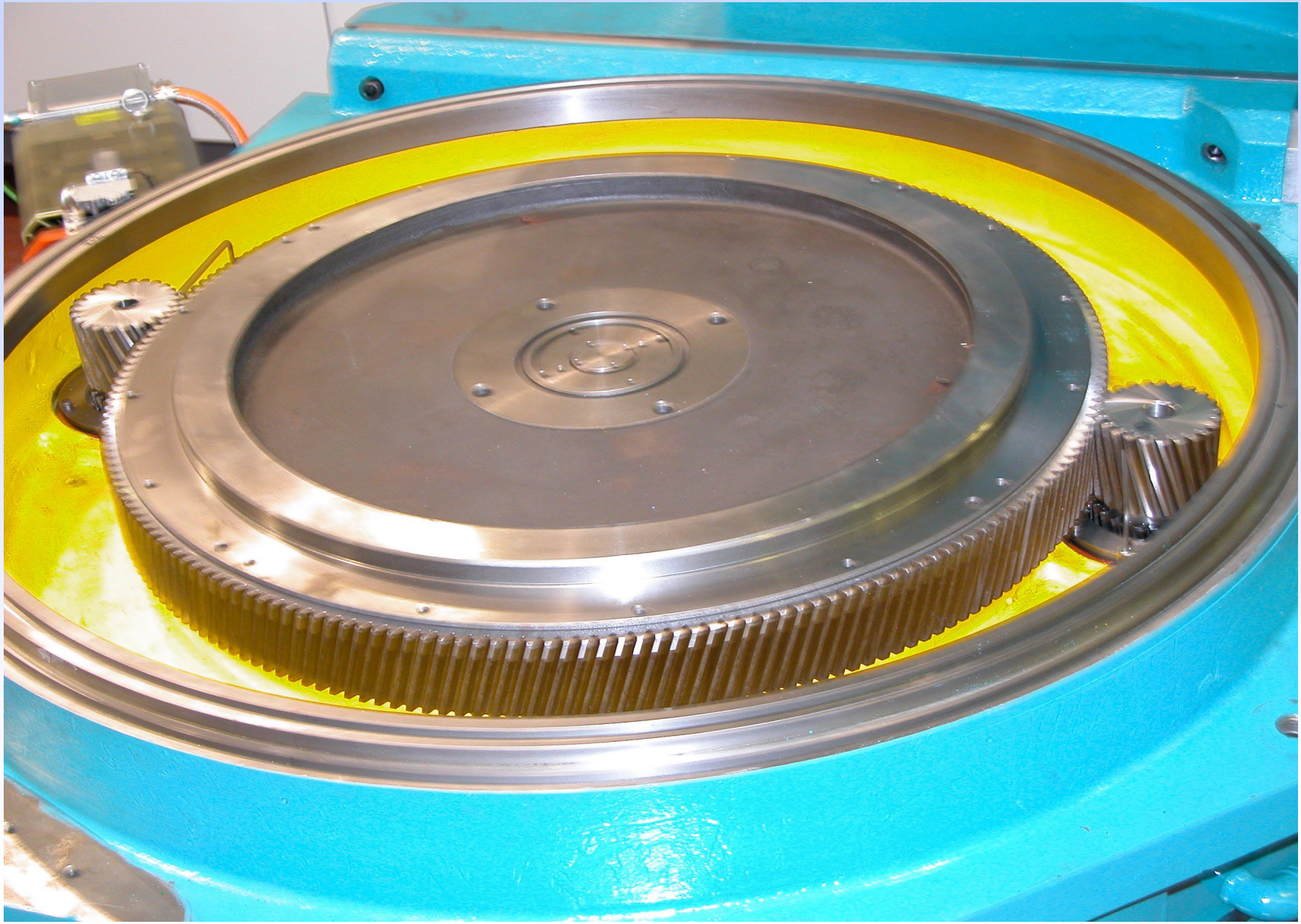
Final assembly



ASSEMBLY IN WARWICK



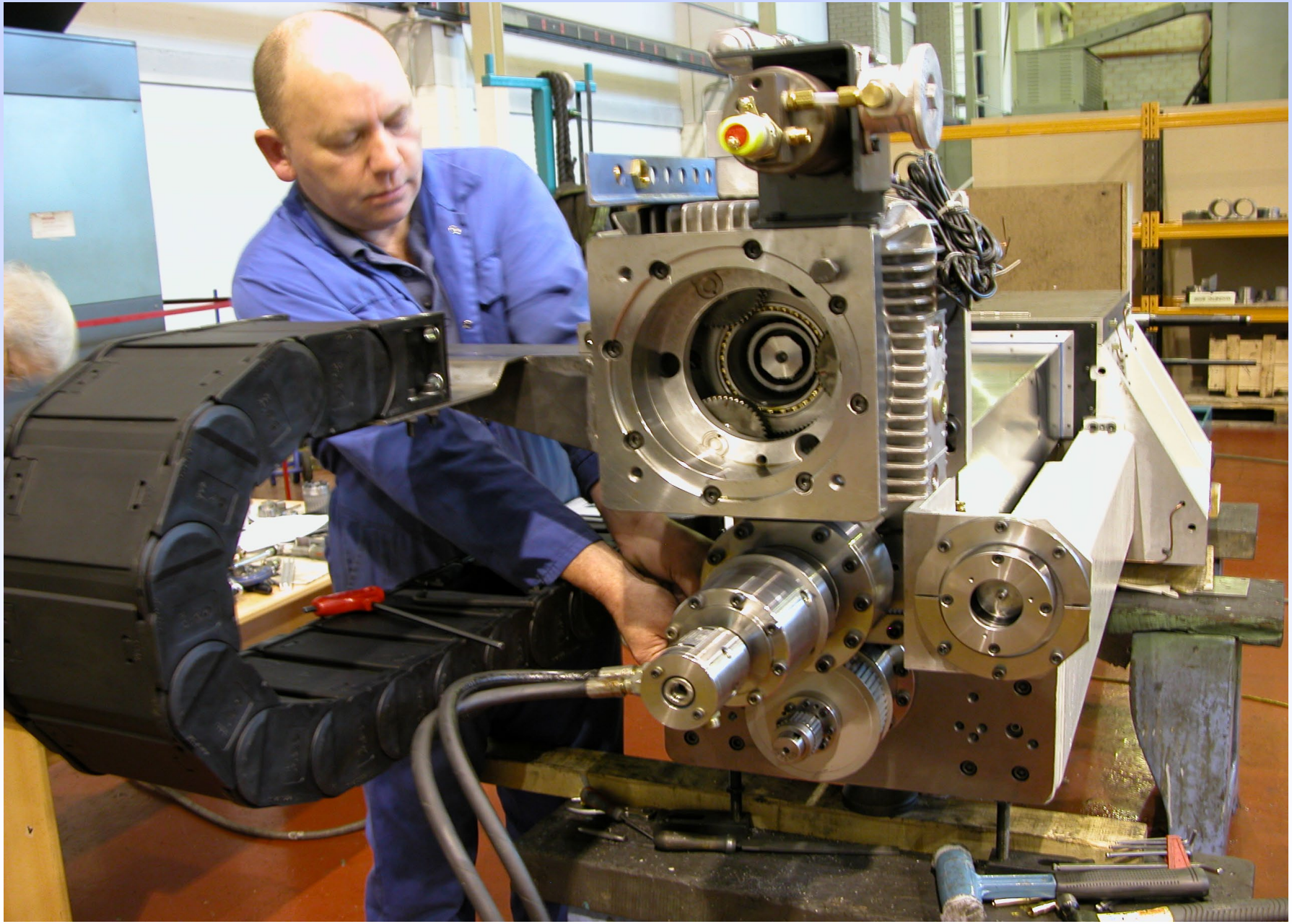
SUB ASSEMBLY IN WARWICK



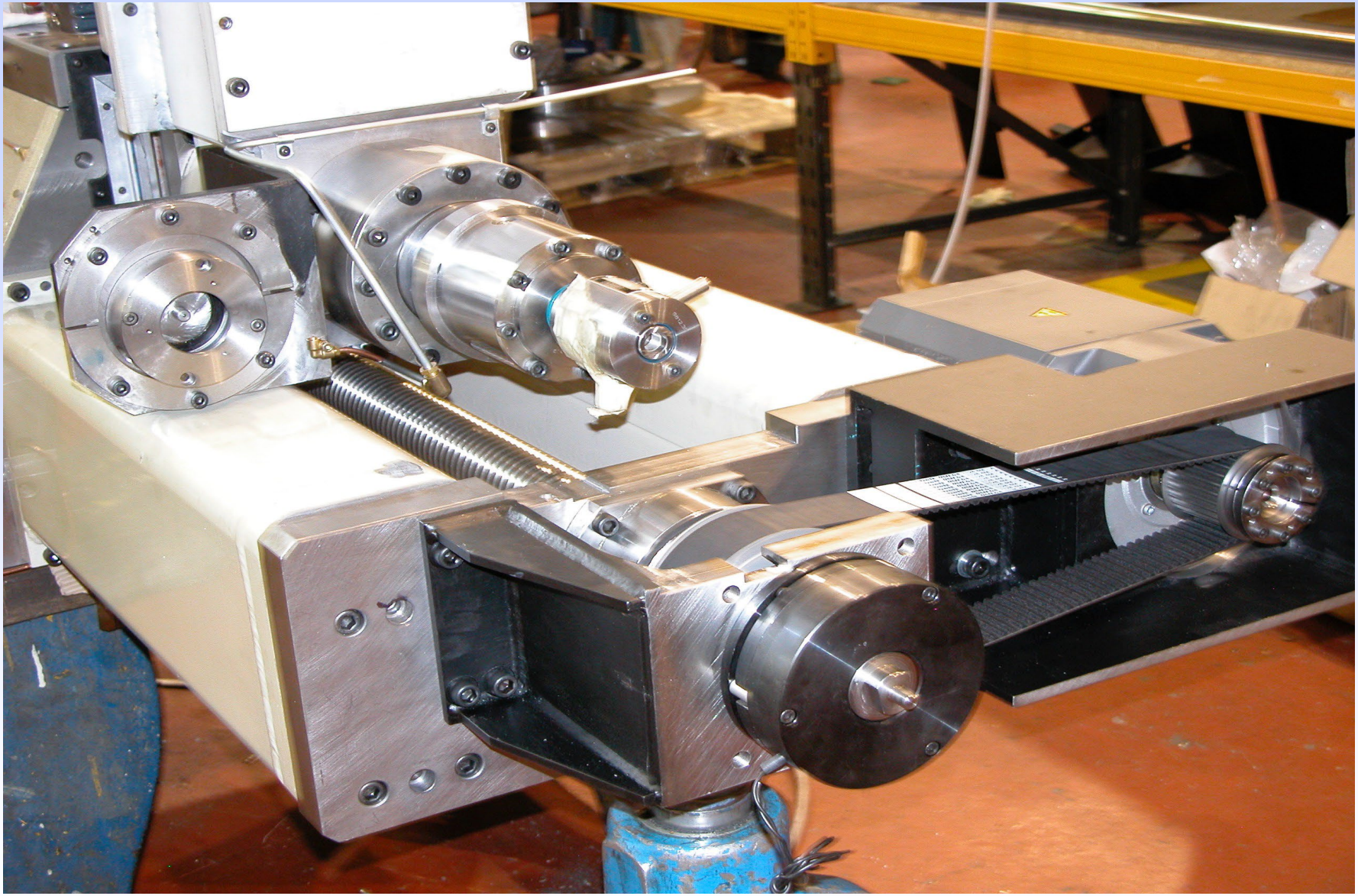
SUB ASSEMBLY IN WARWICK



SUB ASSEMBLY IN WARWICK



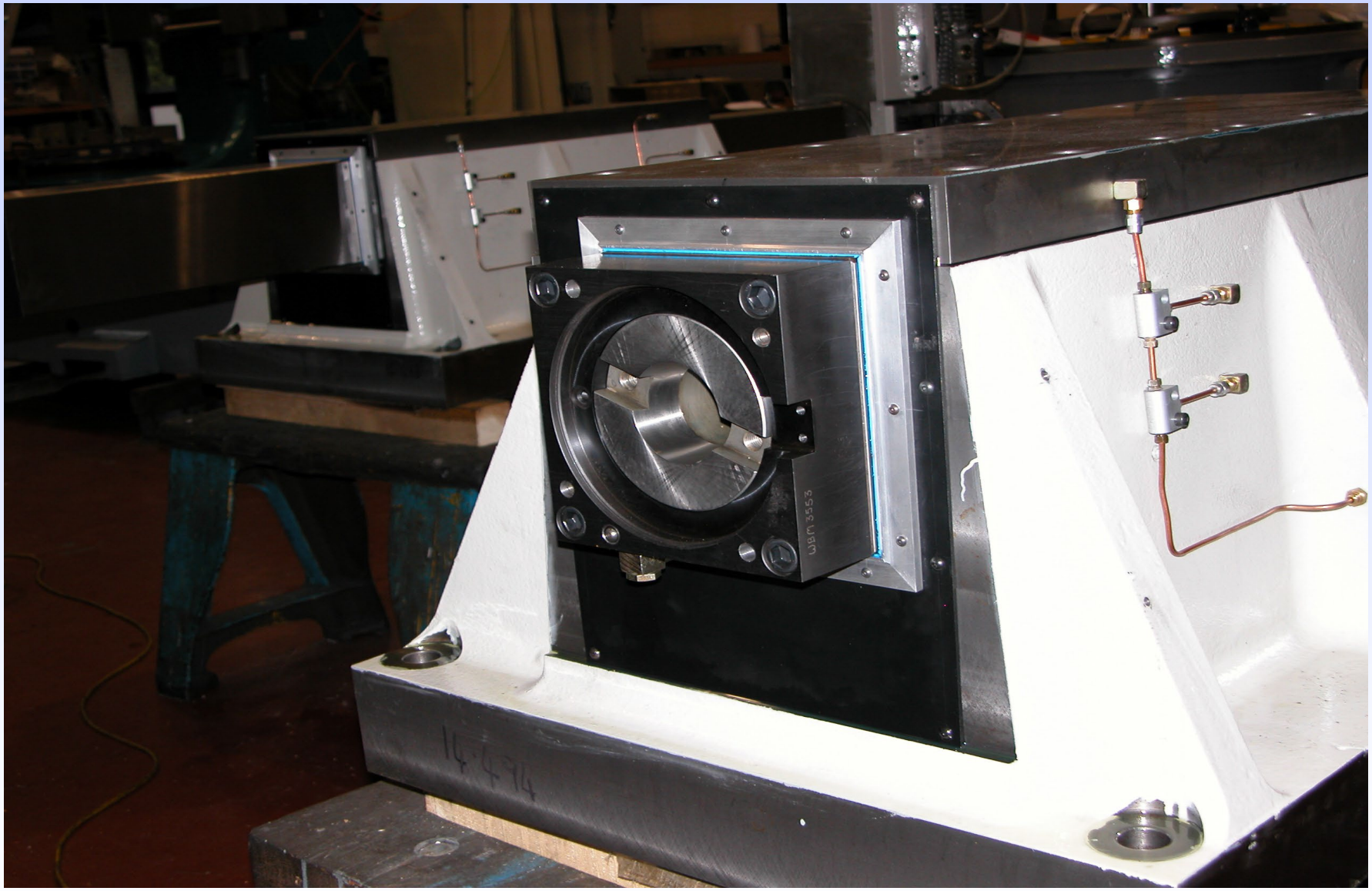
SUB ASSEMBLY IN WARWICK



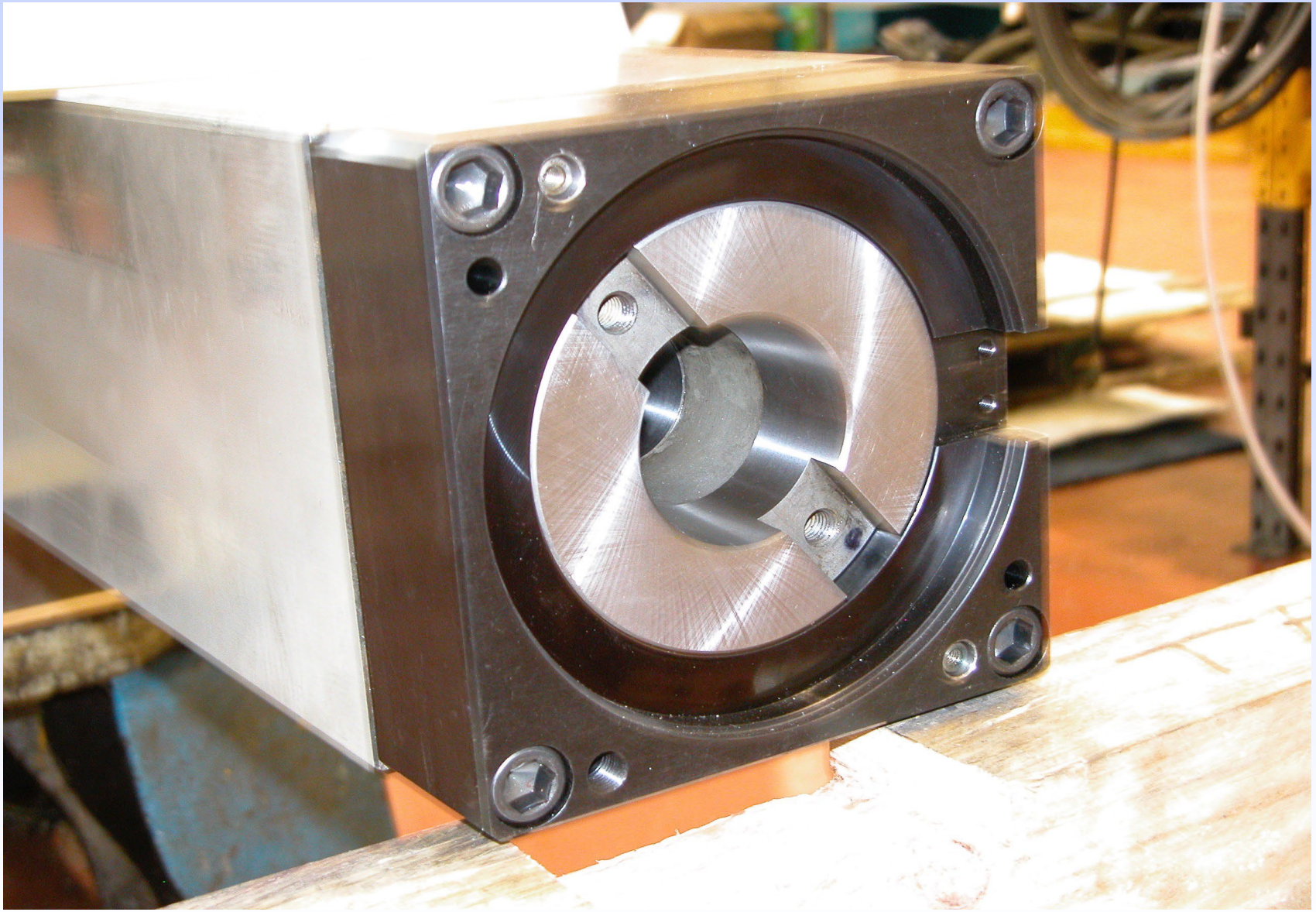
SUB ASSEMBLY IN WARWICK




FIRE EXIT
CORROTEX



SUB ASSEMBLY IN WARWICK



SUB ASSEMBLY IN WARWICK



SUB ASSEMBLY IN WARWICK



SUB ASSEMBLY IN WARWICK




FIRE POINT
Vitrex


16t DEMAG 5901/89


Webster & Bennett Ltd
Mitutoyo
FB05

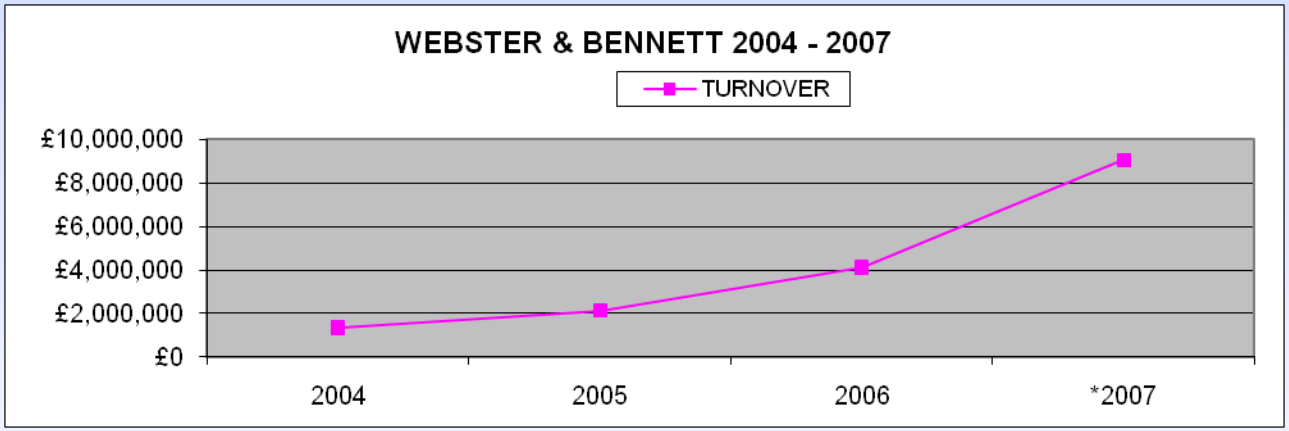
Growth 2004 – 2007

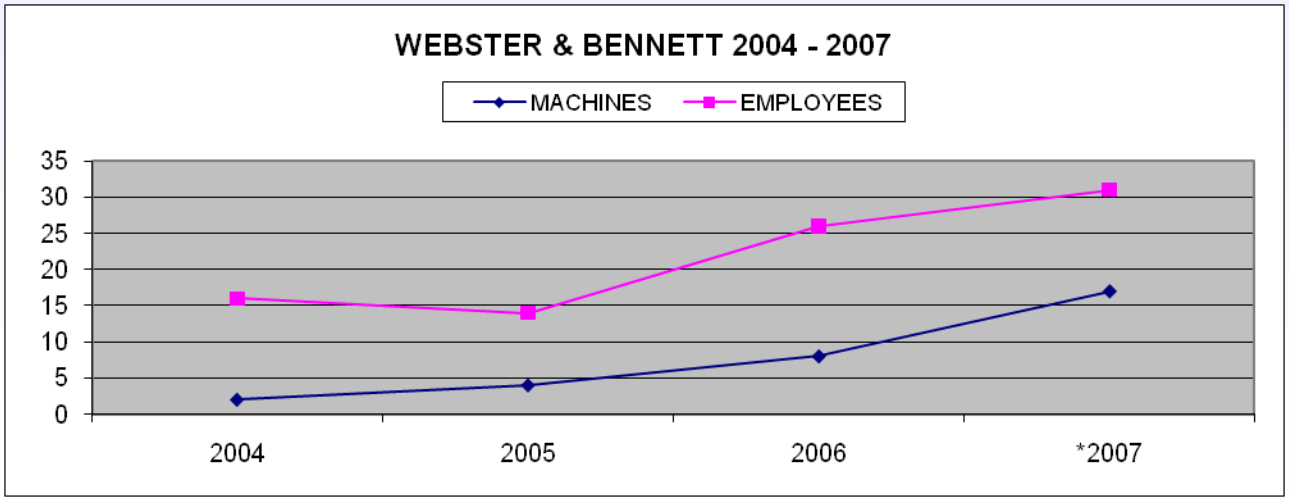
2004		
ABC	Belgium	Evolution
KBB	Germany	Evolution
2005		
London Underground	England	Evolution
Weaver Mabbs	England	Evolution
Wheels India	India	Evolution
Ostlandske	Norway	Evolution
GECAL	Scotland	Evolution
2006		
Siemens Napier	England	Evolution
Silcoms	England	Evolution
Varco 1	Holland	Evolution
Kownatski	Germany	Evolution2
Ohresser	France	Evolution
Elliott Turbo	England	Evolution
Siemens E1	Germany	Evolution2
Siemens E2	Germany	Evolution2

