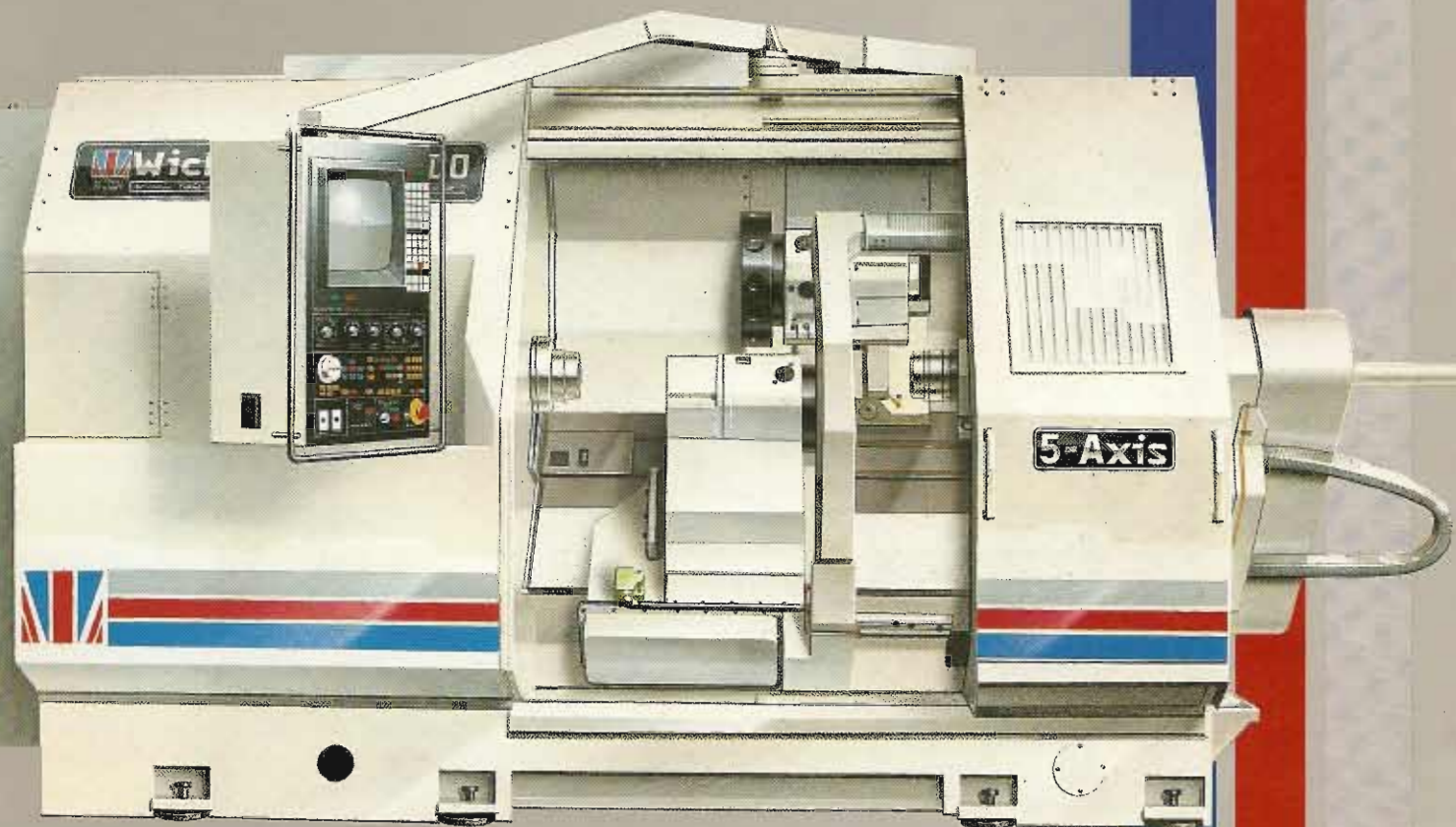


WICKMAN

52-200 CNC Series

COMPLETE TURNING CENTRES



MODULAR CONSTRUCTION – MULTI AXIS
Bar and Chucking Models

A VERSATILE RANGE OF 2, 3, 4 & 5 AXIS
TURNING CENTRES WITH THE ABILITY TO
PERFORM SIMULTANEOUS OPERATIONS AND
FINISH COMPONENTS ON A SINGLE MACHINE.



