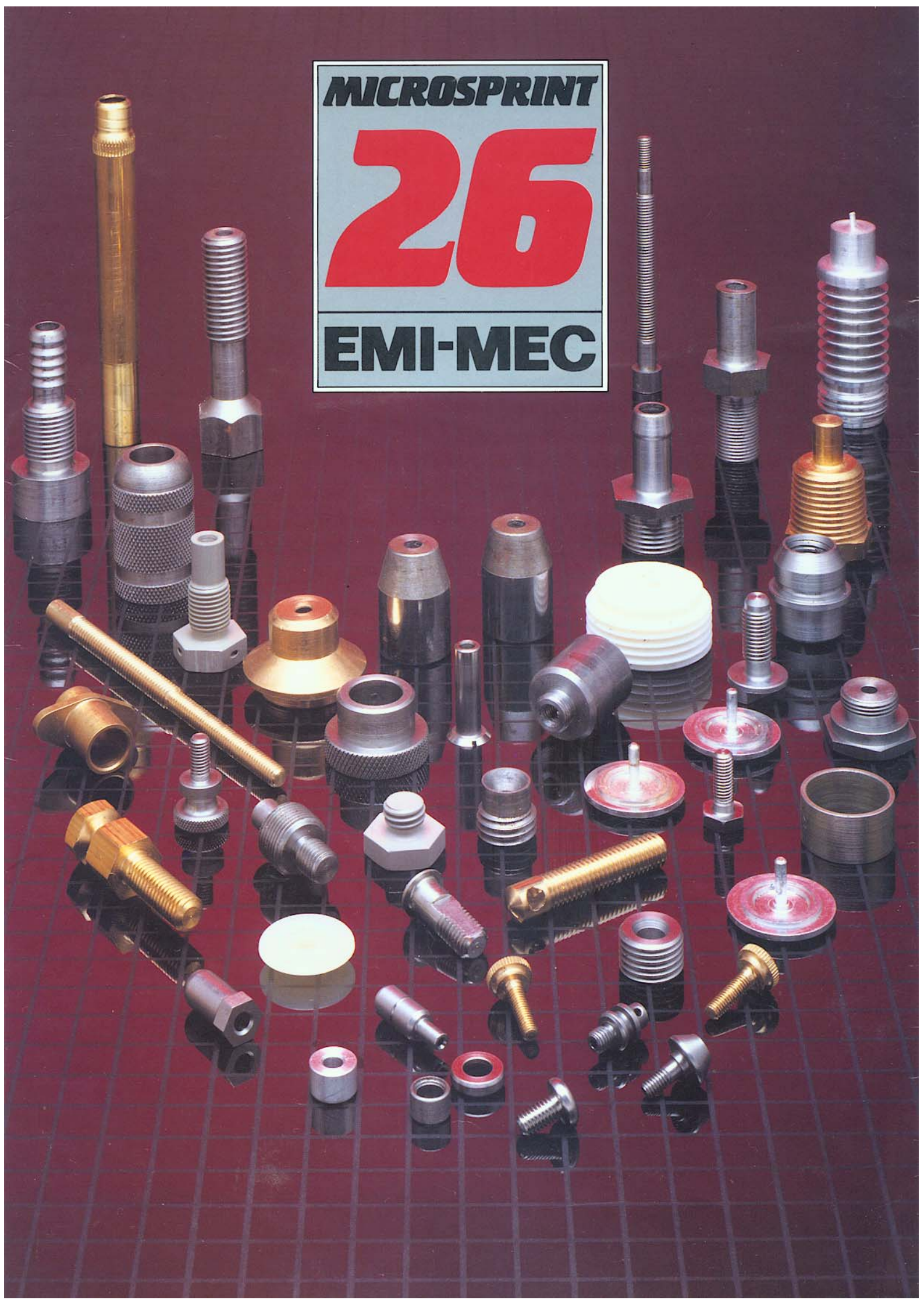

MICROSPRINT
26
EMI-MEC

COMPUTER ENHANCED TURNING today's most COST EFFECTIVE TECHNOLOGY

Combining multi-slide productivity advantages with computer control flexibility, the MICROSPRINT 26 has been inspired by EMI-MEC's 30 years experience in providing "Cost Effective" solutions for the production of 50 to 5000 batches of bar turned parts.

A single spindle, multi-slide, turret automatic, the MICROSPRINT 26 has been specifically developed for the consistent, accurate and fast production of turned parts up to 26mm dia.

The unique Computer Enhanced Turning *CET* control, provides the MICROSPRINT 26 with the relevant benefits of full CNC turning, at a fraction of its cost and complexity!

EMI-MEC, with over 12,000 machines and systems installed world-wide, understands the need of turned parts manufacturers for a high specification, no compromise automatic offering good value. The MICROSPRINT 26 meets that requirement, admirably....

MICROSPRINT 26 EMI-MEC

CET COMPUTER CONTROL

All machine functions are programmed through the *CET* microprocessor control.

The polyester keyboard is proof against the ingress of dirt and coolant. Its pressure sensitive keypads give tactile response, are labelled in plain language and provide the means for information entry.