2007		
Mannstaedt	Germany	Evolution2
Siemens E9	Germany	Evolution2
Waukesha	Scotland	Evolution
Lufthansa	Germany	Revelation
Titan 1	Nigeria	Evolution
Titan 2	Nigeria	Evolution
Egyptair	Egypt	Evolution
MTU	Canada	Evolution
Siemens R6	Germany	Revelation
Varco 2	Holland	Evolution2
Siemens R1	Germany	Revelation
Siemens R2	Germany	Revelation
Gardner Denver	USA	Revelation
Richardson	USA	Revelation
Excel	USA	Revelation
Caterpillar	India	Evolution2
Siemens R5	Germany	RevelationDC

2008		
Siemens R3	Germany	Revelation
Siemens R4	Germany	Revelation
Ohresser	France	Revelation
Excel 2	USA	Revelation
Ostlandske 2	Norway	Revelation
Varco 3	Holland	Revelation
Doncasters	Wales	RevelationZC

YEAR	MACHINES	EMPLOYEES	SALES	TOTAL CASH	CASH LOCKED	CASH FREE	NPBT
2004	2	16	£1,341,071	84,929	0	84,929	98,658
2005	4	14	£2,138,079	9,644	0	9,644	20,311
2006	8	26	£4,114,818	2,191,312	1,999,571	191,741	-153,867
*2007	17	31	£9,055,000	325,000	0	325,000	1,000,000





		MANAGING DIRECTOR				
		Iain Exeter			*Installations*	
		Nicola Stokar von Neuforn			*Planned Maintenance*	
					Warranty breakdown	
ENGINEERING & QUALITY MANAGER	SALES	PRODUCTION	PURCHASING		CUSTOMER CARE MANAGER	FINANCIAL MANAGER
RICHARD MARTIN					DAVID NORRIS	DAVID SPRASON
					Monika	Linda
Chief Designer	Applications	Mechanical Assembly	Electrical Assembly		Spares & Service	
Joe Hughes	Geoff Cook	Steve Thompson	Petr Gabrhelik		Paul Stokes	
Grainger	Vernon	Bellingham	Cechman		Jackson	
Abbas		Cotter	A.N.Other		Charlesworth	
	Gerdes	Evans			Sharp	
	Mason	Foster				
		Jenkins DG			Farmer	
		Jenkins DD	Software			
		Jenkins D			Erwin Dunke	
		Johnson	Jim Adams		Andreas Langer	
		Leeson	Breach			
		Macnamara	Mason			
		Richards	Frost		Maintenance Service	
		Thorpe			Corporation USA	
		Wilson				
					Siemens CNC support	
		Adams			Fanuc CNC support	
		Dryden				
These are the sub contract companies or personnel we are using						

Such rapid growth creates its own problems but Webster & Bennett developed strength and stamina during the difficult years and these problems are overcome. The company has learned to be lean and the organisation structure shows just how lean – a team of less than 35 achieving production of 17 machines with a sales value of £10,000,000 is a substantial achievement.

THE FUTURE (as we expected it in September 2007)

To maximise productivity in the UK, 20 – 24

machines annually, and to build additional machine in the sister company Pegard, in Belgium

To become again the best known and best loved builder of vertical turning centres

THE REALITY (as we found it to be at EMO in October 2007)

It became clear that for several months Ogepar had been working on an alternative agenda - to take this successful product to fill the capacity of its loss making machine tool builder in Belgium - Pegard. This was against the morality of Exeter's original sale to them and he would not support the move. The story of how they then destroyed the company is something never to be forgotten

showed what can be achieved when people are honest with each other and can trust each other.

Receiving this message today gives me encouragement knowing that I am right to want Wickman Bennett to be ready to support companies using Webster & Bennett, some producing vitally important products like Rockwell Collins. No matter what happens to W&B during the next few weeks Wickman Bennett will carry on the Coventry tradition to build vertical lathes, a tradition that has lasted since 1887

Iain Exeter
21/04/08





Subject: Webster & Bennett in administration
Date: Monday, April 21, 2008 17:23
From: hssuheim@rockwellcollins.com
To: Iain Exeter <iain.exeter@wickman-bennett.com>
Conversation: Webster & Bennett in administration

Hello Iain,
Sorry to hear about your problems with the new owners of Webster & Bennett and the potential closure of the excellent Warwick facility. I am very happy to hear that your new company will be employing the same excellent assembly and installation engineers that produced the Millennium machines for us six years ago. These very reliable and excellent machines that have been the key to producing some of our very complex Aerospace components we assemble and sell.
Also it is good to know that we can look towards Wickman Bennett under your leadership for ongoing support for these machines should we ever need it. Good luck to you and your team, please give each one of them my best regards. I look forward to hearing more from you soon about the success of the new company and I am happy to know that the legacy of the best machine tool builder in the world "W&B" will be maintained and will be advanced under the new company. Thanks.

Best Regards,
Hussein Suheimat
General Manager, Rockwell Collins Rollmet
(949) 221-5580



Vertical Turning Technologies

One man's obsession with **Webster & Bennett** ensured the funding of the design of the Millennium and several more ranges of super quality machines. More than the 60 of them, £40m sales, were built in Coventry, and are working in major companies around the world.

VTT provides service, breakdown repair and refurb/upgrades for the machines we designed and built and also for thousands of others built up to 60 years ago.

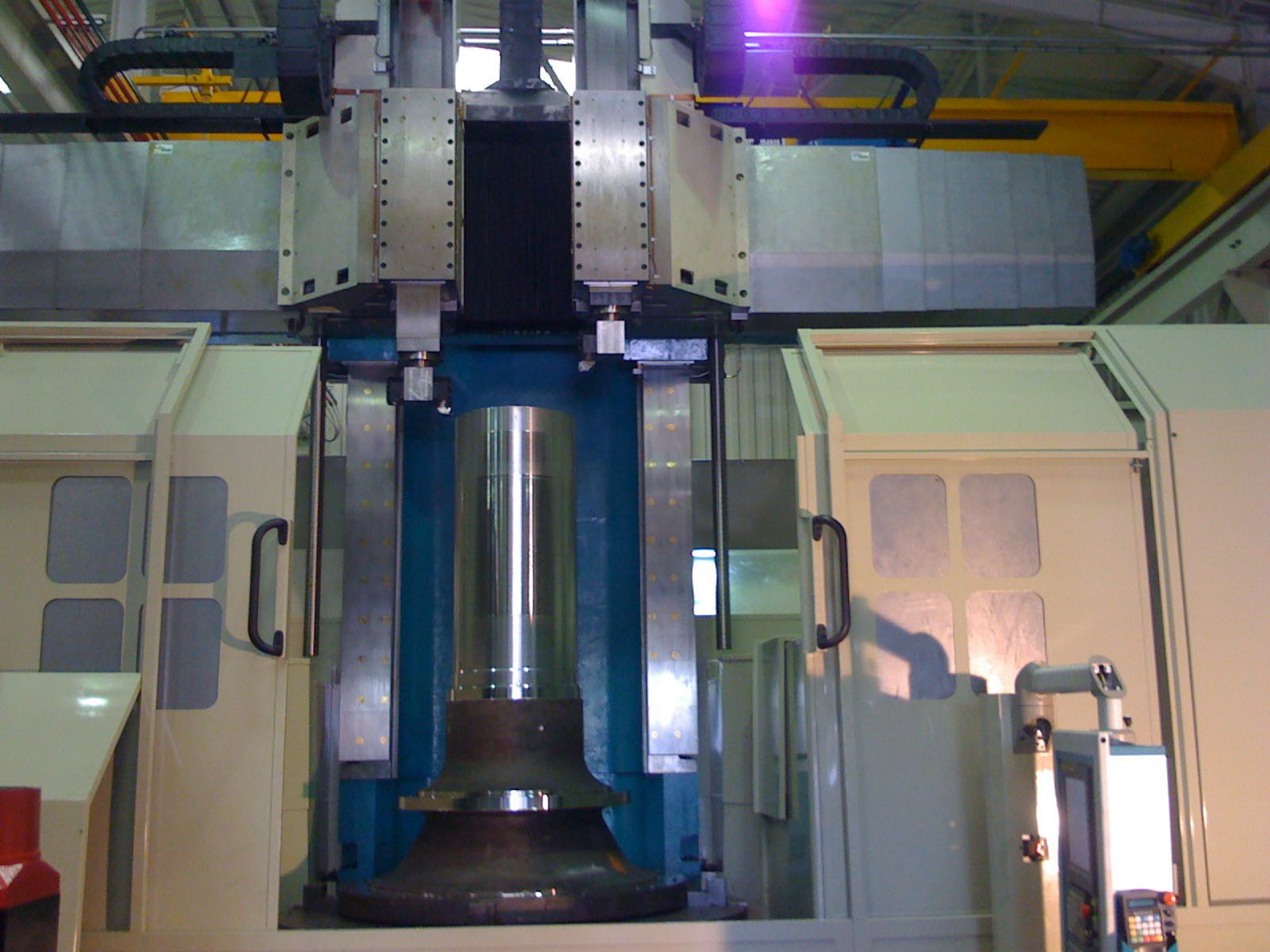
Great machines and worth every bit of attention we can give them

After the Belgians - a new start

- in 2008 Webster & Bennett International was destroyed and liquidated
- Several US customers had machines in half finished condition. They purchased the WIP and Exeter's team completed them
- A new lighter machine was developed - The Aeroturn
- Exeter was approached by Spark a very large Chinese machine tool builder and started a design program for a range of heavy duty range of VTC's up to 5000mm diameter. Aeroturn castings were delivered very quickly




WICKMAN
BENNETT
125 - 160 AEROTURN



MACHINE DESIGN PRESENTATION
FOR SPARK CNC AND HERION

FOR PRESENTATION TO THE LOCAL STAFF

CURRENT PROGRAMME

IN 2008 A NEW DESIGN PROGRAMME WAS STARTED, TAKING BENEFIT OF EARLIER EXPERIENCE BUT INCORPORATING MANY NEW TECHNOLOGIES TO PROVIDE THE BEST SOLUTION FOR USERS FOR EACH OF THE TARGET MARKETS

THIS PRESENTATION IS TO SHOW THE THREE MODEL RANGES

- **THE WICKMAN BENNETT AEROTURN** – A SINGLE COLUMN MACHINE WITH MODELS TO GIVE CAPACITIES UP TO 2000MM. A HIGH PRECISION, FLEXIBLE AND QUITE POWERFUL MACHINE

- **THE WICKMAN BENNETT REVELATION2** – A SINGLE COLUMN MACHINE WITH A WIDE RANGE OF MODELS FROM 1500MM TO 3500MM CAPACITY. IMMENSELY POWERFUL AND PRECISE. A WIDE RANGE OF OPTIONS AND ACCESSORIES

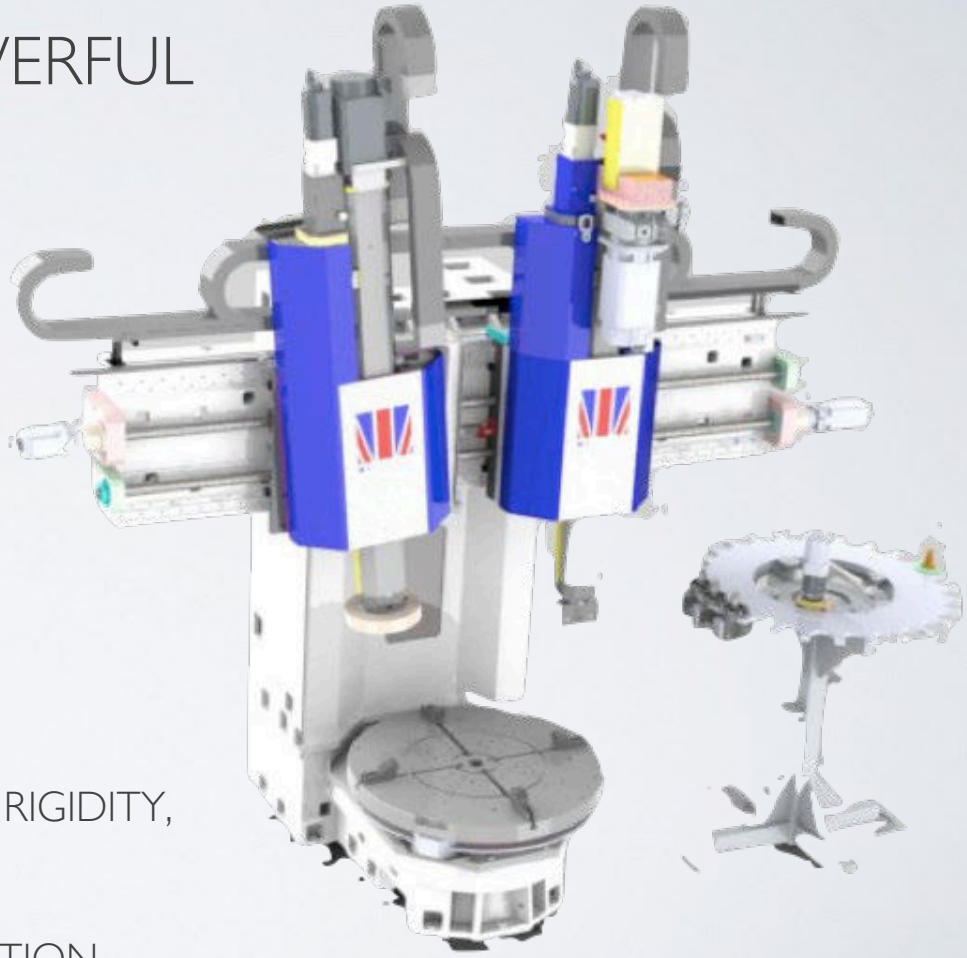
- **THE WICKMAN BENNETT REVELATION DC** – A DOUBLE COLUMN MACHINE AVAILABLE IN MODELS FROM 3000MM TO 6000MM CAPACITY. INNOVATIVE IN DESIGN AND CAPABILITIES