WICKMAN
BENNETT

50 Years Turning Experience

The Wickman modular range of turning centres has been designed and developed by Wickman Bennett Engineers at Coventry, Great Britain, building on 50 years of turning experience (10 years C.N.C.) and by counselling the skills and requirements of

manufacturers, including our associate company, Ketlon (U.K.) Limited – suppliers of precision component parts to the automotive, aeronautical, oil and energy industries.

Consider the following features now available to meet industries ever-increasing manufacturing demands for:-

- Productivity
- Flexibility
- Reliability
- Increased Product Quality

Design Features

INCLUDE:-

- Simultaneous machining on each turret substantially reducing cycle times.
- Driven tooling available on each turret resulting in shorter rapid cycle times and complete secondary operations.
- Automatic bar loading with magazine/storage – increased efficiency by reducing loading time.
- Spindle positioning available with $2\frac{1}{2}^\circ$ indexing increments and fully programmable 'C' axis – offering turning and secondary operations in a single set-up.
- Working area conveniently positioned on the 45° slant bed – for ease of setting and for compatibility with robot, gantry or other handling systems.
- Choice of C.N.C. controls offering full graphics, operator prompting, diagnostics and other features.
- Rigid bed construction with isolated drive – providing stability, high accuracy and consistent quality.
- Induction hardened ground ways with Turcite coated mating surfaces and central lubrication system.
- Tool breakage detection available – with the ability to suspend operation or automatically replace with back-up tool.
- In-process gauging available – to enable continuous monitoring of statistical process control.
- Tool wear compensation available – tools are automatically monitored for wear with data transmitted to the C.N.C. for automatic compensation of off-sets.
- Part catcher within the C.N.C. cycle – avoiding damage following parting-off operation.



Construction

BED

- Heavily ribbed, robust box section, 'Meehanite' high grade cast iron base – for strength and rigidity.
- 45° slant bed – designed for easy access to work area and free chip flow.
- Drive and gearbox isolated from headstock – achieving optimum thermal and mechanical stability under operating conditions.
- Slideways are induction hardened (RC 60) and ground with coated mating surfaces – providing low friction, linear bearing surfaces.
- Linear and rotational bearing surfaces are automatically lubricated from a central lubrication system.

DRIVE

- Spindle Drive – driven by an 11 kW (15 hp) DC motor through a 2 speed automatic gearbox via a 'V'-belt.
- Axis Drives – AC axis drive motors used throughout for smooth rapid motion of all slides. Precision ball screws employed throughout.

SPINDLE

- Substantial and torsional stiffness in spindle provides rigidity under heavy cutting loads at high speeds.
- Spindle positioning available with $2\frac{1}{2}^\circ$ indexing increments and fully programmable 'C' axis. A readily accessible encoder continuously measures the radial position of the main spindle.
- Spindle rotation is reversible.