A function prompt LED displays the line programmed and two lines before and after, for clarity when programming overlapping operations.

Programming can be in Metric or Inch system and is logical and sequential, requiring the minimum of training as there are no codes to learn.

PROGRAMMING

- select function by pressing appropriate key
- enter required value on the number keypad ie; travel: feedrate: turret position: speed etc...++ (alternatively travel can be set using teach & learn hand-wheel)
- entry is displayed for verification prior to entry
- press data entry key
- repeat for other functions in sequence required

Overriding corrections can be made at any time to all functions.

Incorrect program sequencing or omissions are signalled by an error display to prompt remedial action.

All slides may be operated together with full overlapping of operations independent of each other.

Canned cycles for turret slide forward & reverse; peck drilling; tapping; feed bar to stop are provided to aid fast and accurate programming.

Feedrate correction can be made during machining cycle, which is invaluable in developing best possible cycle times.

The system has electronic closed loop feed back monitoring of the turret slide to ensure precise feed and accurate positioning control.

Batch/cycle counting with completion shut down is provided as an aid to efficient unmanned operation.

A comprehensive diagnostic facility is incorporated to assist in tracing electrical faults.

Storage for 300 lines (approximately 25 part programs) is available within the control's memory.

MACHINE CONCEPT

The MICROSPRINT 26 is a logical, progressive development of EMI-MEC AutoSprint and Microsprint series of multi-slide programmable automatics and takes advantage of the latest advances in microprocessor control technology.

An all new design, the MICROSPRINT 26 reflects the best of current technology but remains compatible for use with most existing EMI-MEC tooling and equipment.

Control of the three headstock slides, six station turret and all machine functions is by a dedicated system, microprocessor based, developed and patented by EMI-MEC Ltd.

This Computer Enhanced Turning **CET** control is very easy to learn and use. All functions are in plain language with no codes. Its simplicity and logic makes for fast accurate programming.

Only those CNC facilities relevant to the specific needs of the MICROSPRINT 26 are incorporated in the **CET** control, giving it a high specification/cost ratio.

BASE

The fabricated stress relieved base features a 200mm wide flat top, "T" section, full machine length bedway.

Excellent swarf clearance is achieved by 30° sloping pans to front and rear of the bedways. These in conjunction with the vertical bedway chute between turret and cross slide, assists swarf movement to a collection and drain area over the large and accessible coolant tank.

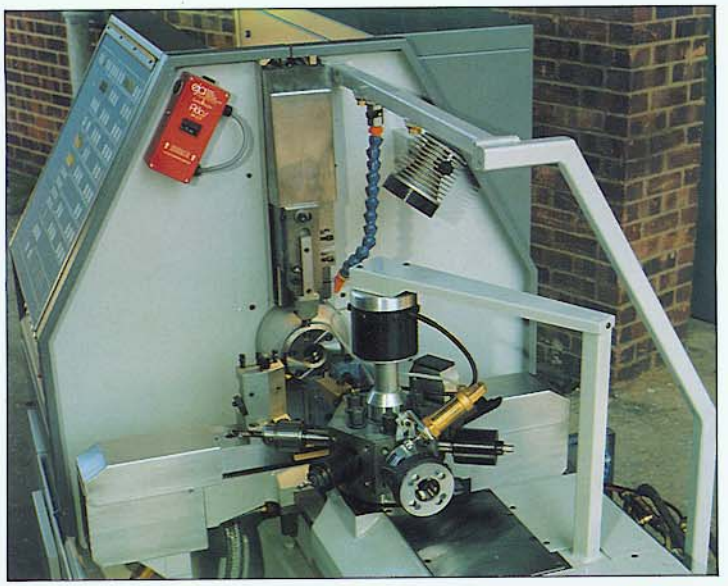
TURRET & SLIDE

The six station turret is random index programmable at any point of its travel.

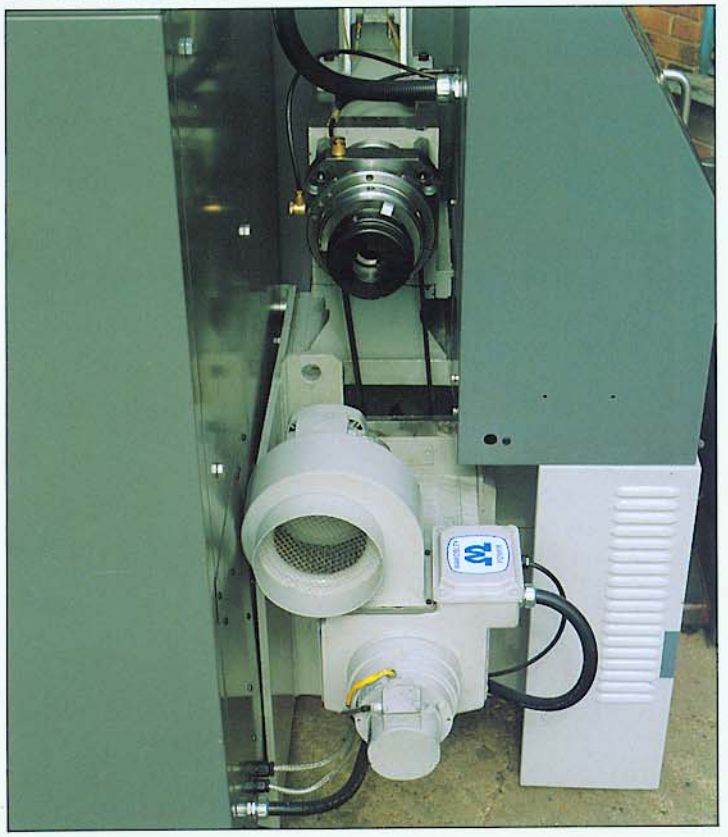
Indexing is by a hydraulic/pneumatic mechanism mounted on the end of the bedway.