AEROTURN

AEROTURN DESIGN CONCEPT

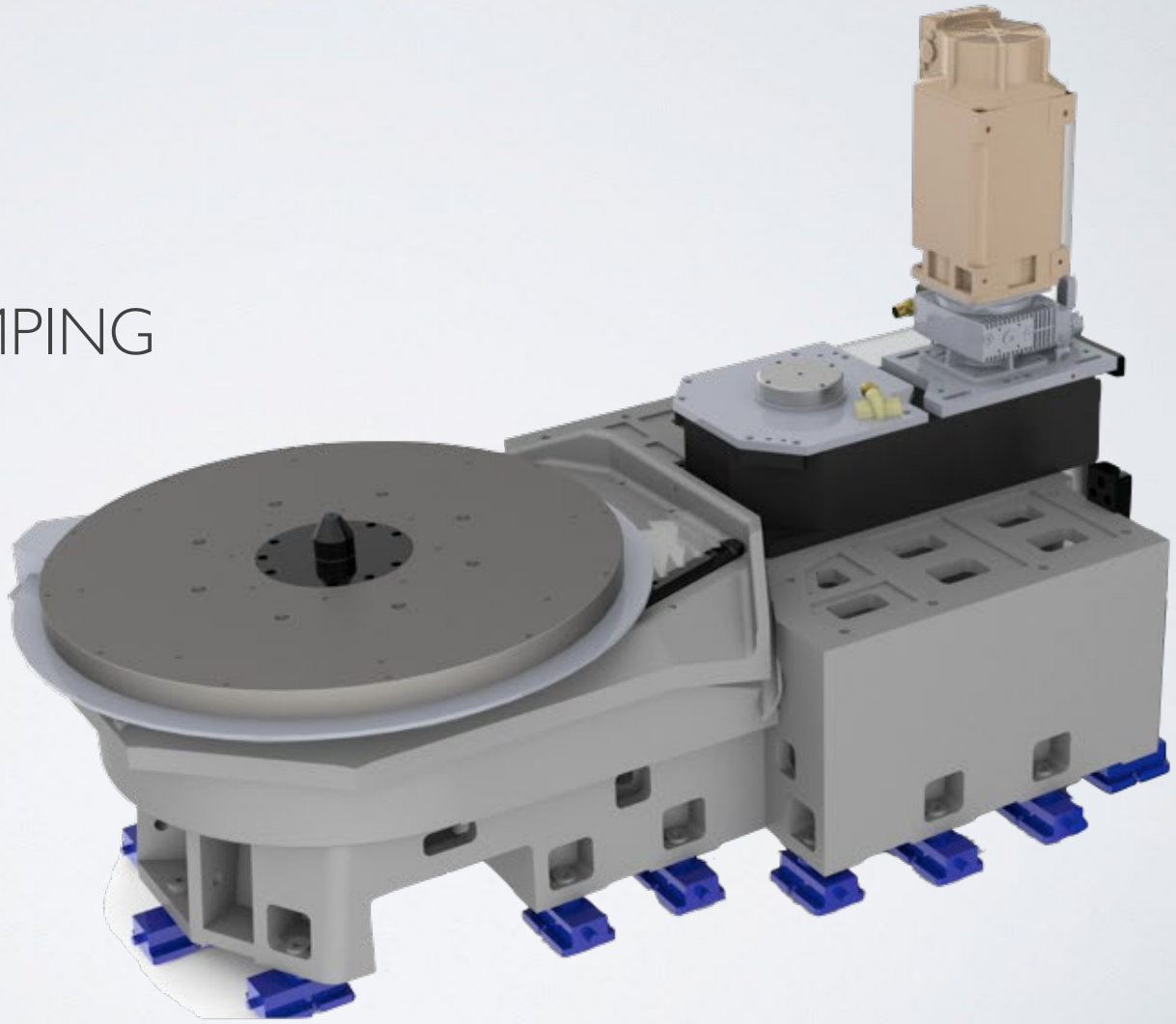
- HIGH PRECISION AND POWERFUL PERFORMANCE AT MEDIUM MARKET PRICE

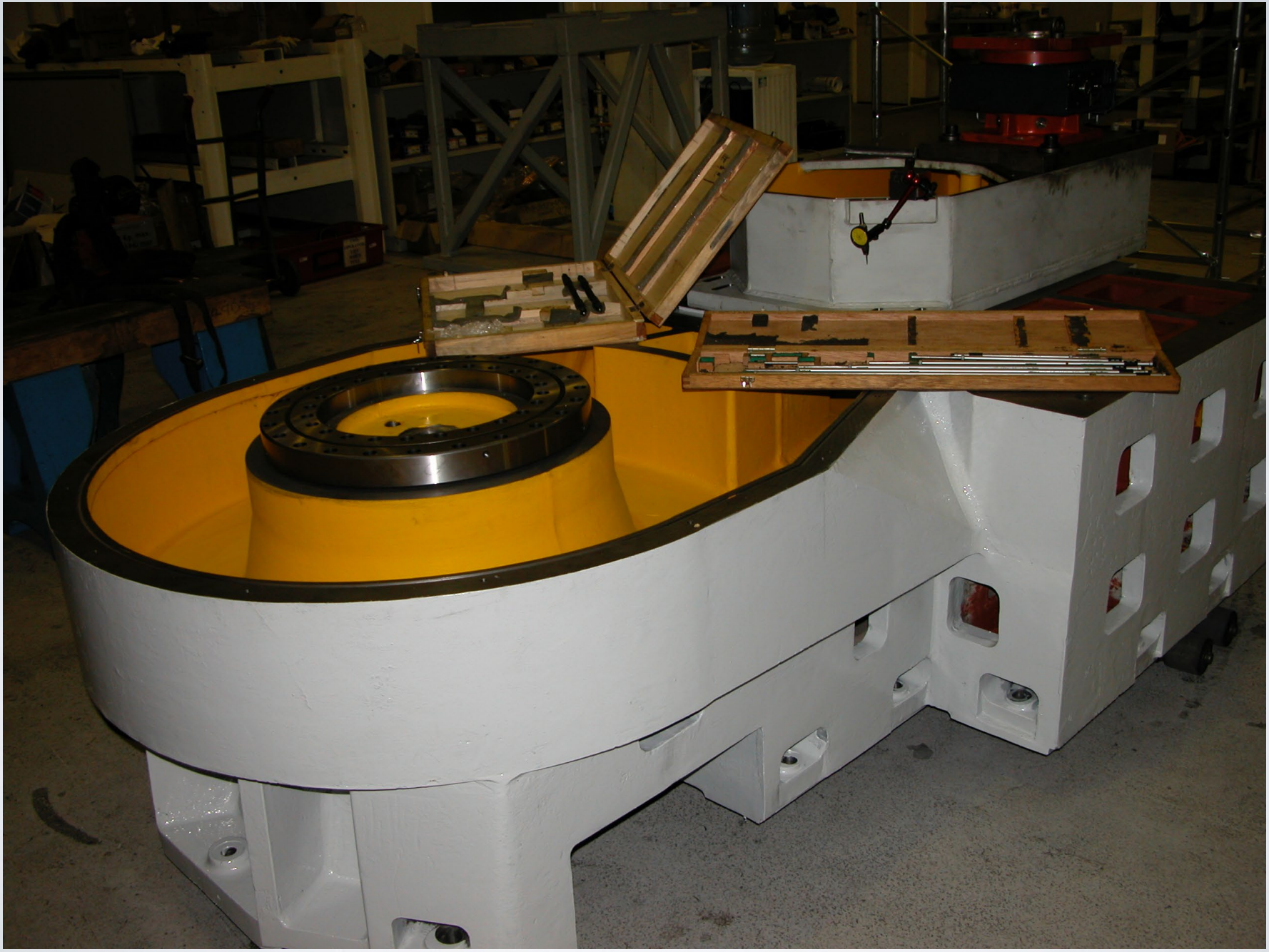


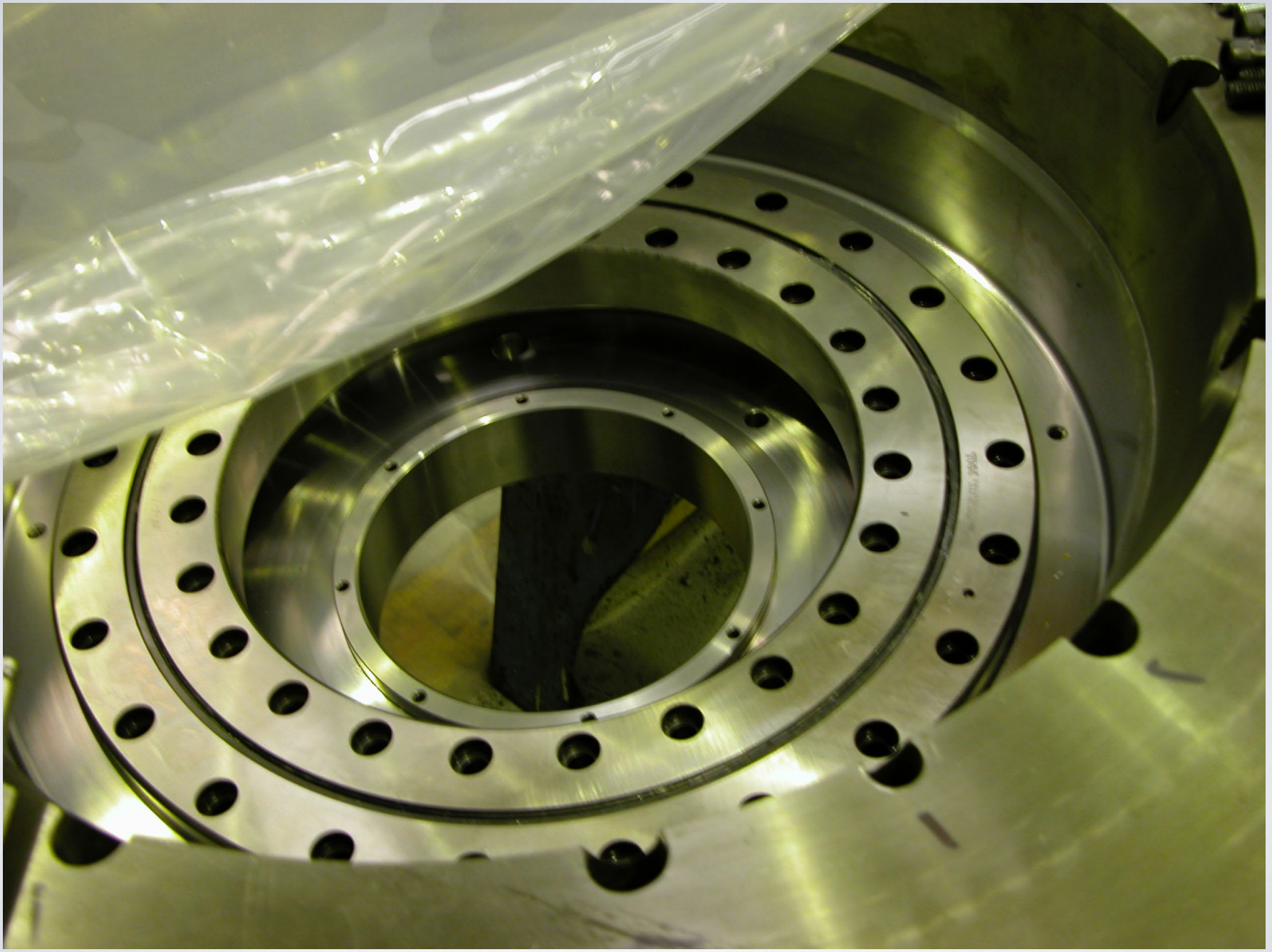
- MODELS TO 2000mm DIAMETER CAPACITY
- FIXED & ELEVATING CROSS RAIL OPTIONS
- LOW NOISE PERFORMANCE
- GRINDING OPTIONS
- HUGE PRECISION MACHINED CASTINGS FOR RIGIDITY, DAMPING
- DESIGN ELIMINATES UNNECESSARY PRODUCTION COSTS