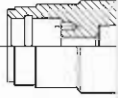
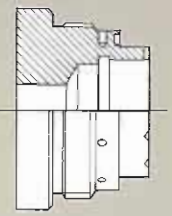
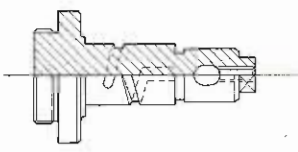
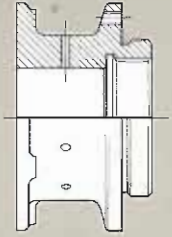
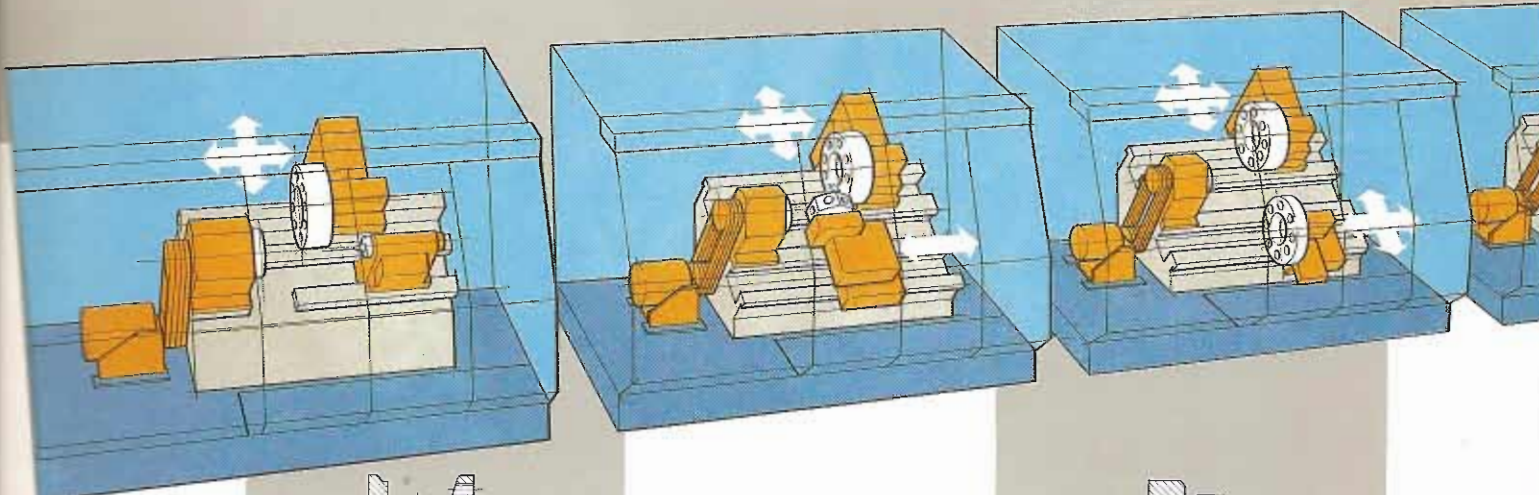
TURRETS

- Large diameter precision ground curvic couplings ensure a positional accuracy of ± 2 seconds of arc.
- Bi-directional rotation with skip indexing minimizes non-productive time.
- Coolant fed to the point of the tool through the turret.
- Powerful highly responsive indexing motors.

TAILSTOCK (2 AXIS MACHINE)

- The tailstock and quill can be positioned, clamped/unclamped by C.N.C. command.
- The quill is fitted with a live centre.

Modular Concept



Machine Specification

Typical Chucking Component

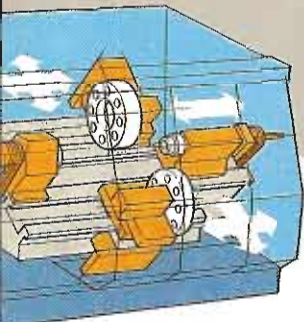
Typical Bar Component

Typical Chucking Component

Typical Bar Component

	2 AXIS		3 AXIS		4 AXIS		5
LOADING CAPACITY							
Capacity	52mm	2.05in	52mm	2.05in	52mm	2.05in	52mm
Max capacity	200mm	7.87in	200mm	7.87in	200mm	7.87in	200mm
Max diameter	270mm	10.63in	270mm	10.63in	270mm	10.63in	270mm
Max length	555mm	21.85in	345mm	13.58in	555mm	21.85in	325mm
Max diameter over bed	596mm	23.46in	596mm	23.46in	596mm	23.46in	596mm
Travel – longitudinal	555mm	21.85in	345mm	13.58in	555mm	21.85in	325mm
Travel – traverse (upper slide)	210mm	8.27in	210mm	8.27in	210mm	8.27in	210mm
Travel – traverse (lower slide)	—	—	—	—	185mm	7.28in	185mm
Max operation spindle – collet bore	—	—	—	—	—	—	52mm
Max operation spindle – pick-up stroke	—	—	—	—	—	—	100mm
Max operation spindle – ejection stroke	—	—	—	—	—	—	125mm
DRIVE SECONDARY SPINDLE DRIVE							
Max continuous / 30 mins	11kW/16kW (15/22hp)	—	11kW/16kW (15/22hp)	—	11kW/16kW (15/22hp)	—	11kW/16kW (15/22hp)
Max speed	6000 rpm	—	6000 rpm	—	6000 rpm	—	6000 rpm
Max rotation	Bi-directional	—	Bi-directional	—	Bi-directional	—	Bi-directional
Max feed back method	Encoder	—	Encoder	—	Encoder	—	Encoder
DRIVE							
Max traverse rate	10m/min	32.81/min	10m/min	32.81/min	10m/min	32.81/min	10m/min
Max thrust	8,500N	—	8,500N	—	13,000N	—	13,000N
CONTROL							
Max time – (degrees/seconds)	Diplomatic BSV-N 30°/0.7 45°/0.81 180°/1.83		Diplomatic BSV-N 30°/0.7 45°/0.81 180°/1.83		Diplomatic BSV-N 30°/0.7 45°/0.81 180°/1.83		Diplomatic BSV-N 30°/0.7 45°/0.81 180°/1.83
TOOL SLIDE (2 axis)							
Max stroke	Driven disc	Non-driven disc	Driven disc	Non-driven disc	Driven disc	Non-driven disc	Driven disc
Max number of tooling stations – driven	4	—	4	—	4	—	4
Max number of tooling stations – non-driven	8	12	8	12	4	8	4 or 8
TOOL SLIDE (2 axis)							
Max stroke	—	—	—	—	Driven Disc	Non-driven disc	Driven disc
Max number of tooling stations – driven	—	—	—	—	4	—	4
Max number of tooling stations – non-driven	—	—	—	—	4	8	4 or 8
TOOL SLIDE (single axis)							
Max stroke	—	—	Driven hexagonal	—	—	—	—
Max number of tooling stations – driven	—	—	6	—	—	—	—
TOOL CHANGING							
Max diameter	70mm	2.76in	—	—	—	—	—
Max stroke	80mm	3.15in	—	—	—	—	—
Max time	Rohm live centre		—	—	—	—	—
COOLANT TANK	100 Litres	26 Gallons	100 Litres	26 Gallons	100 Litres	26 Gallons	100 Litres
COOLANT PUMP	125 Litres/0.375kW/68 Litres per min (33 Galls)	18 US Galls per min	125 Litres/0.375kW/68 Litres per min (33 Galls)	18 US Galls per min	125 Litres/0.375kW/68 Litres per min (33 Galls)	18 US Galls per min	125 Litres/0.375 (33 Galls)
WEIGHT							
Max weight	3515mm	138ins	3415mm	134ins	3515mm	138ins	5115mm
	2000mm	79ins	2000mm	79ins	2000mm	79ins	2040mm
	2150mm	85ins	2150mm	85ins	2150mm	85ins	2275mm
	6,400kg	14,100 lbs	6,510kg	14,350 lbs	6,660kg	14,680 lbs	7,280kg
POWER REQUIREMENTS	24.5 KVA (33hp)		25.5 KVA (34.5hp)		25.5 KVA (34.5hp)		33 KV

5 Axis Machine



Component

5 AXIS

2.05in
7.87in
10.63in
12.80in
23.46in
12.80in
8.27in
7.28in
2.05in
39.37in
4.92in