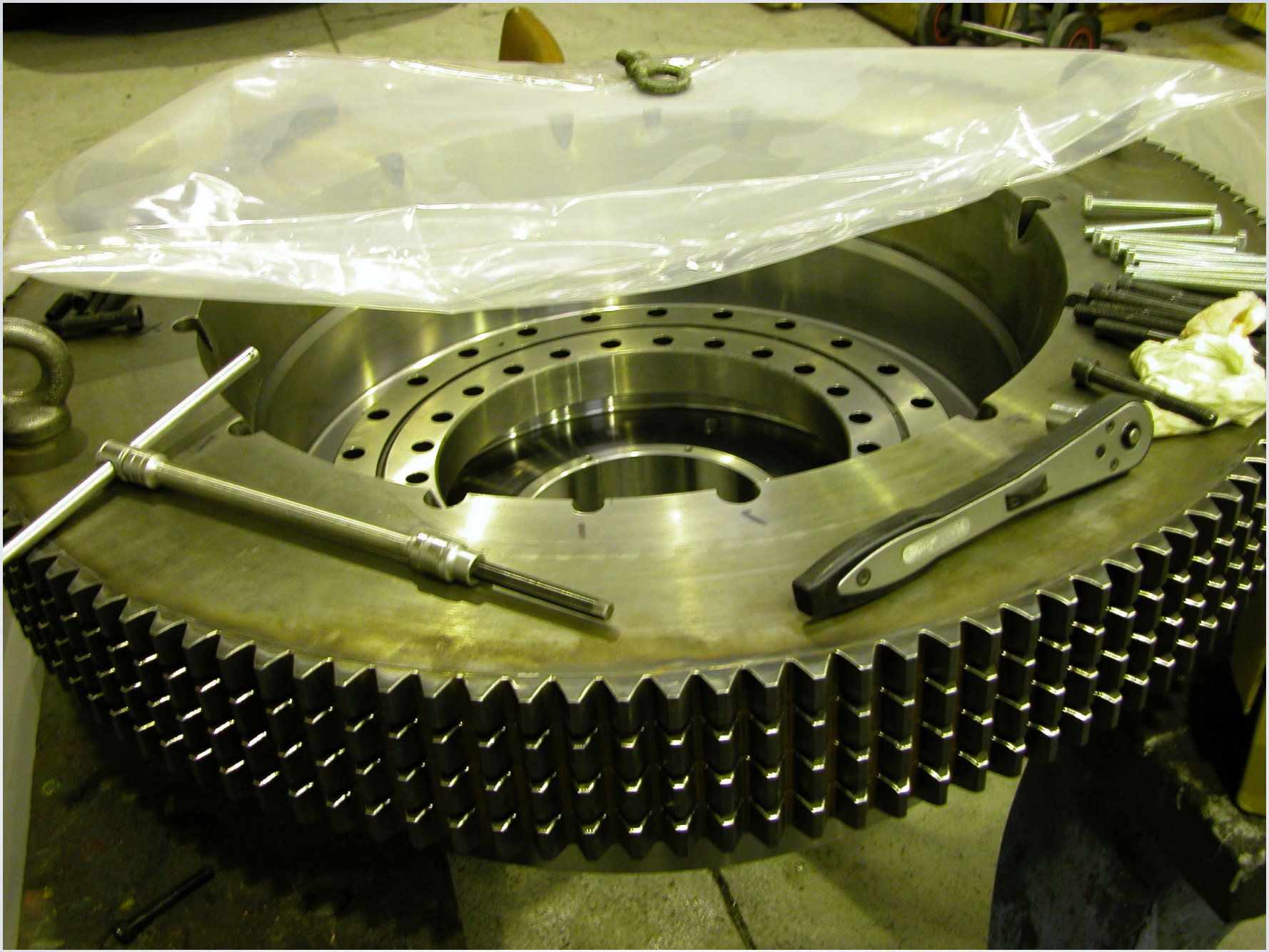
BASE & TABLE DRIVE ASSEMBLY

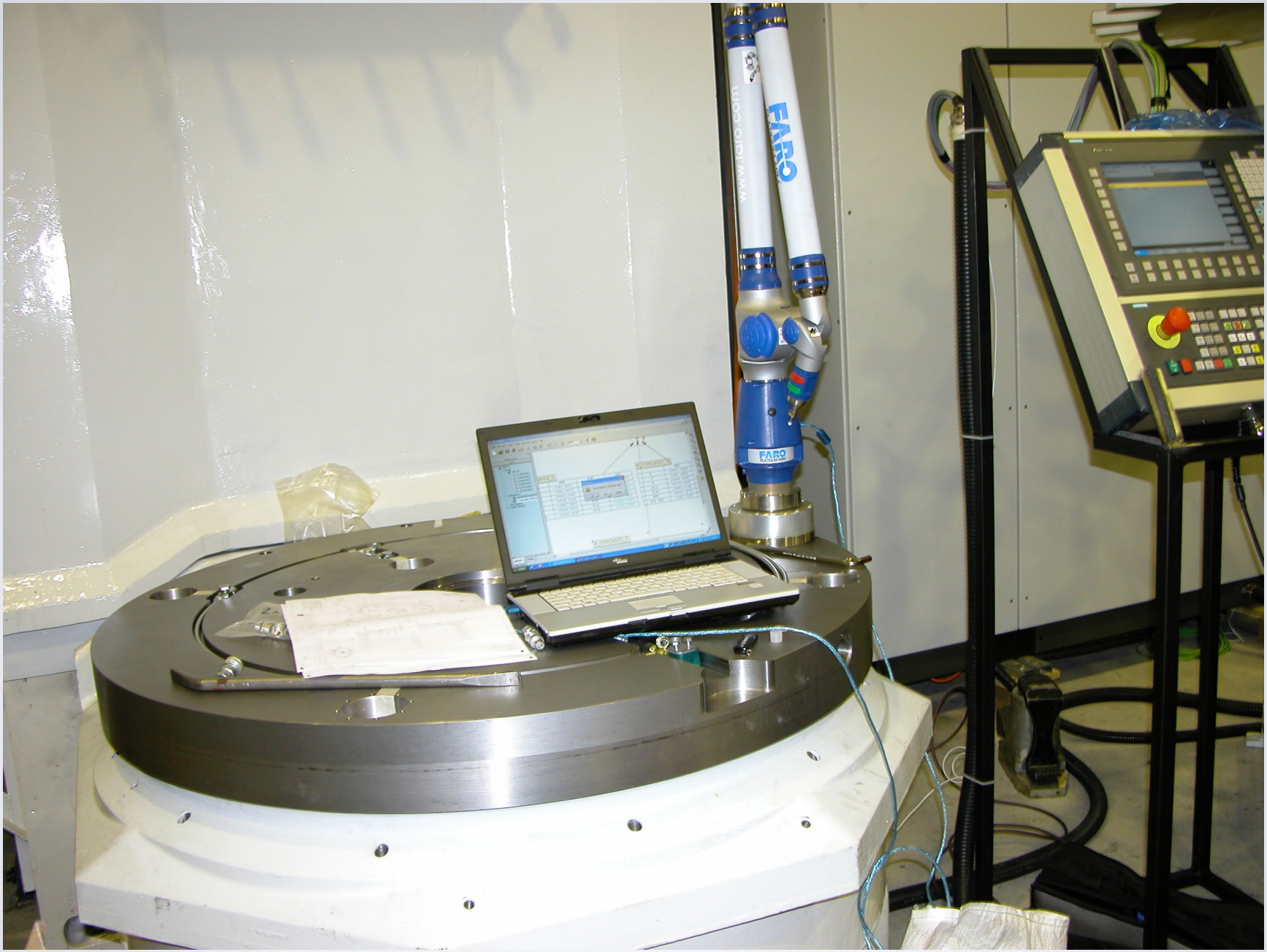
- EXCELLENT DAMPING
- HIGH RIGIDITY
- SILENT DRIVE
- C AXIS OPTIONS





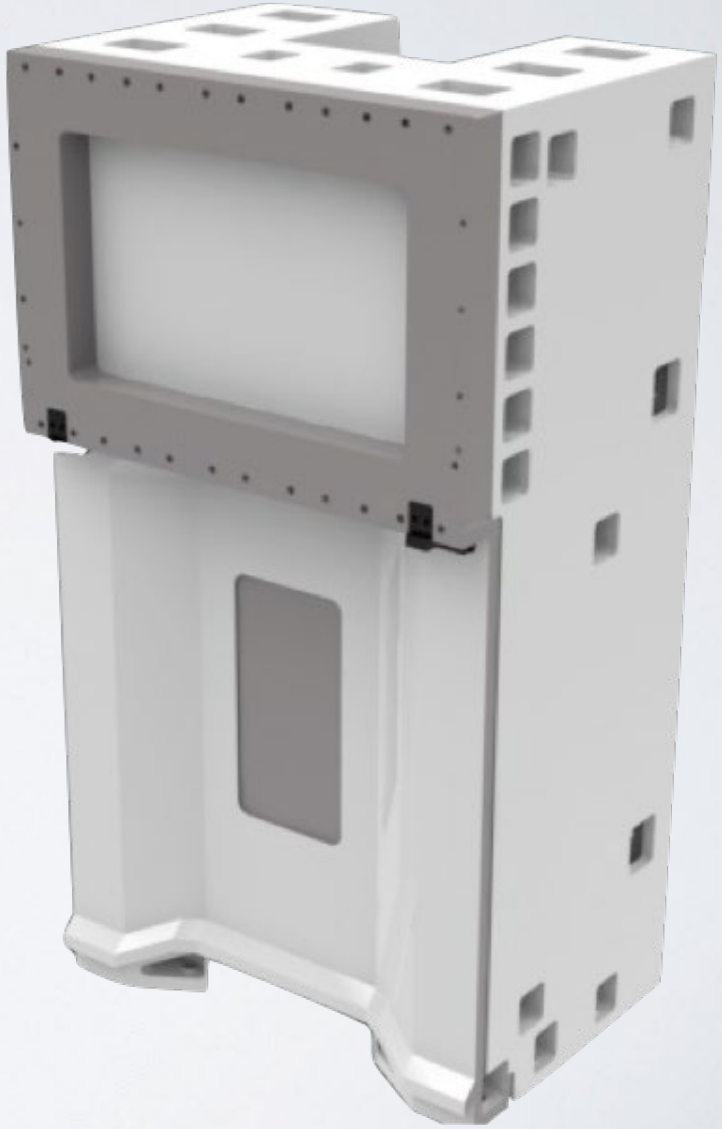





FARO
FARO
PLATINUM

COLUMN

- ‘IDEAL’ CORE BOX DISTRIBUTION
- OPTIONS
  - LOW HEIGHT
  - TALL
  - ELEVATING CROSS RAIL

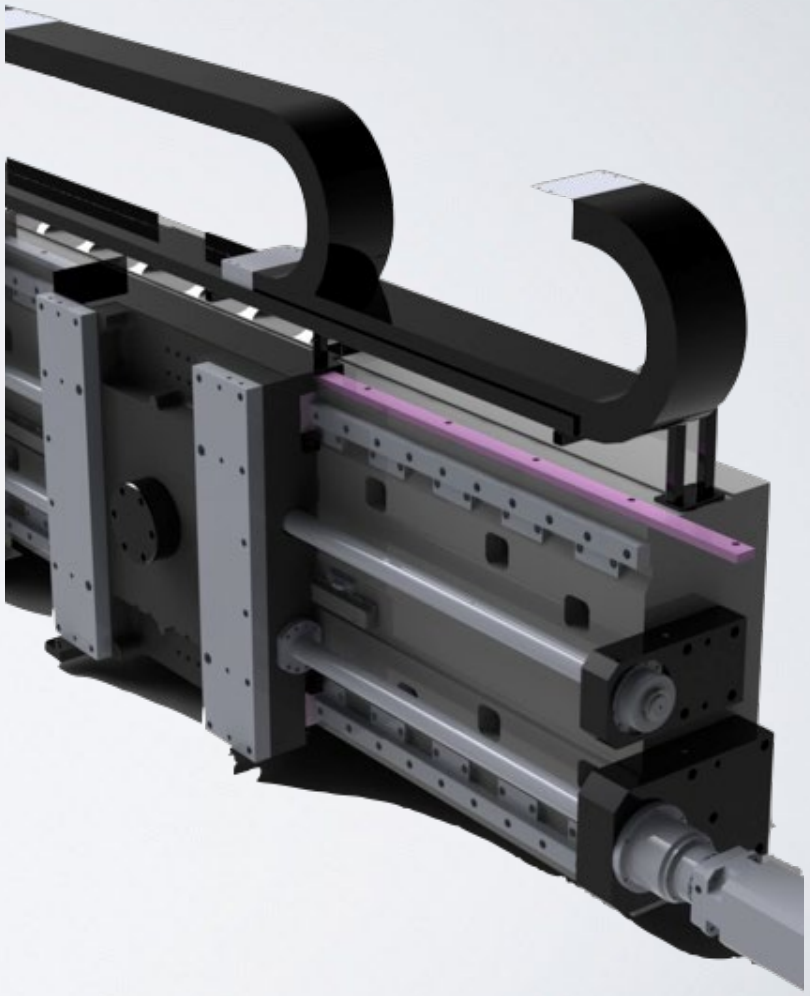






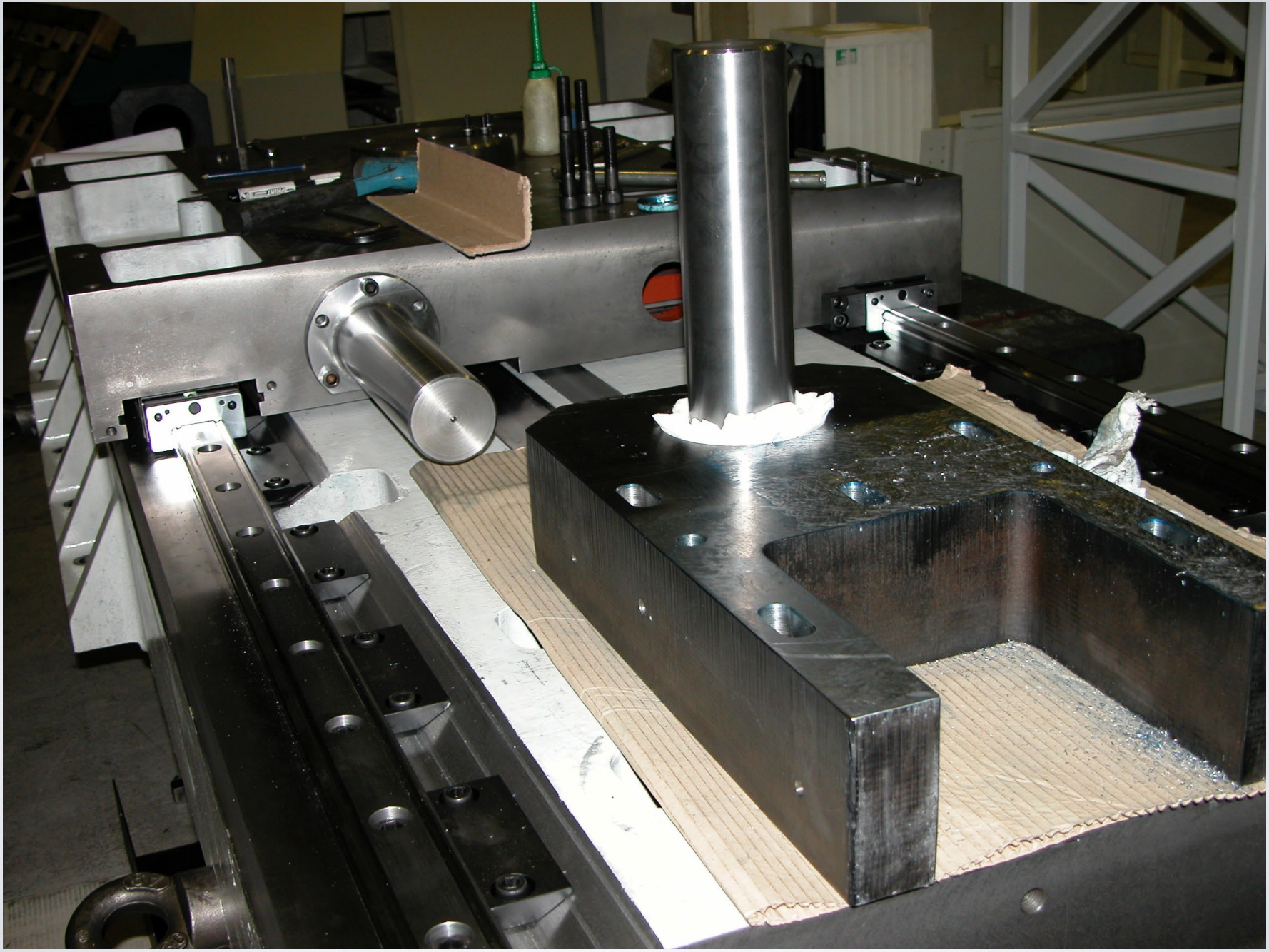
CROSS RAIL ASSEMBLY

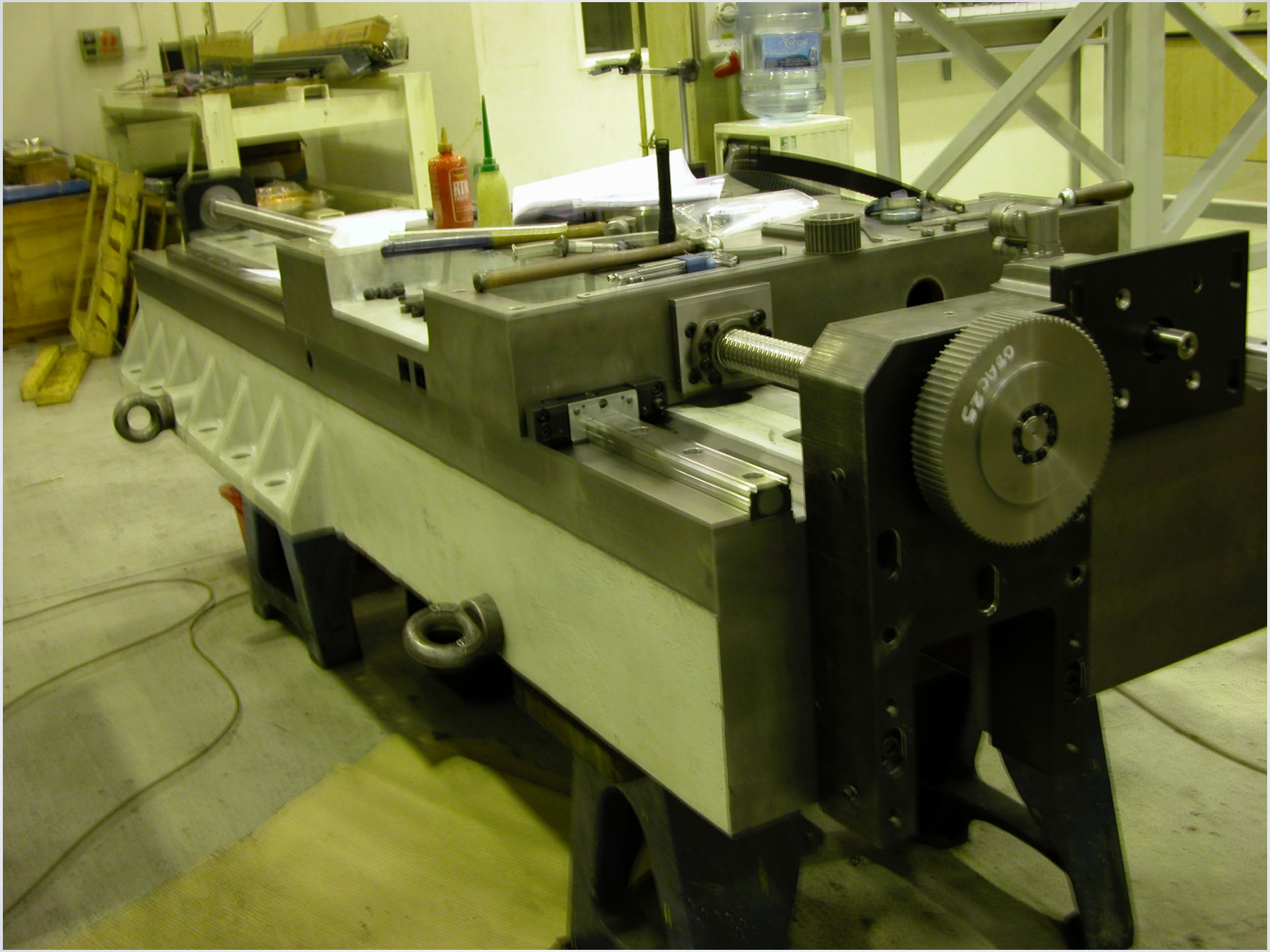
- SADDLE DIMENSIONED FOR MAXIMUM RIGIDITY
- MINIMUM DEFELCTION
- LUBRICATION FOR LIFE
- HIGH SPEED - LOW NOISE SADDLE TRAVERSE
- MINIMUM DEFLECTION
- 63x16 BALLSCREW WITH POWERFUL DRIVE PRODUCING 39000 Nm







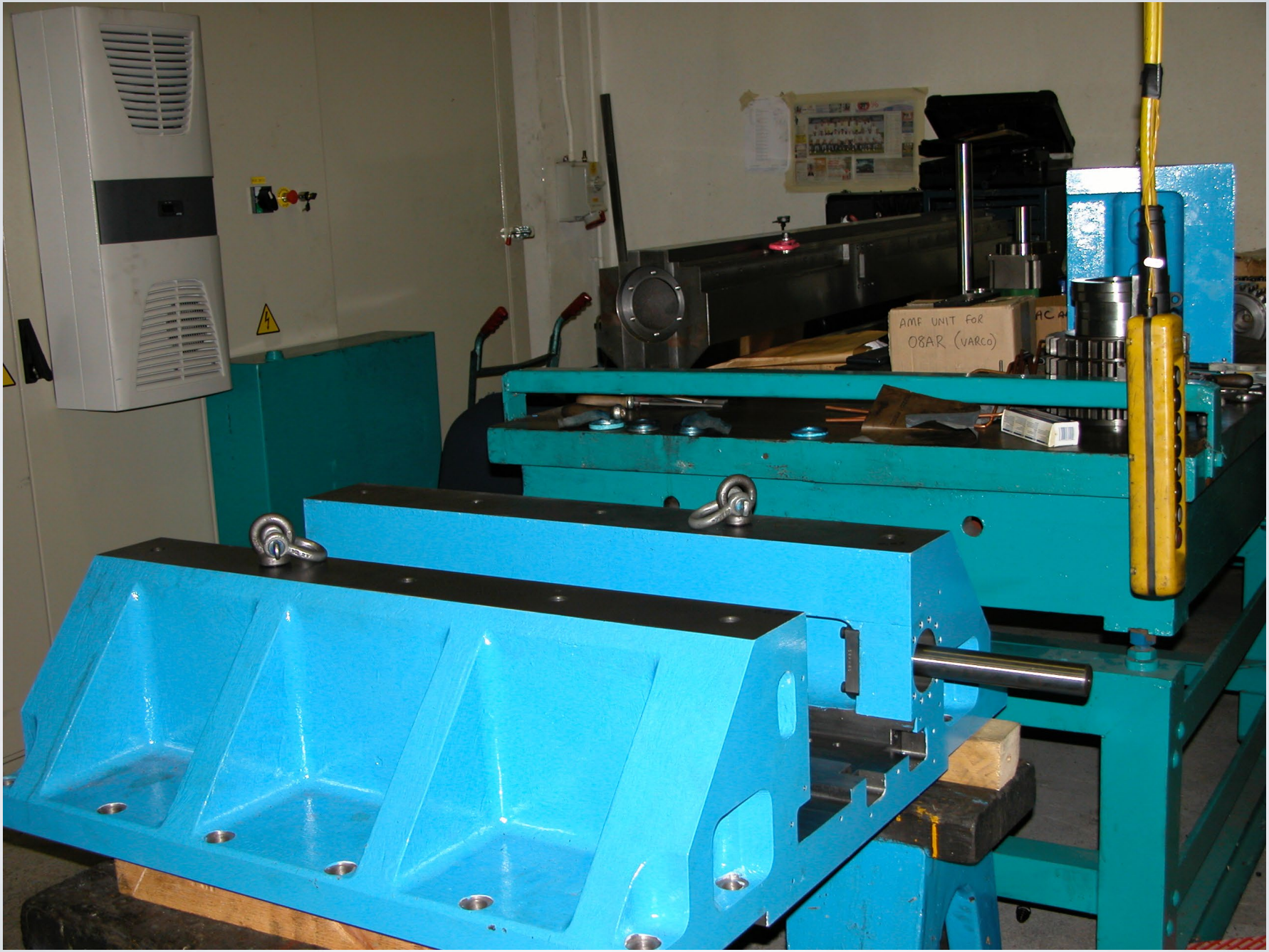



GTAC 25

RAM HOUSING AND Z AXIS ASSEMBLY

- MASSIVE RAM HOUSING FOR MAXIMUM RIGIDITY
- 63x10 BALLSCREW WITH POWERFUL DRIVE TO PRODUCE 37000 N/m

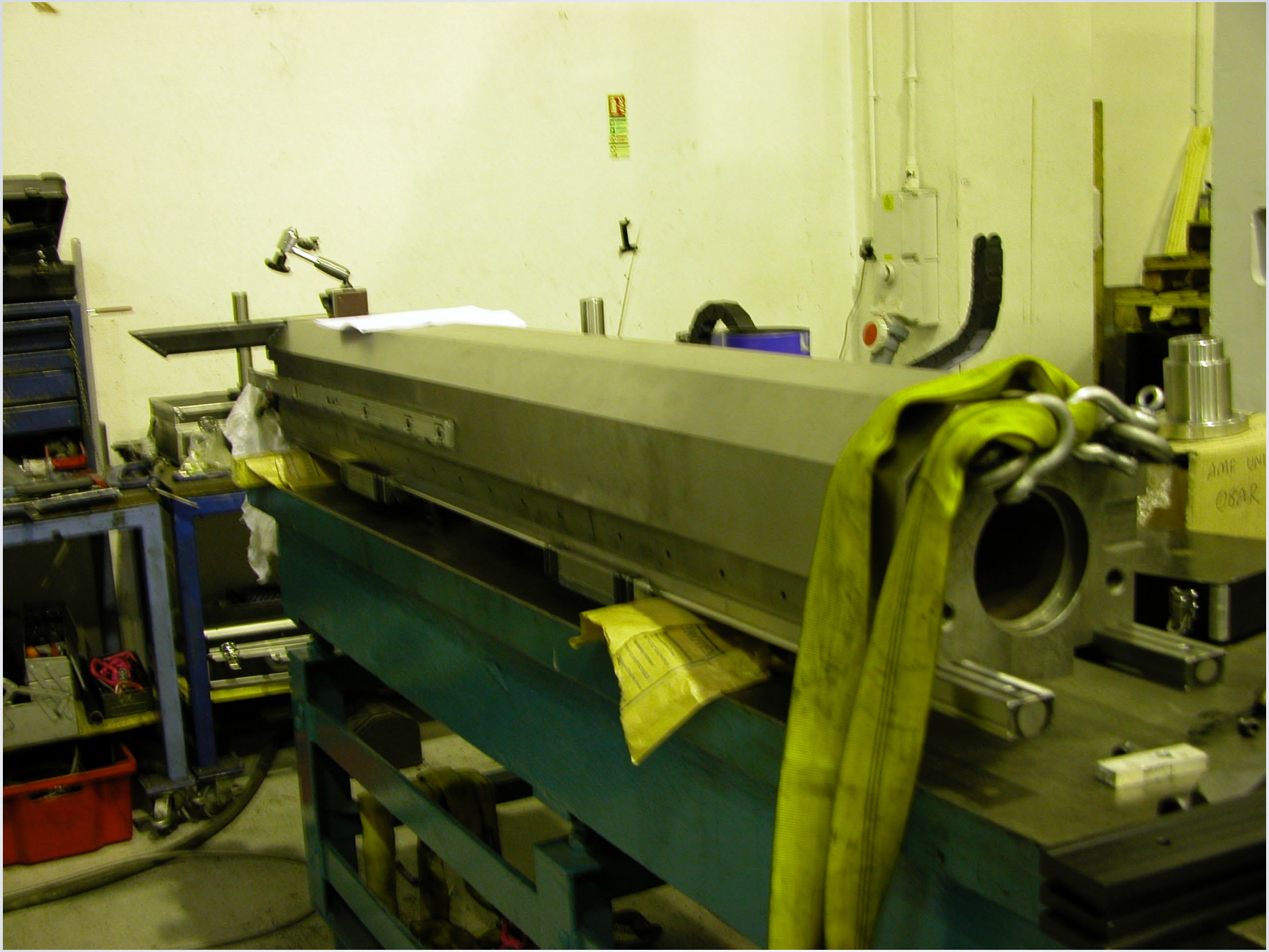



AMF UNIT FOR
08AR (VARCO)

RAM

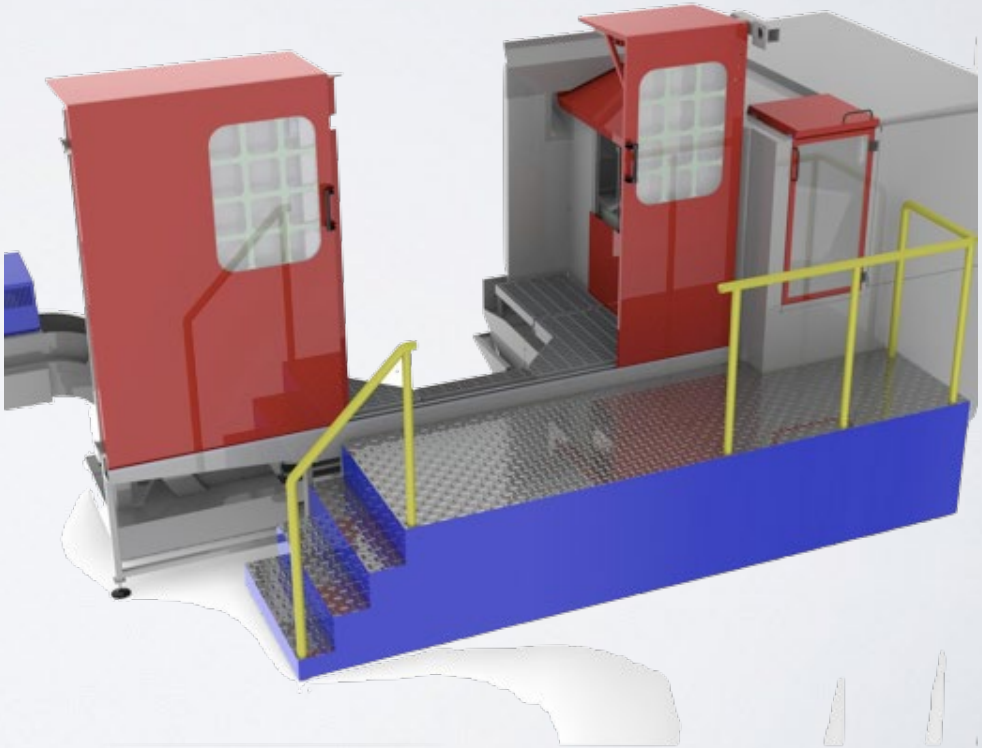


- MASSIVE STEEL FORGING
- 250 x 234 SECTION
- SUPER RIGID GUIDES
- LIVE SPINDLE OPTION - 17Kw, 3000 RPM, ISO50



GUARDING ASSEMBLY

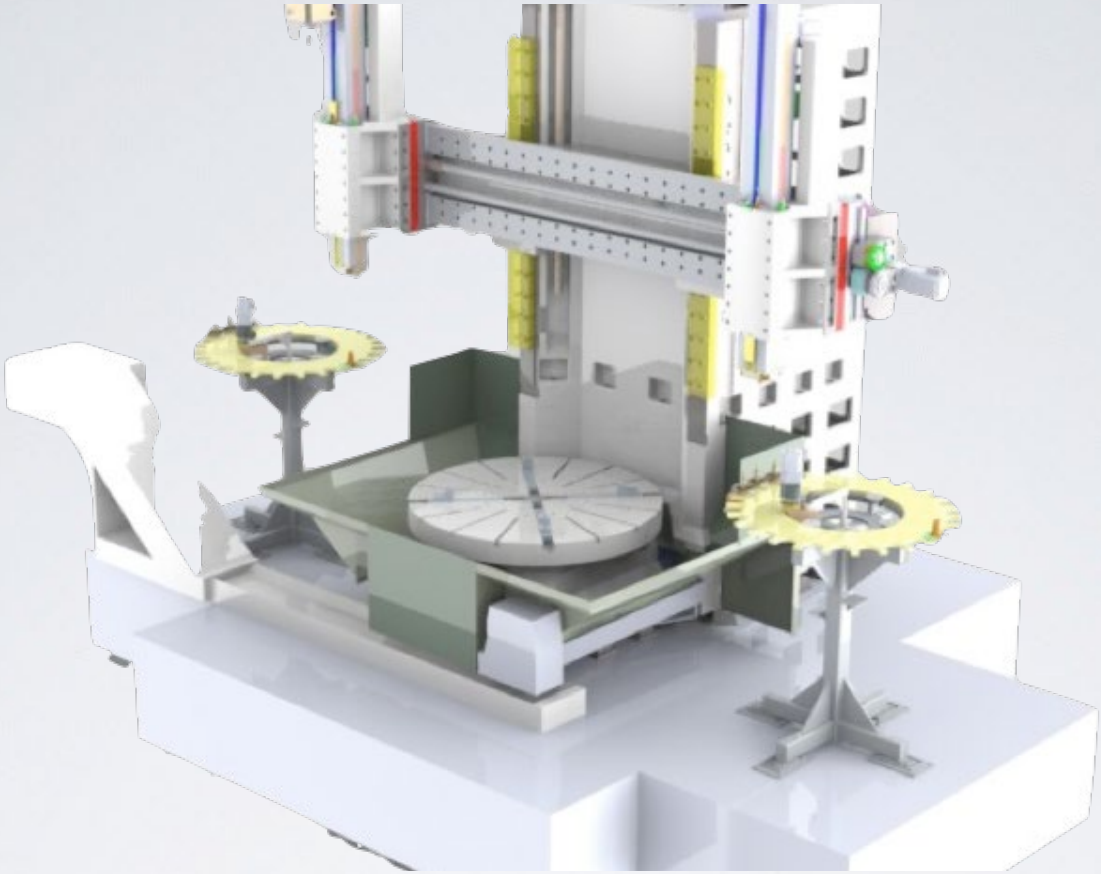
- EXCELLENT CHIP FLOW
- EXCELLENT COOLANT CONTROL
- EXCELLENT FOR OPERATOR






WICKMAN
BENNETT
125 - 160 AEROTURN
WICKMAN
BENNETT
125 - 160 AEROTURN


WICKMAN
BENNETT
WICKMAN
BENNETT
WICKMAN
BENNETT
AEROTURN
180-200



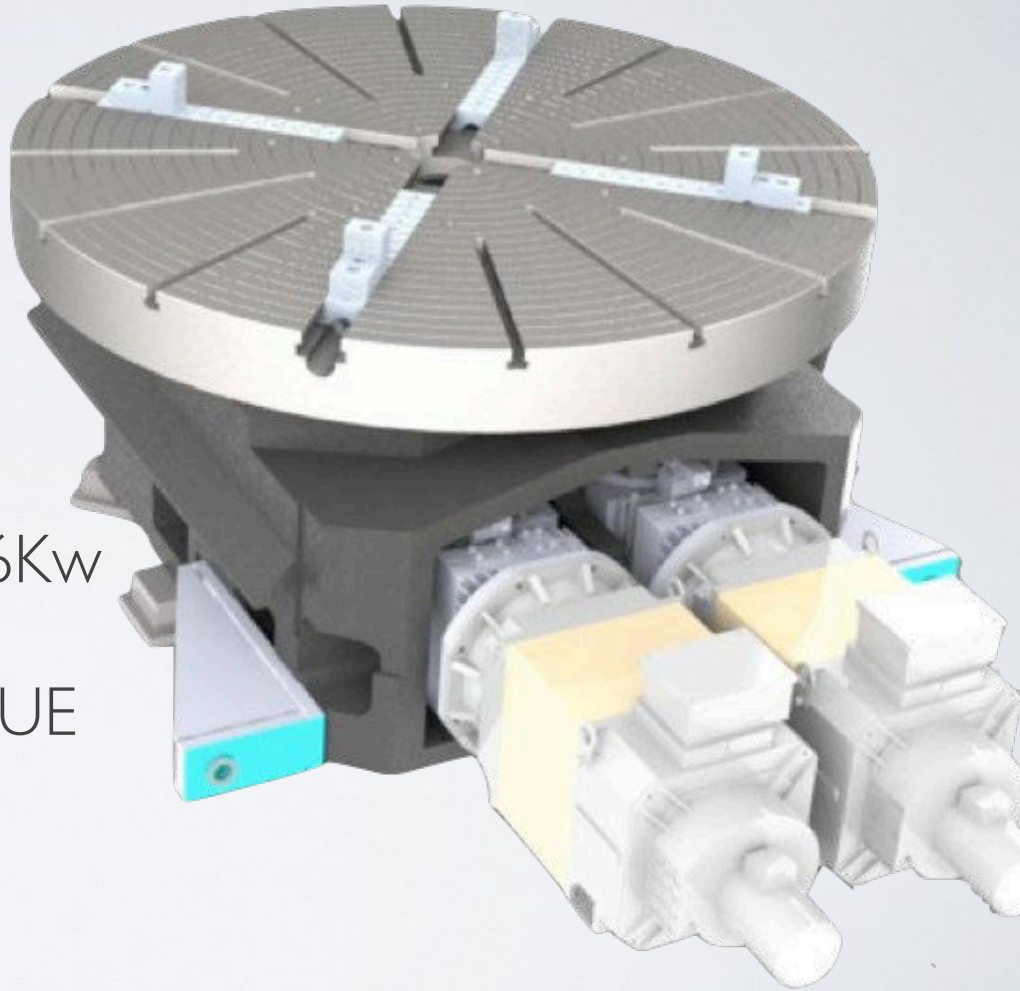
REVELATION2

REVELATION2 DESIGN CONCEPT

- TO PRODUCE THE MOST PRECISE HIGH POWER SINGLE COLUMN VERTICAL TURNING CENTRE IN THE MARKET
- CAPACITIES UP TO 3500mm
- LOW HEIGHT FIXED RAIL MODELS
- ELEVATING RAIL MODELS - 2800mm WORK HEIGHT
- TURNING POWER OPTIONS TO 140Kw
- FORGED STEEL RAM - OPTIONS TO 1800mm Z AXIS STROKE
- LIVE SPINDLE OPTION ISO50 (34Kw) & HSK (40Kw)
- FULL POWER C AXIS TABLE DRIVE FOR CONTINUOUS MILLING
- Y-AXIS & RIGHT ANGLE MILLING HEADS
- GRINDING RAMS & ATTACHMENTS
- ELLIPTICAL TURNING OPTION

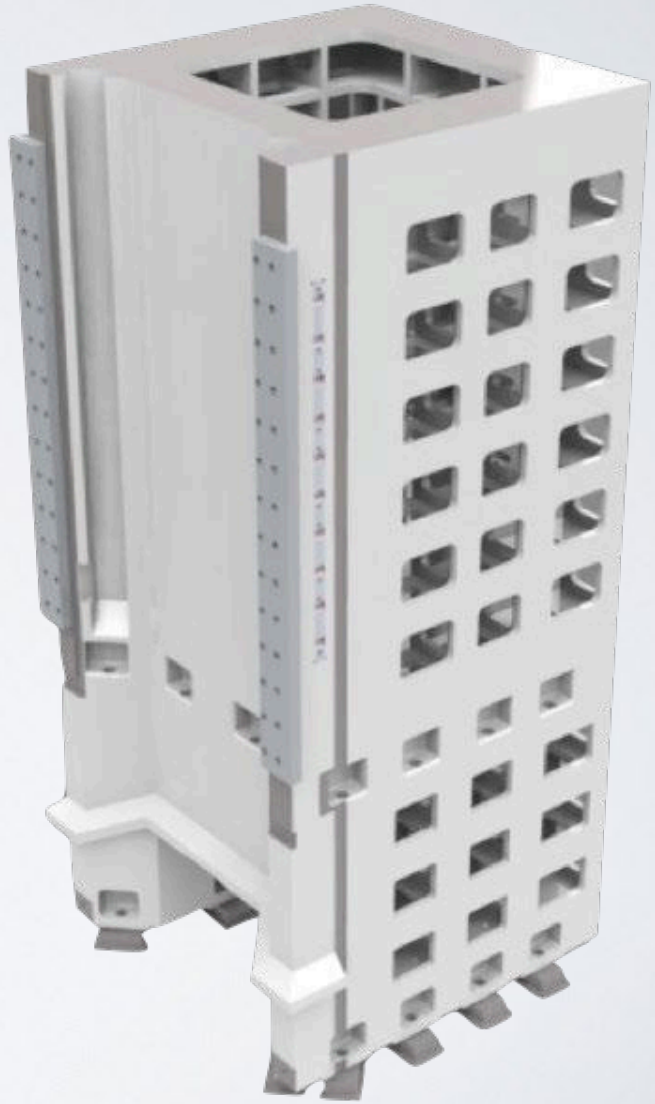
BASE ASSEMBLY

- RIGID DRIVE
- EXCELLENT DAMPING
- FULL POWER C-AXIS
- POWER OPTIONS TO 2x86Kw
- HIGH SPEED / HIGH TORQUE
- LOW DEFLECTION
- EASY MAINTENANCE

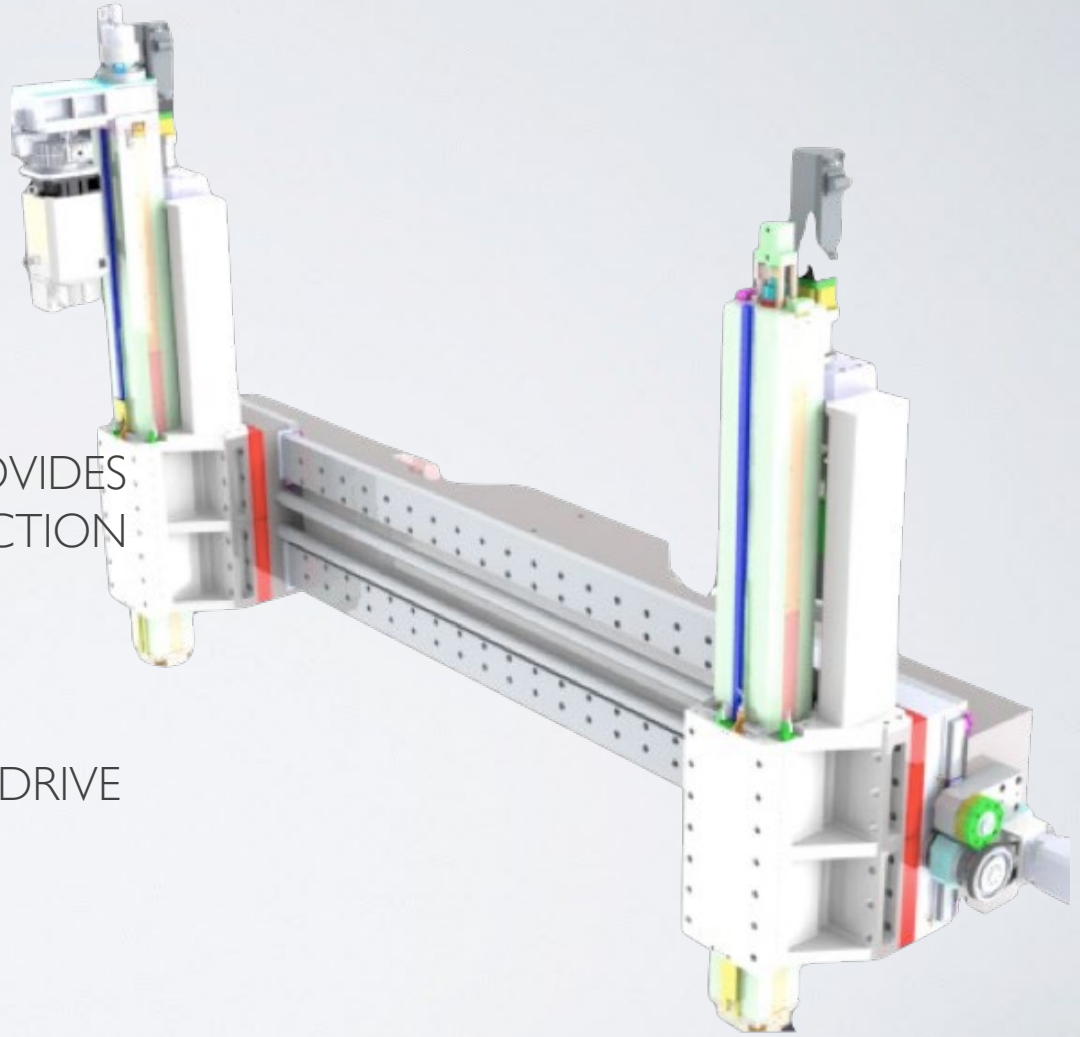


COLUMN ASSEMBLY

- HEAVY DUTY STRUCTURE
- HARDENED STEEL GUIDEWAYS
- HEIGHT OPTIONS
- EXCELLENT DAMPING



CROSS RAIL ASSEMBLY



- MASSIVE CROSS RAIL STRUCTURE PROVIDES HIGH RIGIDITY AND MINIMUM DEFLECTION
- HARDENED STEEL GUIDEWAYS
- 80x16 BALLSCREW WITH POWERFUL DRIVE

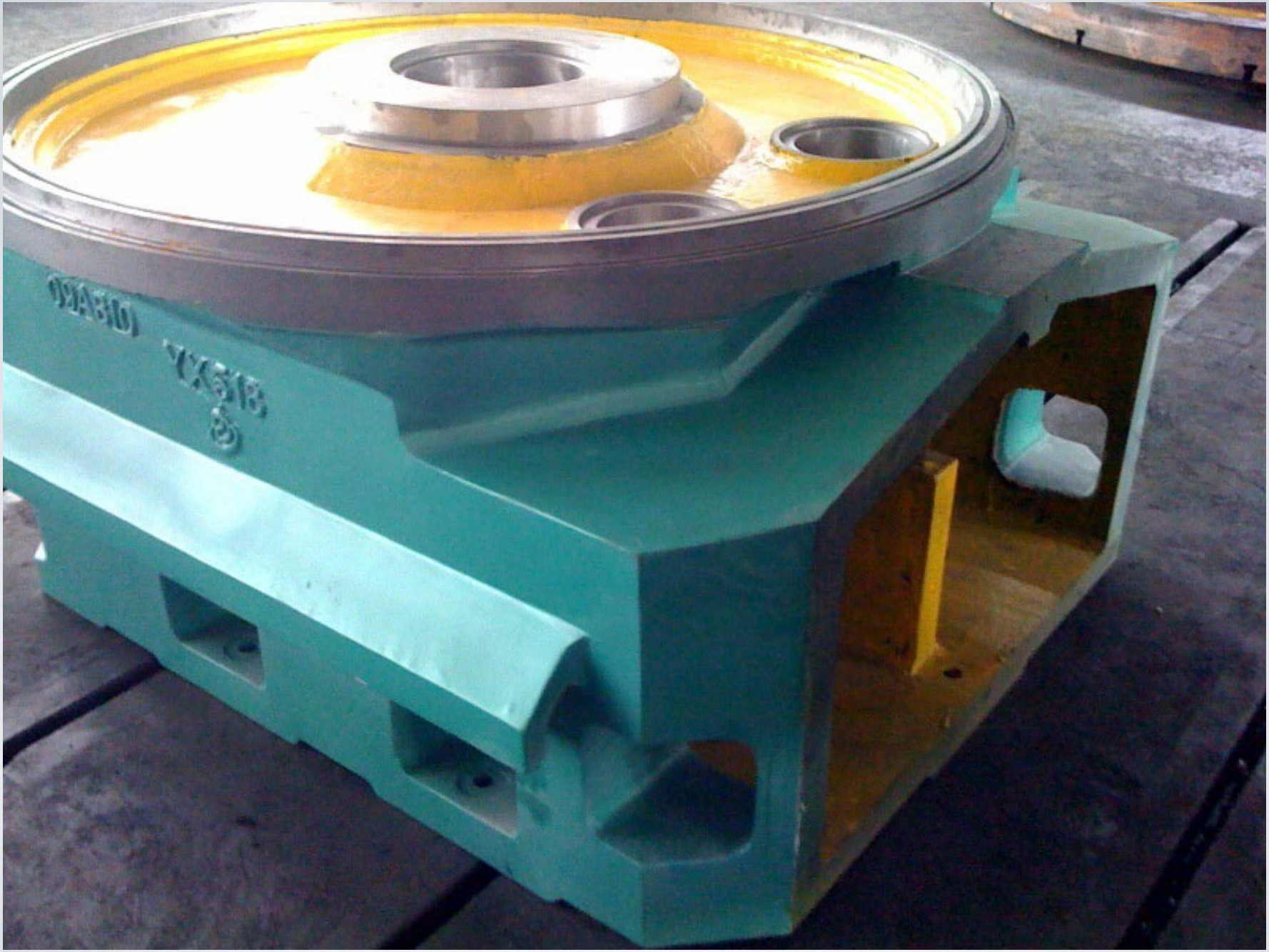
RAM HOUSING



- FULL WIDTH DESIGN PROVIDES
  - MAXIMUM RIGIDITY
  - MINIMUM DEFLECTION
  - FULL DAMPING

Difficult to put into a few words

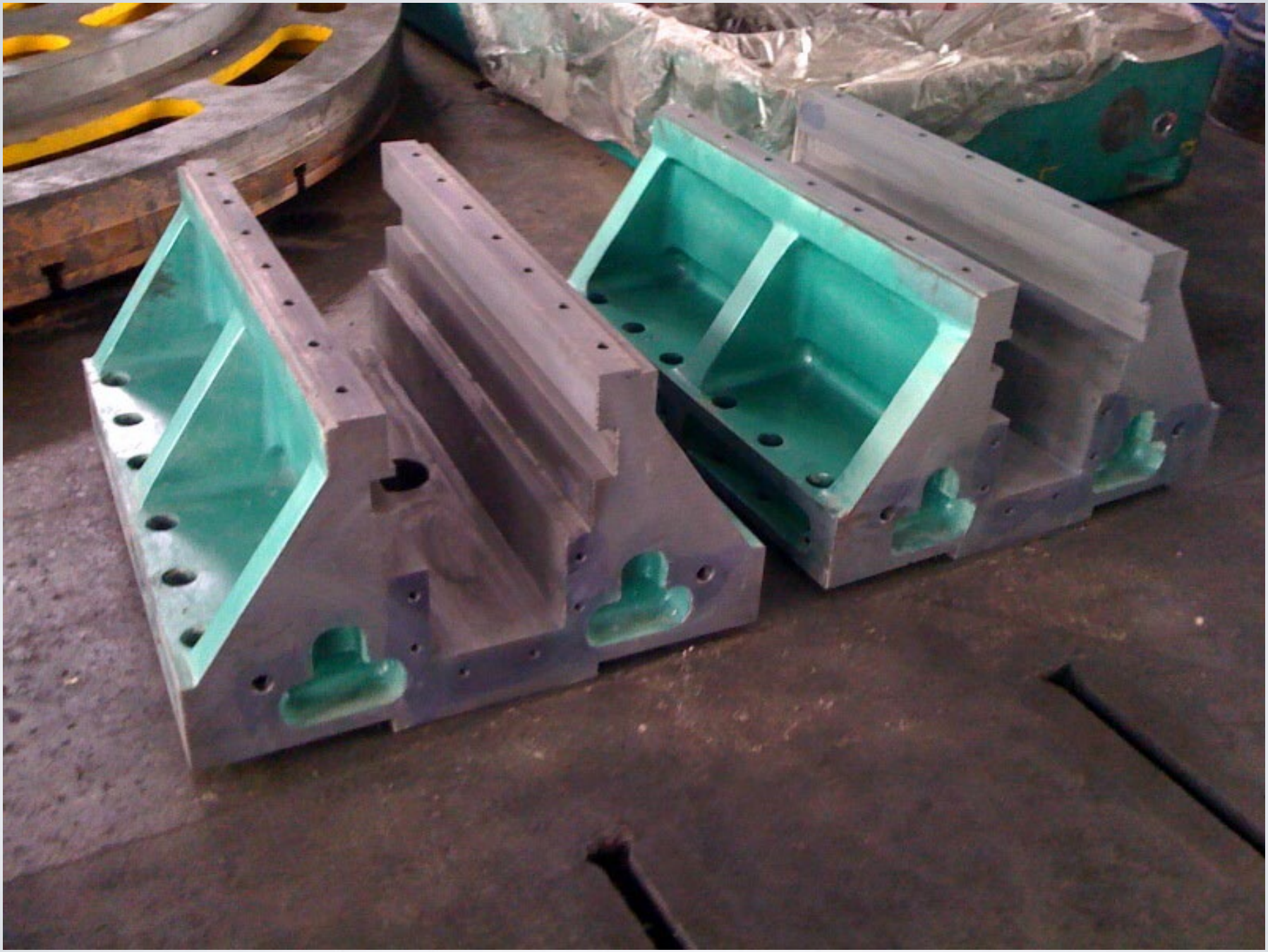
- The design program for Spark was going well. They were making the first major castings, in the slides below. They had also shipped Aeroturn castings to us - very good
- We sent a team to Spark to assemble the first machines. Problems with the precision components led to a political disaster and eventually a total loss of a very good potential





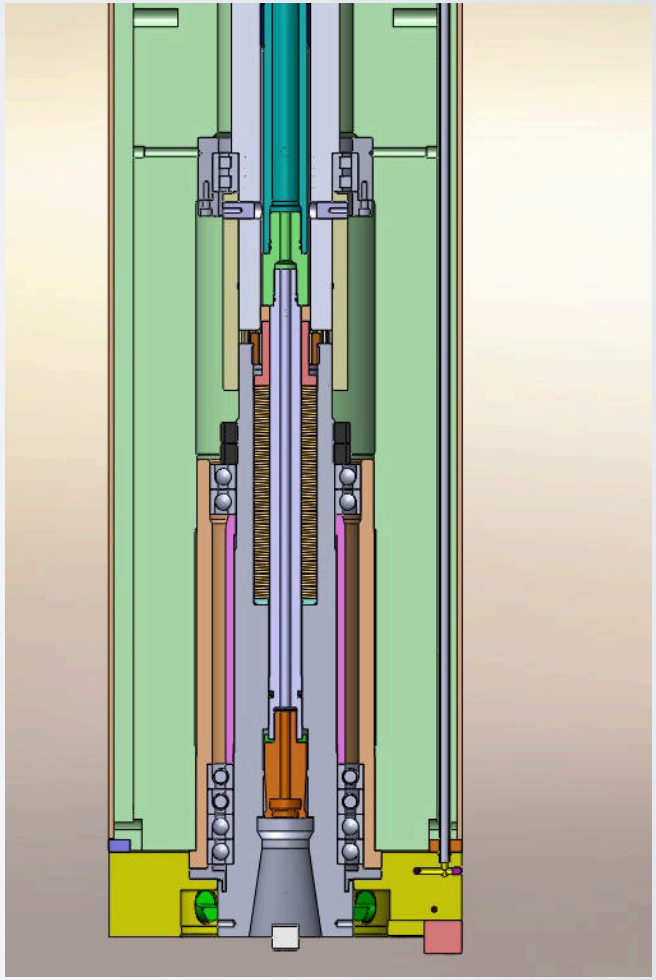






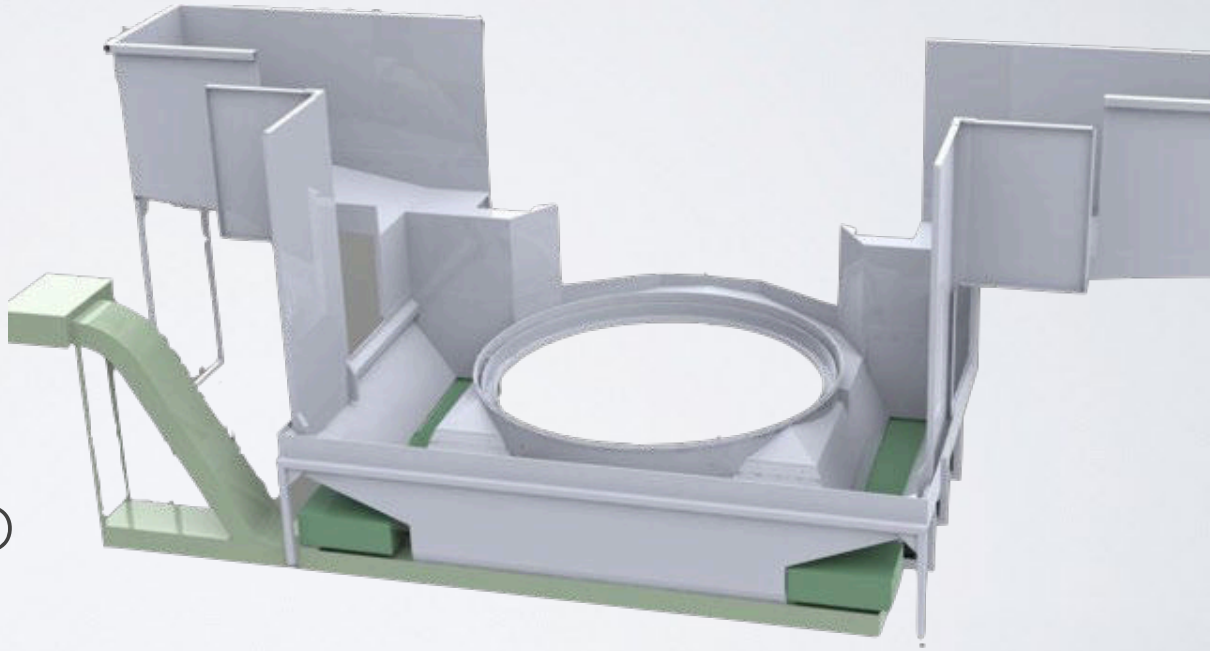
RAM

- MASSIVE STEEL FORGING, HARDENED & GROUND
- 280 X 250 SECTION
- UP TO 1800mm STROKE
- POWERFUL DUAL TOOL CLAMPING SYSTEM