5.5kW/8kW (7.5/11hp)
100 rpm
Incremental
encoder

32.81/min
0.000N

Automatic BSV-N
180°/1.83

Non-driven disc
8 or 12

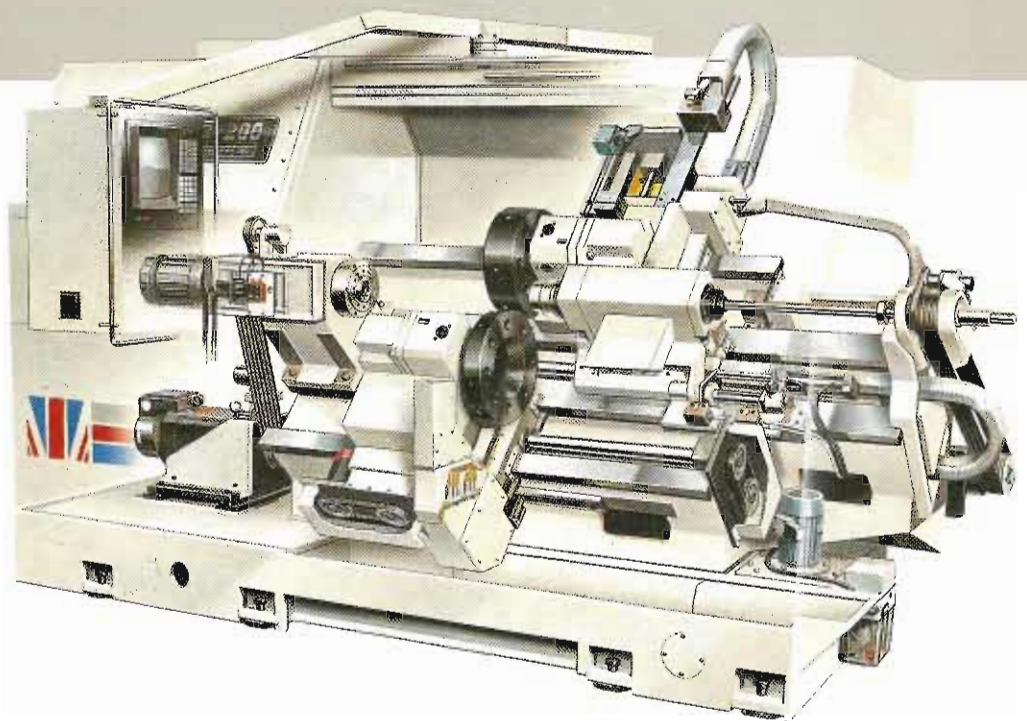
Non-driven disc
8 or 12

—
—
—
—

26 Gallons
kW/62 Litres per min
(18 US Galls per min)

201ms
80ms
90ms

16,050 lbs
A (44.5hp)



5 Axis Design Features

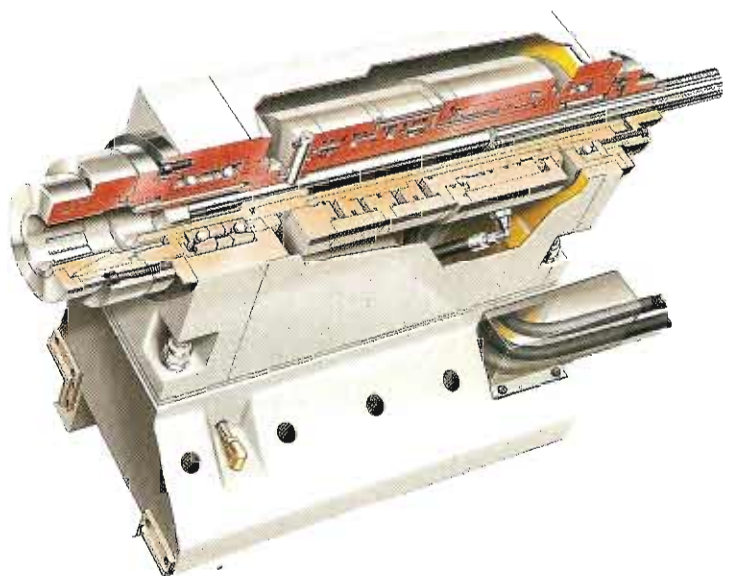
Second Operation Spindle

Incorporating all the features of the 2, 3 and 4 axis machines with the addition of:-

- Sliding head secondary operation spindle – this heavy duty unit permits simultaneous secondary operations at the rear end of component by using tools, including driven tools, on the lower turret whilst initial turning operations are carried out on the main spindle using the upper turret also with driven tools. The complete component which would conventionally require two operations, can be produced in one set-up and within the cycle time of producing the longest of the two operations. Simply, two operations can be achieved for the price of one.

- Secondary operation spindle is capable of synchronous running with the main spindle. Revolving components are transferred to the rear turning position (during parting-off operation in the case of bar machines) – thus eliminating any likelihood of run-out, parting-off pips and marking on chucking diameter.