GUARDING

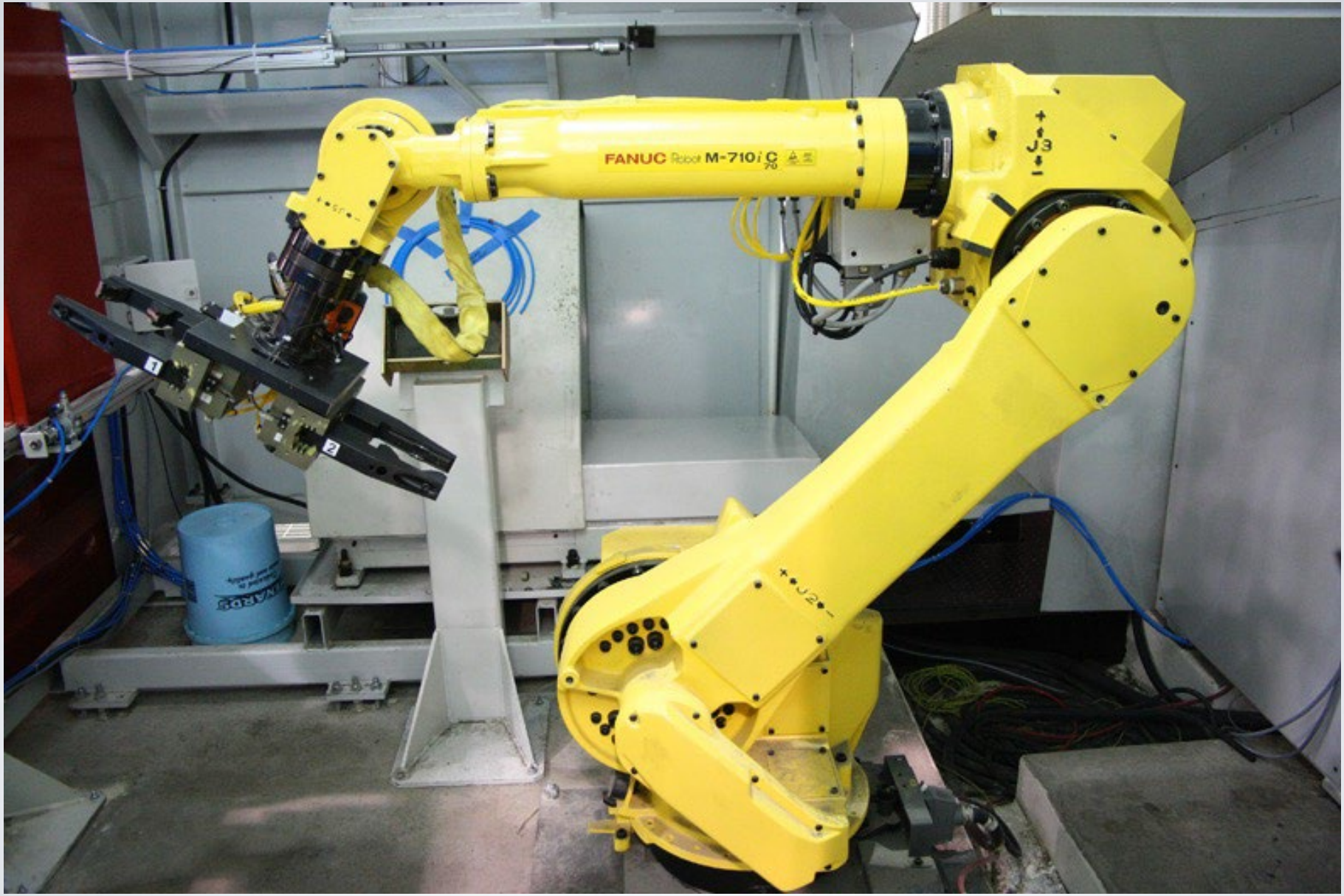
- EXCELLENT FOR CHIP FLOW
- EXCELLENT COOLANT CONTROL
- EXCELLENT FOR OPERATOR
- MODULAR DESIGN ENABLES STANDARD MODULES TO BE ASSEMBLED TO ALL SIZES OF MACHINE

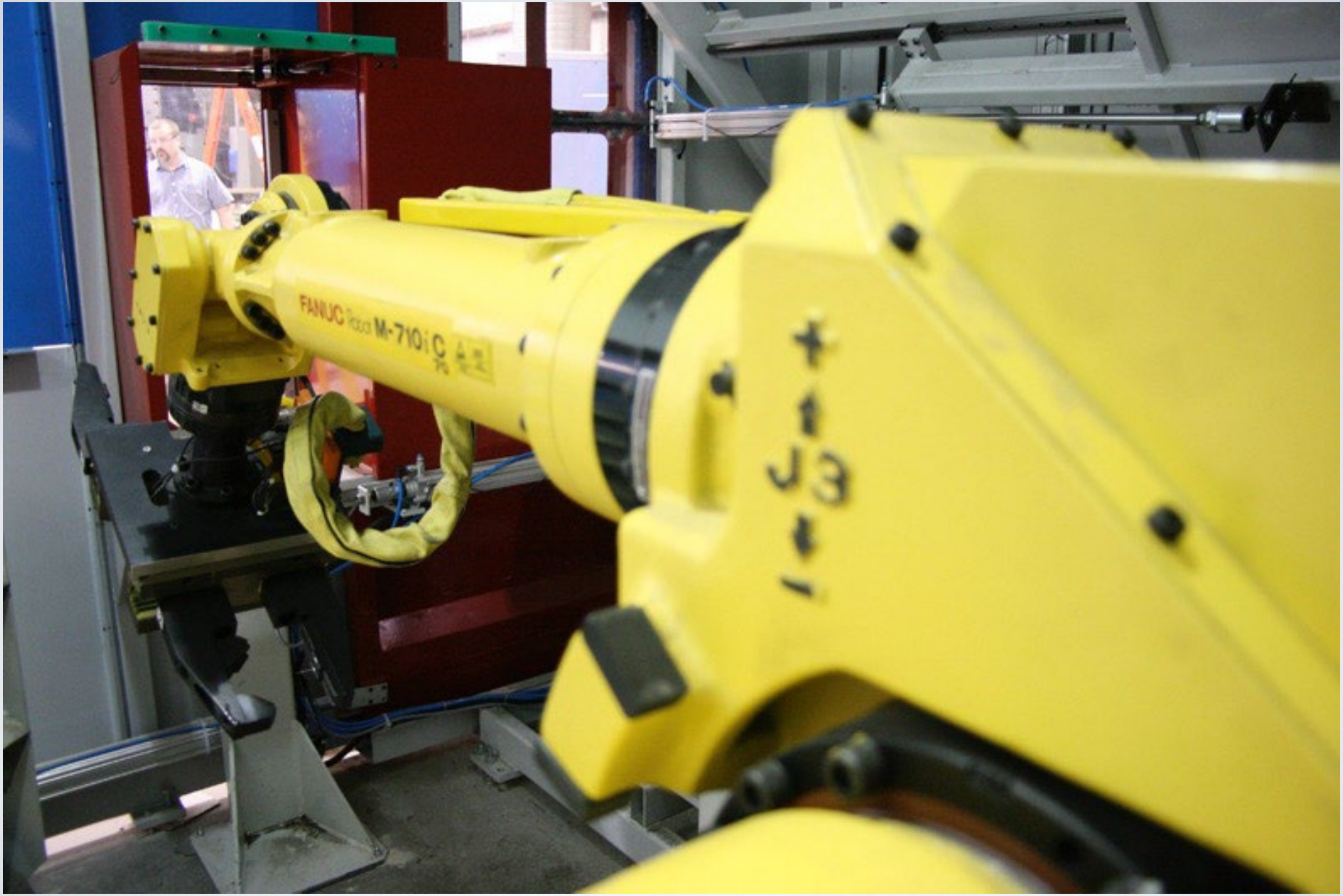


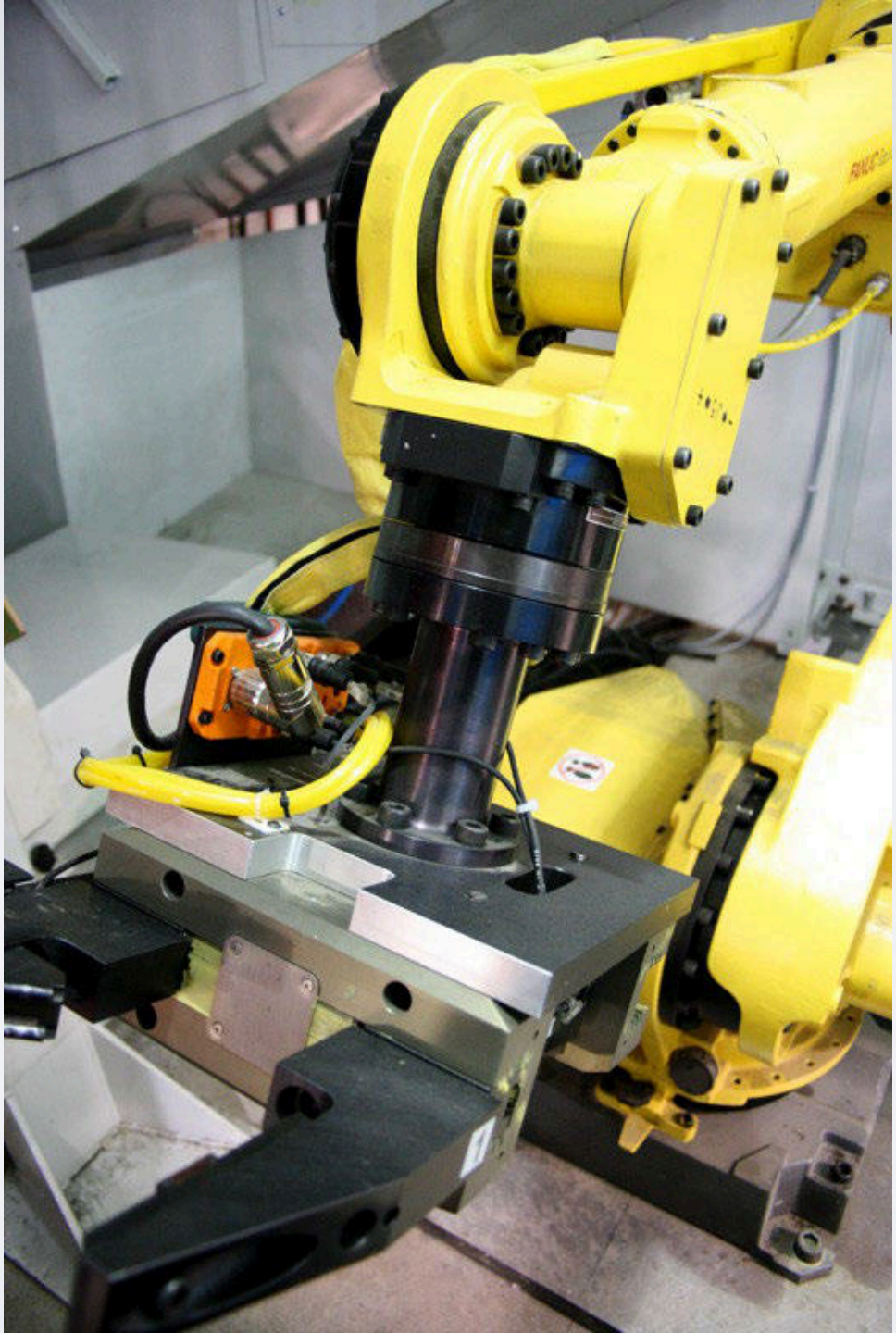


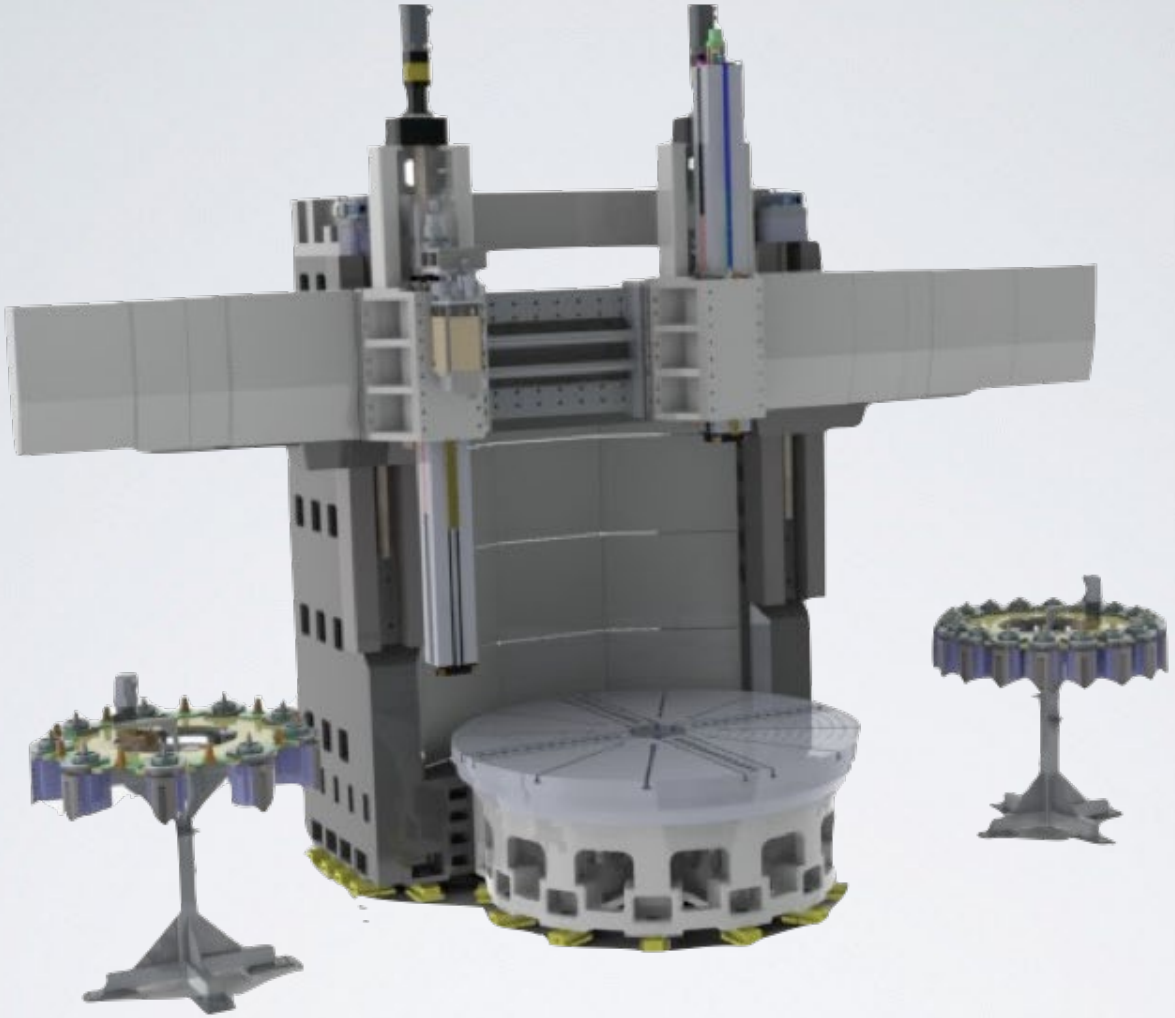





FANUC Robot M-710iC/70
J3
J2


FANUC Robot M-710iC
J3





REVELATION2 DC

DESIGN CONCEPT

- THE MAJOR COMPONENTS ARE DESIGNED FOR EASE OF PRECISION MANUFACTURE
- THE UNITS ARE DESIGNED FOR EASE OF PRECISION ASSEMBLY AND MAINTENANCE
- THE OVERALL TARGET IS TO PRODUCE THE MOST PRECISE POWERFUL MACHINE AND TO DO THIS AT AN ECONOMIC PRICE
- TURNING POWER OPTIONS UP TO 200Kw
- FULL POWER C AXIS DRIVE FOR CONTINUOUS ROTARY MILLING
- HIGH PERFORMANCE HYDROSTATIC TABLE BEARINGS FOR SUPER HEAVY TABLE LOADS AND EXCELLENT SPEED PERFORMANCE
- OPTIONAL CROSSED ROLLER MECHANICAL BEARINGS FOR HIGHER SPEEDS
- WORK HEIGHT OPTIONS UP TO 4000mm
- LOW HEIGHT FIXED RAIL MODELS (THE RING TURN) FOR RING TURNING

- LIVE SPINDLE OPTIONS
  - STANDARD ISO50, 34Kw, 4500 RPM, 401Nm, 70 BAR THRU COOLANT
  - OPTION - HSK100, 40Kw, 12000 RPM, 298Nm, 80 BAR THRU COOLANT

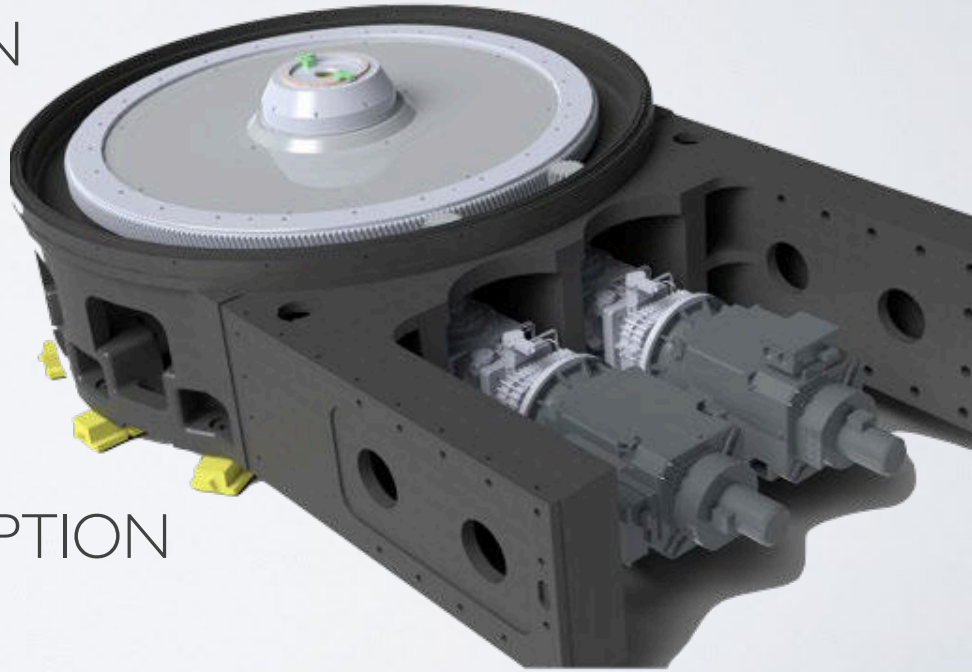
- GRINDING RAM AND GRINDING ATTACHMENT OPTIONS

- Y AXIS AND RIGHT ANGLE MILLING ATTACHMENTS

- ELLIPTICAL TURNING ATTACHMENTS

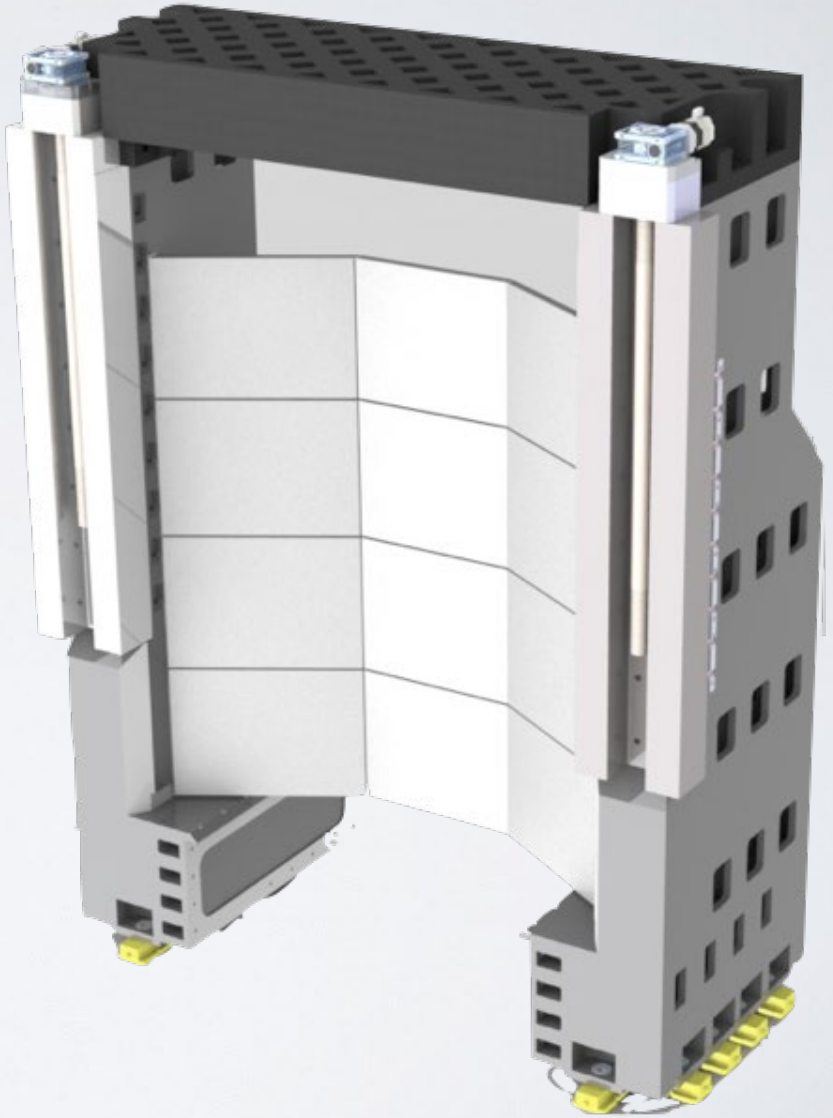
BASE & TABLE DRIVE ASSEMBLY

- MASSIVE PRECISION BASE CASTING
- EXCELLENT DAMPING
- EXTREMELY LOW DEFLECTION
- RIGID DRIVE UPTO 200Kw
- FULL POWER C-AXIS
- HYDROSTATIC BEARING
- CROSSED ROLLER BEARING OPTION
- EASE OF MAINTENANCE



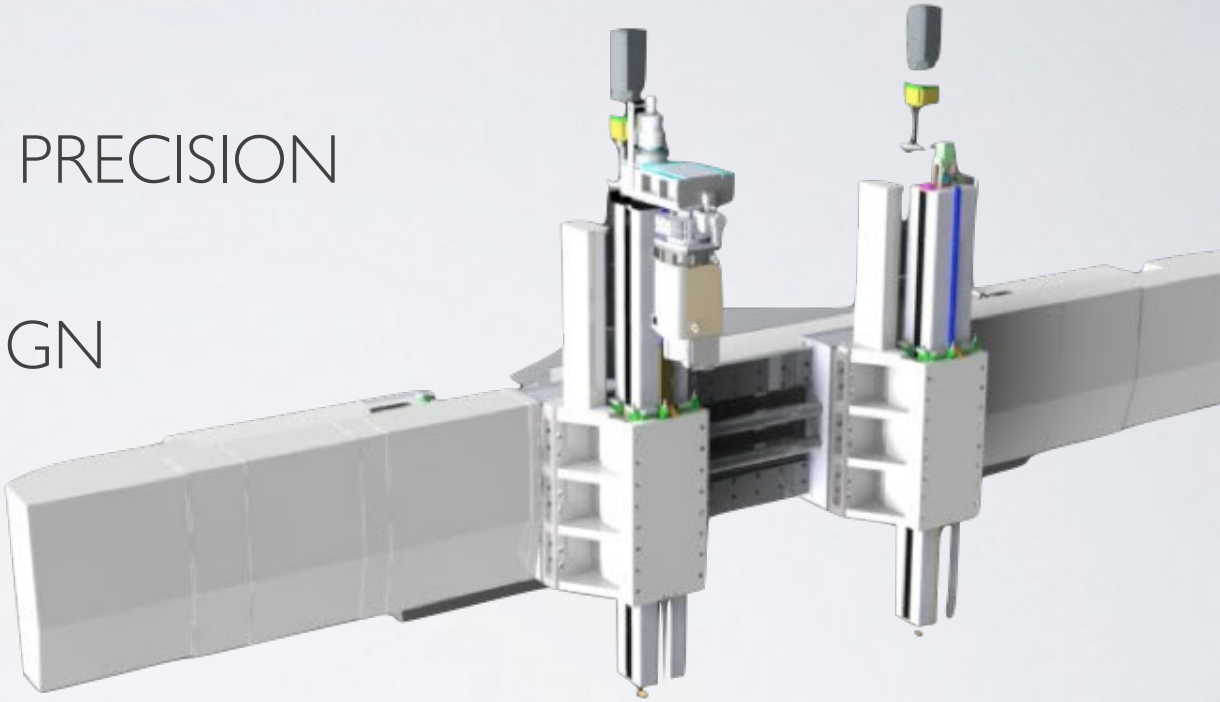
COLUMN ASSEMBLY

- MASSIVE CONSTRUCTION WITH EXCELLENT CORE BOX DISTRIBUTION
- EXCELLENT DAMPING
- EXCELLENT ASSEMBLY RIGIDITY
- DESIGNED FOR EASE OF ALIGNMENT



CROSS RAIL ASSEMBLY

- SUPER HEAVY HIGH PRECISION STRUCTURE
- PERFECT CORE DESIGN
- LOW DEFLECTION
- HIGH DAMPING
- 100x20 BALLSCREW WITH POWERFUL DRIVE PRODUCES 70695Nm CONTINUOUS TORQUE



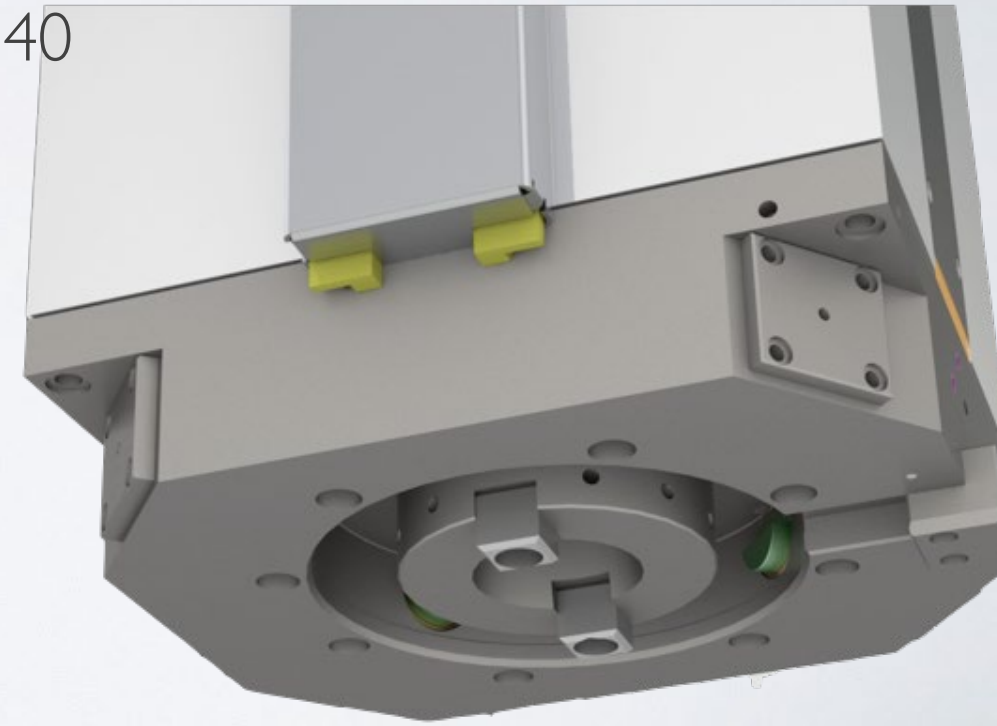
RAM HOUSING & Z AXIS ASSEMBLY

- STRUCTURE DIMENSIONED TO PRODUCE
  - EXCELLENT DAMPING
  - EXCELLENT RIGIDITY
- 100x12 BALLSCREW WITH POWERFUL DRIVE PRODUCES 58441Nm CONTINUOUS TORQUE



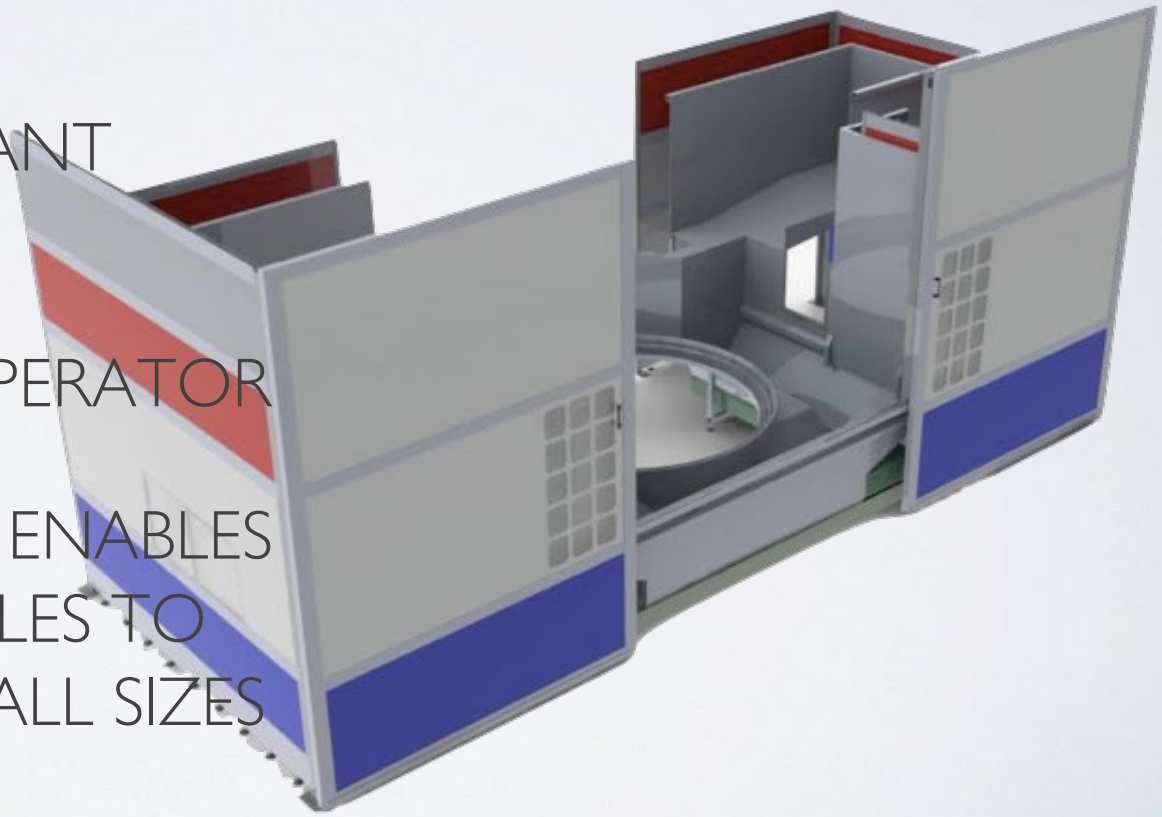
RAM ASSEMBLY (MODELS UP TO 5000mm)

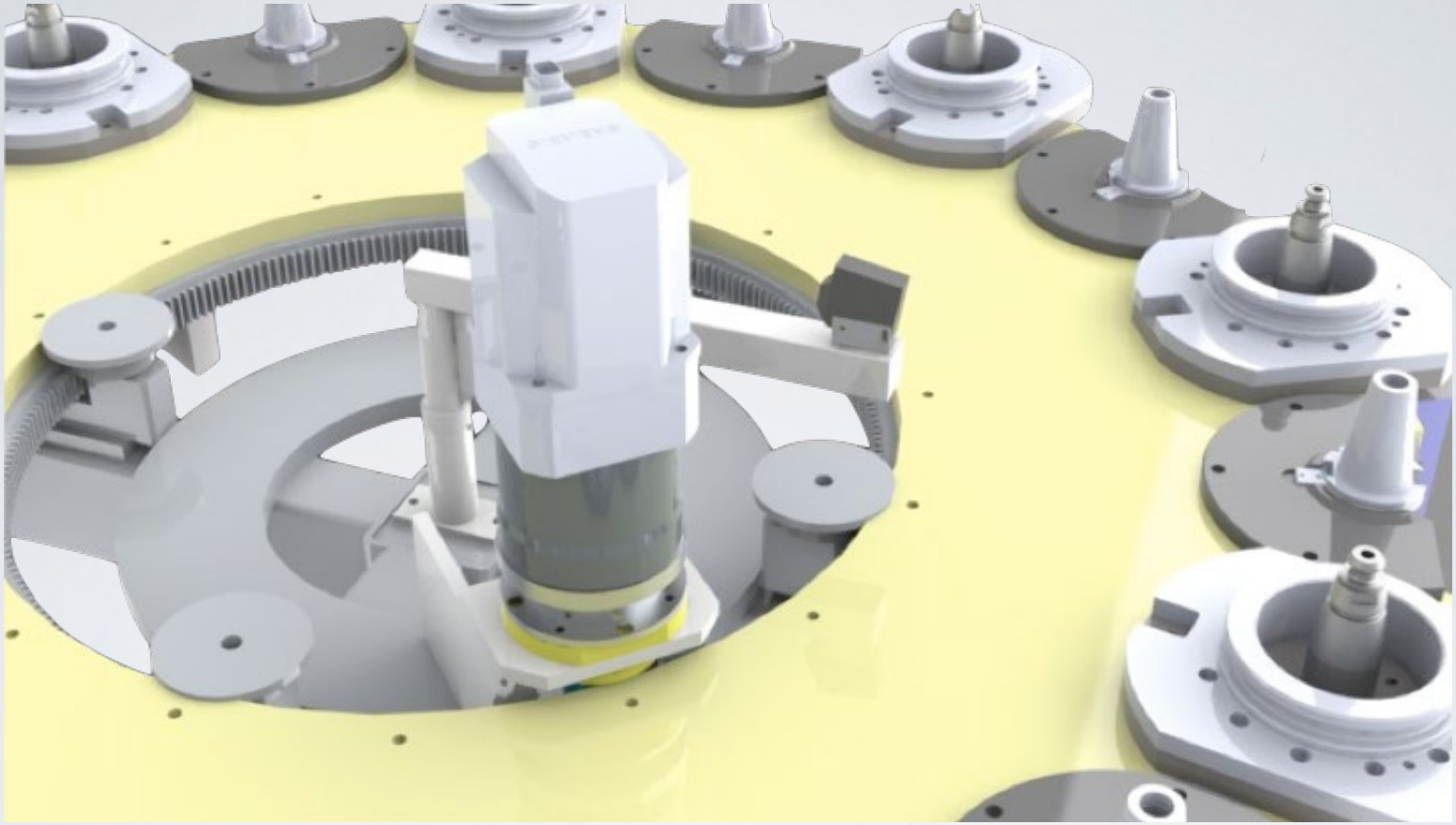
- MASSIVE STEEL FORGING
- 340 x 280 SECTION (400 x 340 ON 6000mm MACHINE)
- UPTO 1800mm STROKE (2200mm ON 6000mm MODEL)
- POWERFUL DUAL TOOL CLAMPING SYSTEM



GUARDING

- EXCELLENT FOR CHIP FLOW
- EXCELLENT COOLANT CONTROL
- EXCELLENT FOR OPERATOR
- MODULAR DESIGN ENABLES STANDARD MODULES TO BE ASSEMBLED TO ALL SIZES OF MACHINE

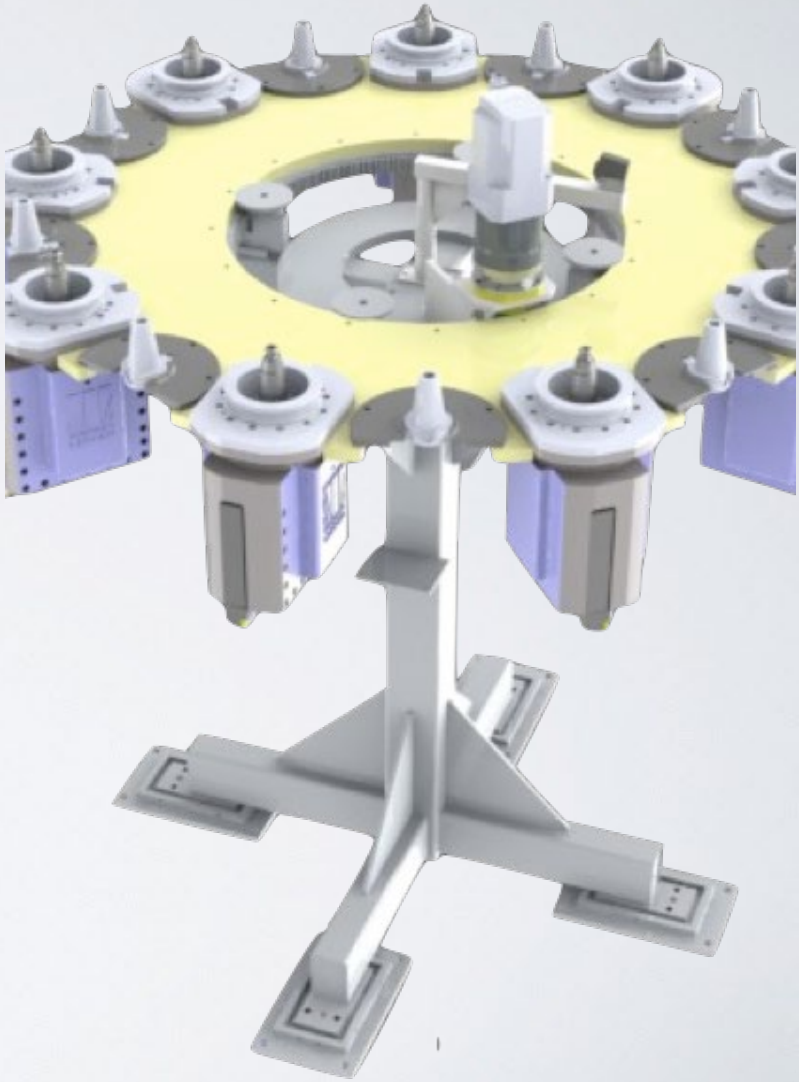




ACCESSORIES & OPTIONS

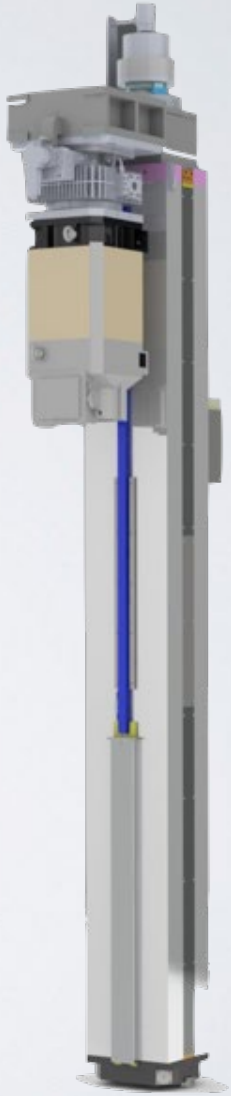
AUTO TOOL CHANGER

- 24 POSITION ON AEROTURN
- 24 POSITION ON REVELATION2
- 18 POSITION ON REVELATION DC
- UP TO 2500KGS TOTAL WEIGHT
- MIX STATIC AND LIVE TOOLS UPTO 250Kgs
- SILENT AND SMOOTH MOVEMENT
- OPTION - ROBOT TOOL LOADING SYSTEMS



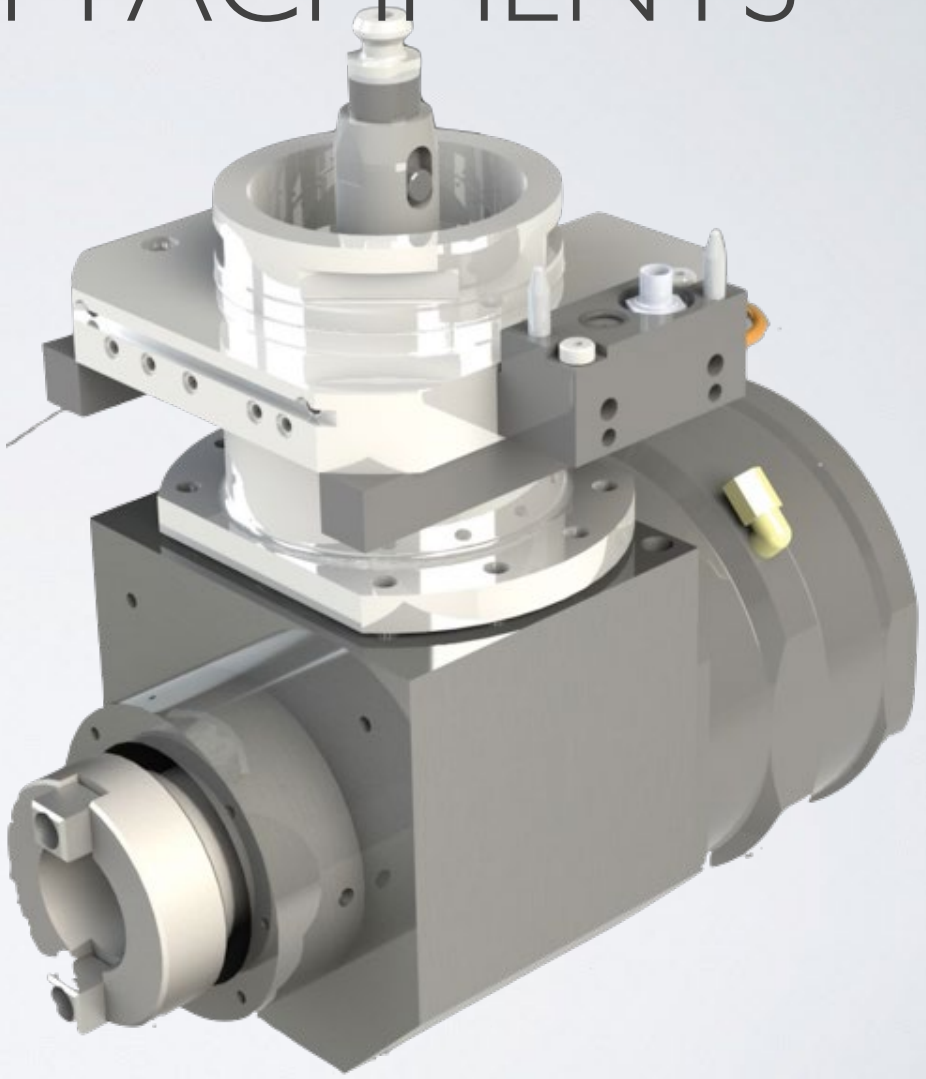
LIVE SPINDLE OPTIONS

- STANDARD - 34Kw, 4500RPM, ISO50, 401Nm TORQUE
- 1200mm TO1800mm STROKES
  - 2 SPEED GEARBOX
  - SPINDLE ENCODER
- ALTERNATIVE - HSK100, 40Kw, 12000RPM, 298Nm (UP TO 2200mm STROKE)