- Part catcher within the C.N.C. cycle at secondary operation spindle – to eliminate damage and orientate components for compatibility to robot or gantry unloading.



CNC Control Systems

- A variety of control systems are available including the latest "state of the art" systems from Fanuc, G.E. and Siemens. Current systems available include:-

Fanuc 11TT-A (4 & 5 axis model)
 G.E. 2000T (3 axis model)
 G.E. Mark Century One T+ (2 axis model)



FANUC 11TTA



GE 2000T



GE MARK CENTURY ONE T+

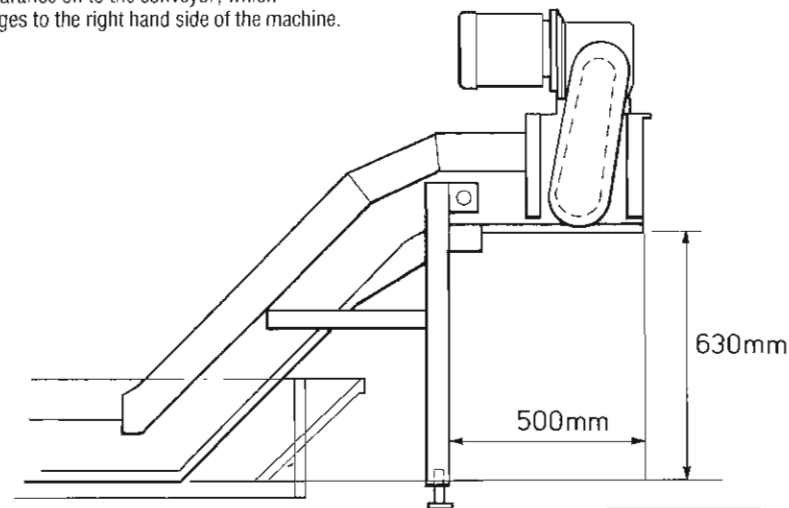
Features include:-

- Conversational multi-language programming and diagnostic systems.
- All data can be stored in bubble memories to protect against loss of data during power failure.
- Calculations for inter-section points, co-ordinated values, and other complicated data are no longer required. By entering the data described on the workpiece drawings, selected controls can do the rest.
- Graphic displays for convenient programme verification. The trace function can monitor the actual machining in real time on the C.R.T. display allowing the operator to know exactly where his tool is during the operation.

Chip Conveyor



- Located under the 45° slant bed affording excellent chip clearance on to the conveyor, which discharges to the right hand side of the machine.



Automatic Bar Loading System



- Bar loading time greatly reduced due to magazine load/storage.
- Suitable for bars of any shape up to 52mm.
- Offered as standard with solid steel guides or Dupont Hytrel guides reducing noise levels by 50%.
- Re-setting from one bar to another can be carried out within a few seconds.
- Three model lengths available.
Up to:- 3500mm (11' 6")
4200mm (13' 9")
6200mm (20' 4")

Units can be supplied to customers own length specification.

Also in the WICKMAN BENNETT Machine Tool Range

- WICKMAN MULTI SPINDLE BAR AND CHUCKING AUTOMATICS.
- WEBSTER & BENNETT VERTICAL TURNING LATHES.
- WICKMAN OPTICAL PROFILE GRINDING MACHINES.
- WICKMAN C.N.C. OPTICAL PROFILE GRINDING MACHINES.
- MULTI SPINDLE AND SINGLE SPINDLE BAR LOADERS FOR ALL TYPES OF MACHINE.
- MACHINE RE-MANUFACTURING AND RECONDITIONED AT BOTH WICKMAN BENNETT AND KETLON (U.K.) LIMITED.



Wickman Bennett Machine Tool Co. Ltd was formed by its parent company Ketlon (U.K.) Ltd in 1984, following the acquisition of Wickman Automatic Lathes and Webster and Bennett from the John Brown Group. The Wickman Bennett and Ketlon combined facility and management expertise, affords a unique opportunity to strengthen the operation and endorses Wickman Bennett's determination to maintain their position among the world's leading machine tool makers.

Wickman Bennett Machine Tool Co. Ltd, is a member of the Ketlon Group

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We reserve the right to alter the specification of our machines without prior notice.

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