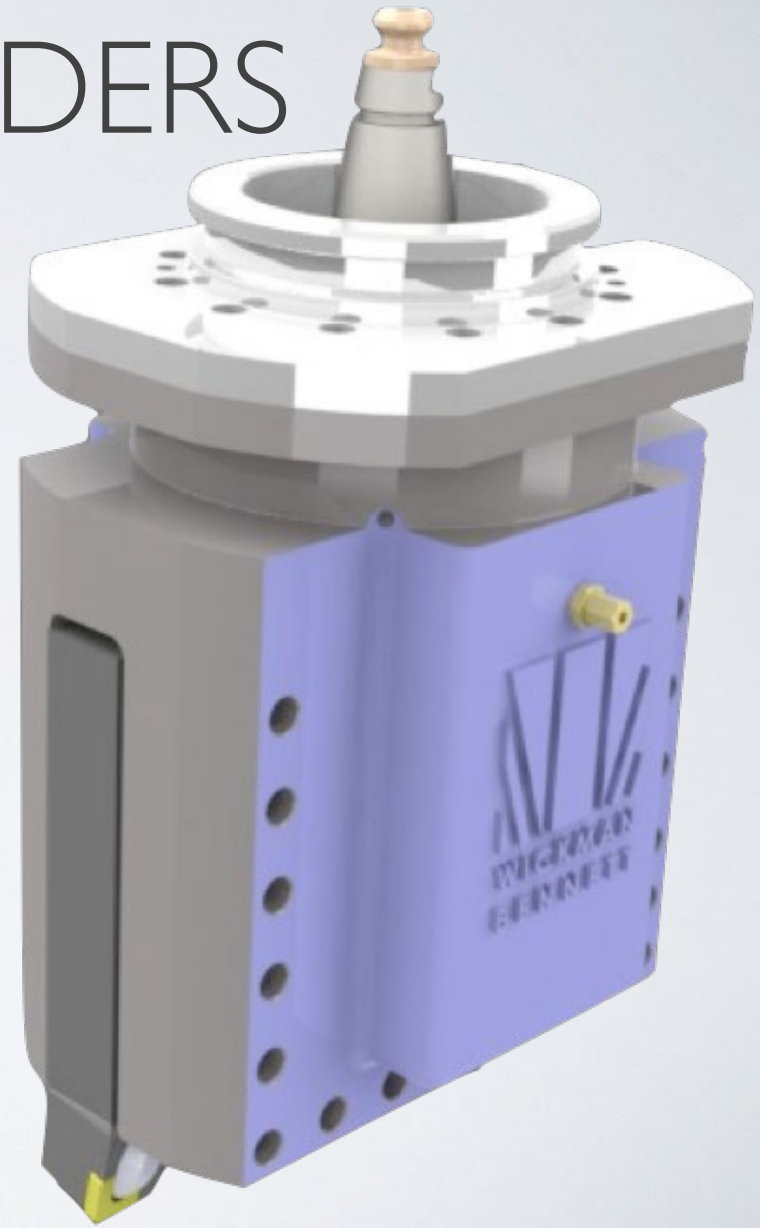
MILLING ATTACHMENTS

- HEAVY DUTY RIGHT ANGLE HEAD
- Y AXIS HEAD +/- 200mm STROKE



TURNING ATTACHMENTS & TOOL HOLDERS

- HEAVY DUTY TURNING TOOL HOLDERS
- MASTER TOOL BLOCKS FOR MULTIPLE CAPTO TOOL HOLDERS
- ELLIPTICAL TURNING ATTACHMENT

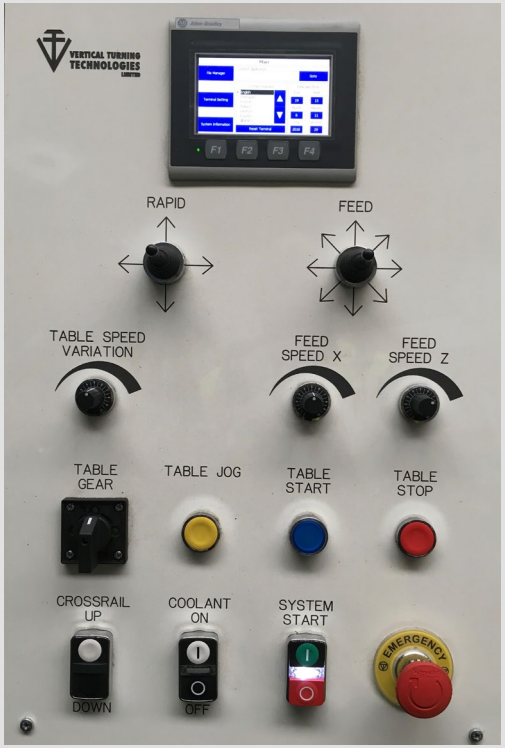


What a waste of potential!

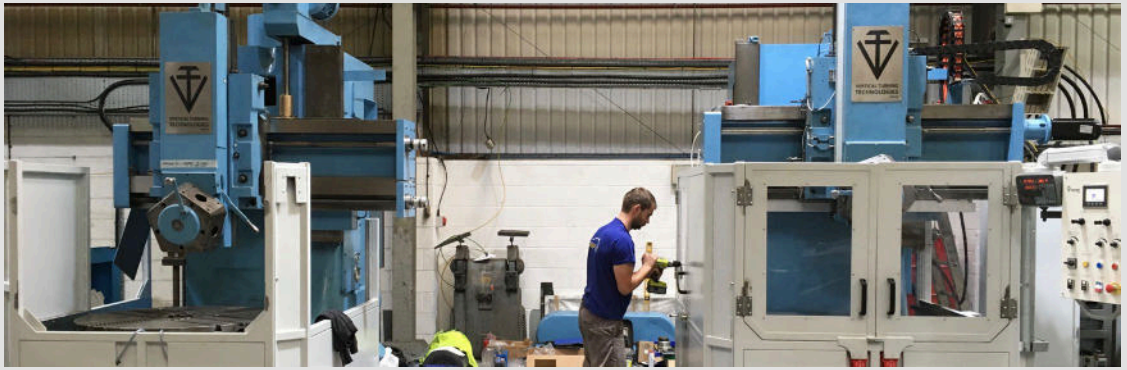
- Herion, the German company that had a large state supported partnership with Spark tried everything to restart the process. We would not install components that were below quality. Loss of face was not acceptable in China.
- We finished with the wide range of designs that you see but our income stream collapsed and the process was stopped, certainly in excess of 95% complete. Herion and Spark split up. Politics!

What to do now?

- The first time we were in this situation we developed the wonderful original W&B major castings into the Evolution CNC
- We decided to go the same low cost route while we recovered - this time for manual operators
- We have developed the VTT ManuPlus - three levels of modern day technologies that give new life to these machines - once again ‘new’ machines built on an original body - effective!



The VTT ManuPlus



Webster and Bennett vertical borers are renowned for long service
Most manual W&B machines use technology from the 1960's but the machine structure is so good it can be the donor machine for a VTT ManuPlus - operator controlled machines for the 2020's

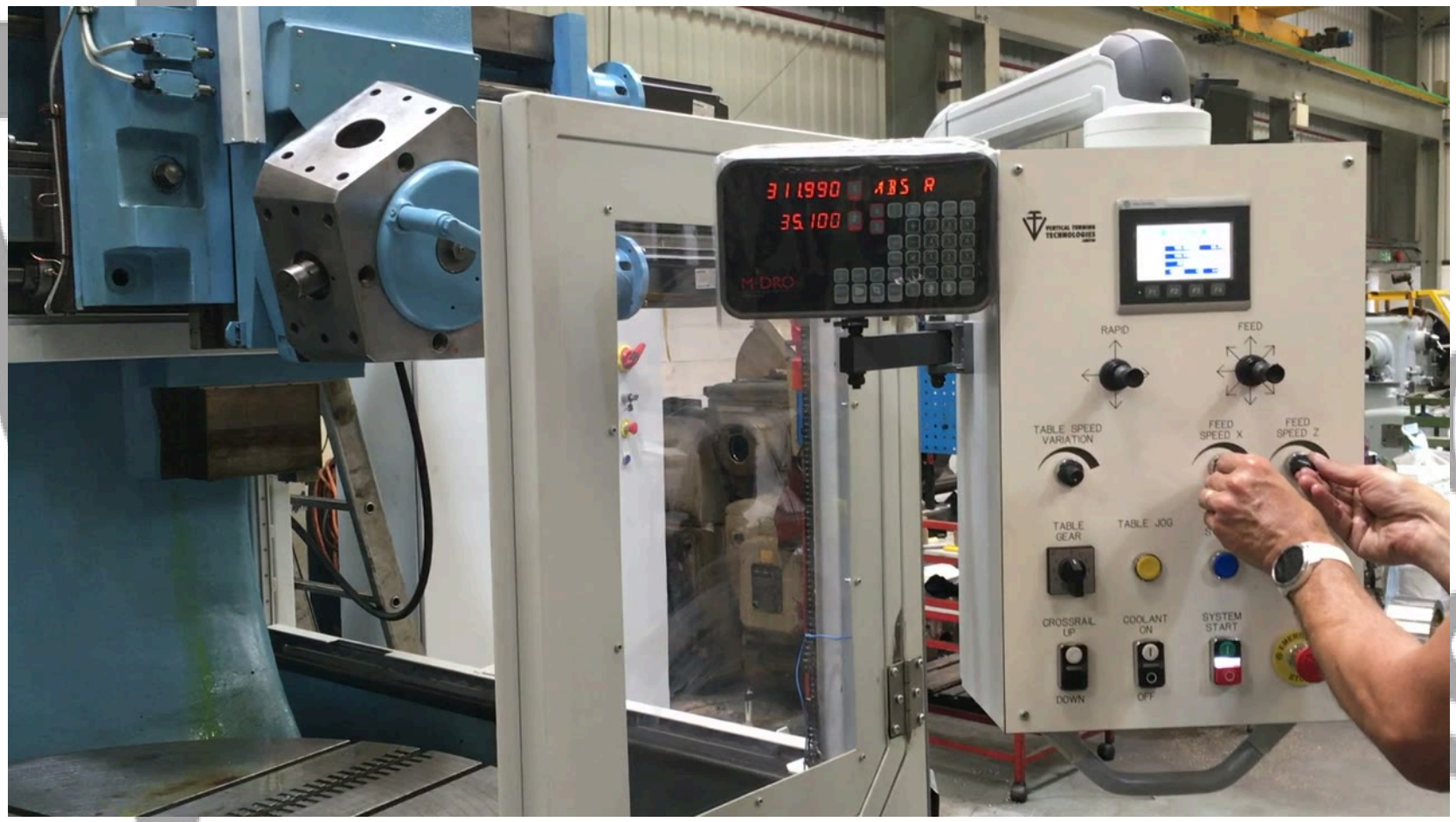
VERTICAL TURNING TECHNOLOGIES LIMITED

The original Webster & Bennett one piece body machines together with the totally reliable Timken bearings are not only great for conventional machine upgrades but are used also as donors to the Evolution range of CNC machines.



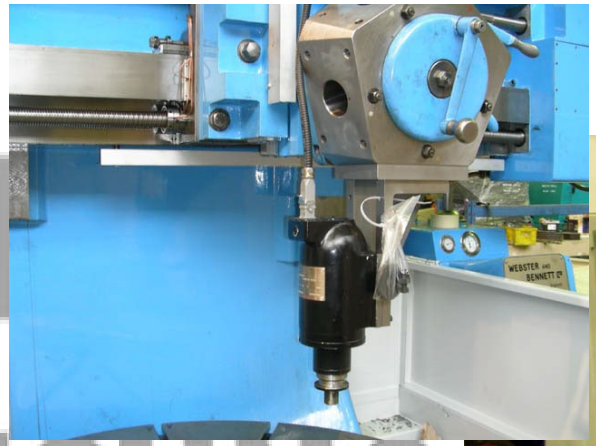


LIMITED


RAPID
FEED
TABLE SPEED VARIATION
FEED SPEED X
FEED SPEED Z
TABLE GEAR
TABLE JOG
CROSSRAIL UP
DOWN
COOLANT ON
OFF
SYSTEM START



The first machine we upgraded was for HAESL in 2004 and featured much improved operator control and high speed grinding application.

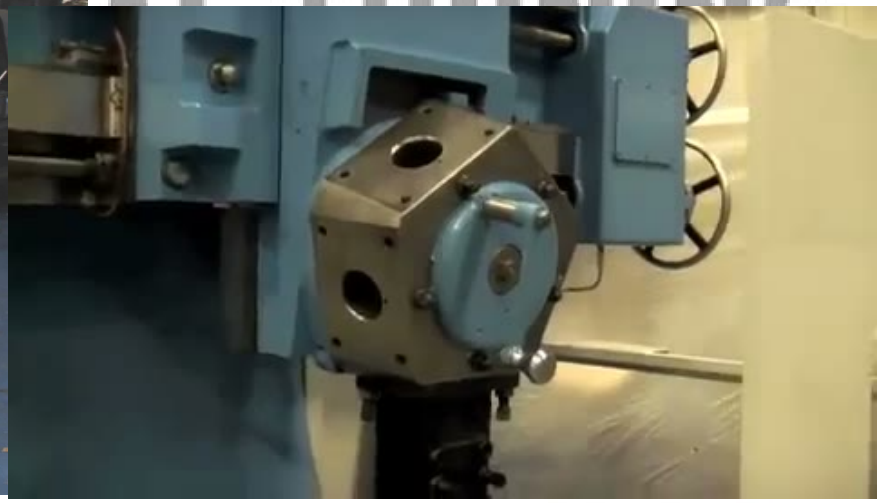




ECHNO
LIMITED



This is the third machine for HAESL in 2010. Click on the photo below to open the film that shows how much the controls had advanced. Since then it's got better and even more operator friendly.



LIMITED



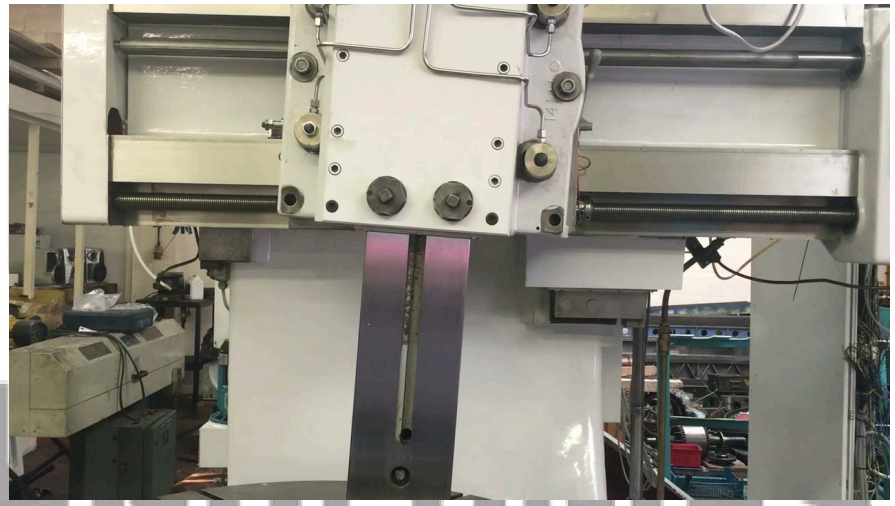


In 2014 we configured a machine that in addition to the table variable speed control has the benefits of ballscrew conversion to the axes, but especially new is the control of the ram swivel axis. From his pendant the operator controls unclamp swivel setting and re-clamp.



In 2015 we installed another swivelling ram option and upgraded a more basic machine. Click on the photo on the right just to see the smooth swivel movement. Clamping and un-clamping is automatically controlled by the operator from his pendant.





VERTICAL TURNING TECHNOLOGIES LIMITED





In 2015/2016 we had the opportunity to bring this machine into a specification and condition so that it could work for another 50 years. The machine was a 54Q with side head and it had the pendant control and was an advanced machine at the time of its original build.

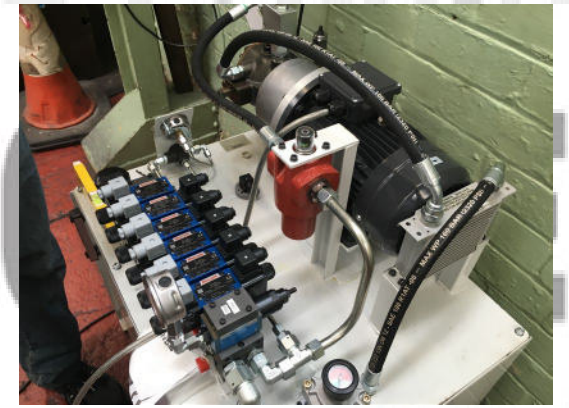




The 54Q was converted to a machine that the operators could take a new pride in and gave them speed control and feed and creed feed control with excellent sensitivity. Some of the old hydraulic problems were solved with the installation of a new design hydraulic package. Click on the top right photo to see the film of the operators first contact with the machine during testing.









G

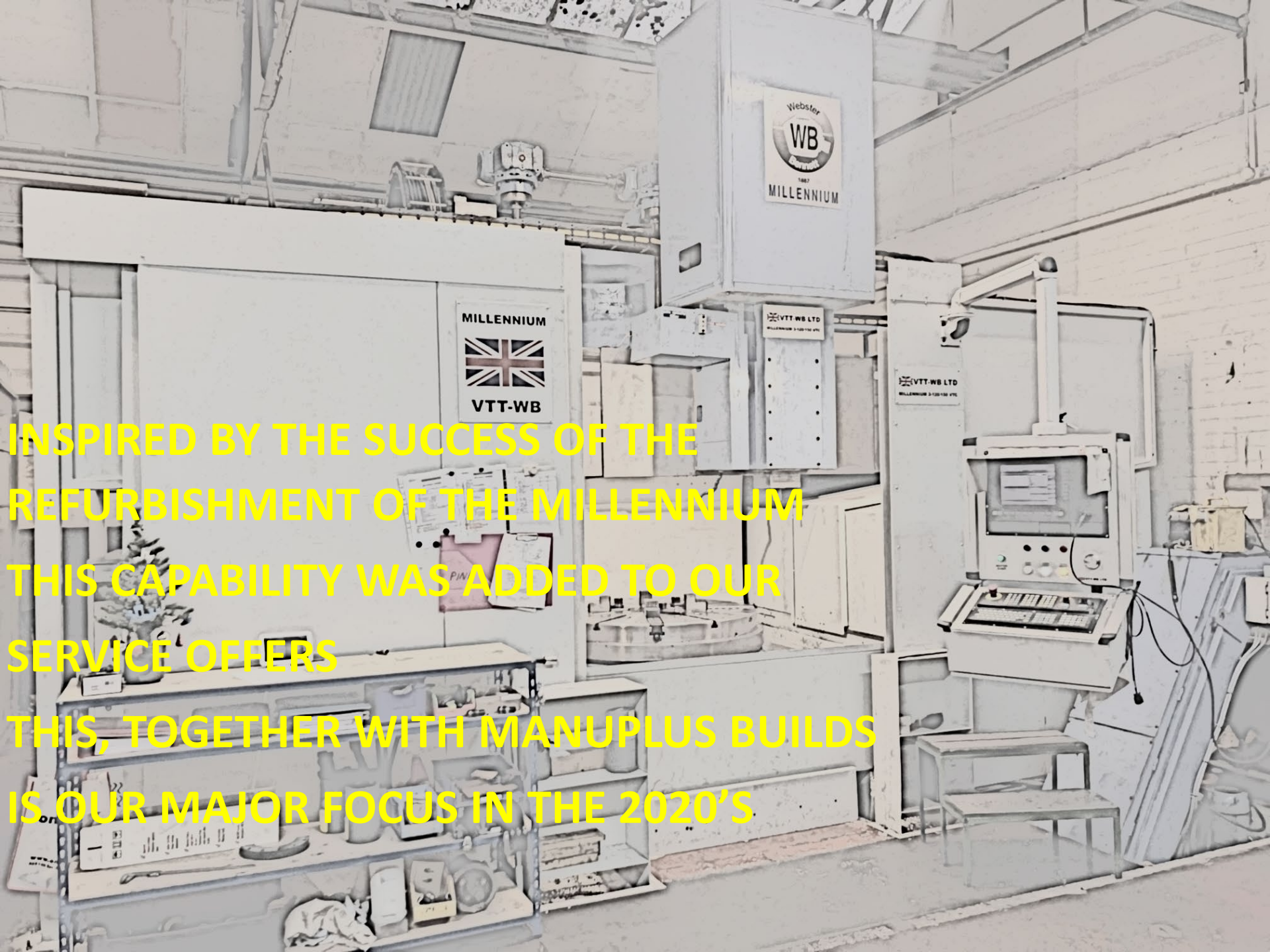
S

LIMITED

The Millennium CNC - my favourite

- The Millennium was designed to be the best and 1996 - 2000 it took Webster & Bennett back to the top of the world leader board
- In 2017 we refurbished a machine originally delivered 19 years earlier.
- Very little bodywork was necessary. The machine is back performing to new standards
- The quality of the original design makes it very cost effective to modernise these great machines


Webster
WB
Bernard
1887
MILLENNIUM



INSPIRED BY THE SUCCESS OF THE REFURBISHMENT OF THE MILLENNIUM THIS CAPABILITY WAS ADDED TO OUR SERVICE OFFERS

THIS, TOGETHER WITH MANUPLUS BUILDS IS OUR MAJOR FOCUS IN THE 2020’S


Webster
WB
Bennett
1887
MILLENNIUM
MILLENNIUM
VTT-WB
VTT-WB LTD
MILLENNIUM 3-120/150 VTC
PINK


Webster
WB
Bonnard
1897
MILLENNIUM
VTT
MILLENNIUM 200-250
Vertical Turning Technologies Ltd



The ultimate ManuPlus- hands on CNC

•The VTT ManuPlus - CNC

- Manual machine operators who may not like M codes and G codes will love the ManuPlus-CNC.
- ManuPlus-CNC will encourage manual machine operators to use their skills and experience with the great productivity of CNC
- One offs as usual - watch the set up process on the screen. The CNC program is created so if there may be repeats you have the CNC program already - and not an M or G code insight!


Vertical Turning Technologies Ltd
VTT
SC 2.0 CNC LM


VTT-WB LTD
VTT-WB LTD
Webster
WB
Bennett


Vertical Turning Technologies Ltd
VTT ManuPlus
DC 3.0 CNC LM
Vertical
Turning
Technologie
Sheffield
X2↔Z2
Vertical
Turning
Technologies
Sheffield
X1↔Z1

If this interests you please contact us – iain@vtt-wb.com







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TECHNOLOGIES LIMITED