The turret slide movement is by ballscrew, driven by a DC servo motor via a toothed belt. This gives powerful thrust and its closed loop feed monitoring ensures precise programmable position and feed rate control.

To optimise slide movement, travel and relative position of that travel are programmable.



◀ Turret and Slides



◀ Collet compensation mechanism, poly-vee belt drive and variable speed D.C. main motor.

HEADSTOCK, SPINDLE AND DRIVE

The spindle is mounted in preloaded precision double angular contact sealed bearings at front and rear. A DC variable speed motor with integral fail safe brake drives the spindle by a poly-vee belt.

25 speeds are programmable without belt or gear change.

The integral drive motor brake ensures rapid spindle stopping and reversal; assists second operation loading; and enables cross drill and milling.

FRONT, REAR & OVERHEAD SLIDES

Hardened and ground front and rear slides each have two position tool posts with tool height adjustment. The cross slide saddle is adjustable for position on the bedways.

An overhead slide is provided for parting off and has longitudinal adjustment.

All slides are capable of independent operation. They are actuated by air intensified hydraulics and traverse is rapid to adjustable pre-set check positions and then feed at a steplessly variable controlled rate.

Back feed to front and rear slides is controlled independently by feed rate flow valves.

Simply Set, Simply

LUBRICATION & COOLANT

An automatic lubrication unit serves 13 points on all slideways, ballscrew and indexing mechanism.

Coolant is programmable to the main supply distributor and turret nozzles.

SELF COMPENSATING COLLET

The collet operating mechanism is fail safe with spring on air off control. The disc spring compensation device allows variations in bar stock not exceeding 0,75mm for any one setting.

AUTOMATIC BAR FEED

A sound attenuated, automatic pneumatic bar feed, 3 metre length capacity, capable of accepting bar diameters from 4 to 26mm is provided. It is arranged to be swung forward at the machine end to load a new bar.

An end of bar cut out switch is fitted to shut the machine down and operate a warning light at the completion of the automatic cycle.

SAFETY

The MICROSPRINT 26 incorporates a range of safeguards.

- emergency stop button stops motor applies brake & homes programme
- turret interlock ensures turret is fully indexed before forward travel can commence
- control lock out key prevents program interference
- thermostatic contacts protected main & servo motors
- collet/chuck control buttons linked to spindle brake circuit for operator protection
- 12V brilliant Halogen work area light
- sliding work area guard, electro-mechanically interlocked
- dual interlocked start buttons ensures hands clear condition before spindle starts

Electric and setting control panels.

OPTIONS

MAGAZINE LOADING

Where unmanned machining is required on blanks; castings; previously turned parts; extrusions, etc., magazine loading equipment can be supplied. Three types are available; rear end through spindle loading (for long shafts); cross slide and rear of turret.

Magazine loading applications will be quoted against full supporting information.

Programmed, Simply..... Better

AUTOMATIC MAGAZINE BAR FEEDERS

The use of an automatic bar feeder improves the overall efficiency of an automatic lathe. Where long parts combine with short machining times and/or several machines are tended by one operator, they become essential and extremely cost effective. We offer a range of automatic bar feeders, both forward and rearward butt ejection types, which can also be retrofitted to EMI-MEC machines.

BAR POINT PREPARATION

The key to reliable automatic bar feeding is correct bar end preparation. The EMI-MEC BARSPRINT 26 bar pointer has been specifically developed to produce the correct end profile on all bar sizes and shapes.

STATIONARY DRILLING AND MILLING

A range of air driven attachments are available, capable of performing a variety of drilling or milling operations on a component held stationary in the spindle. Require separate air supply.

AIR CHUCKING

For second operation machining of components which cannot be held in the collet, a 125mm dia. 2 or 3 jaw chuck can be supplied. These have their own in built air cylinder and fail safe if the air supply is interrupted.

SERVICES

TOOLING

The accuracy and quality of parts produced depend to a large extent upon the efficiency of the cutting tools, holders and attachments used. EMI-MEC have selected and stock a range of standard equipment which fully complement the MICROSPRINT 26.

APPLICATION AND TECHNICAL DEPARTMENT

To ensure users of MICROSPRINT machines are able to realise their full potential, qualified application engineers are available for advice by phone, fax or telex.

TRAINING

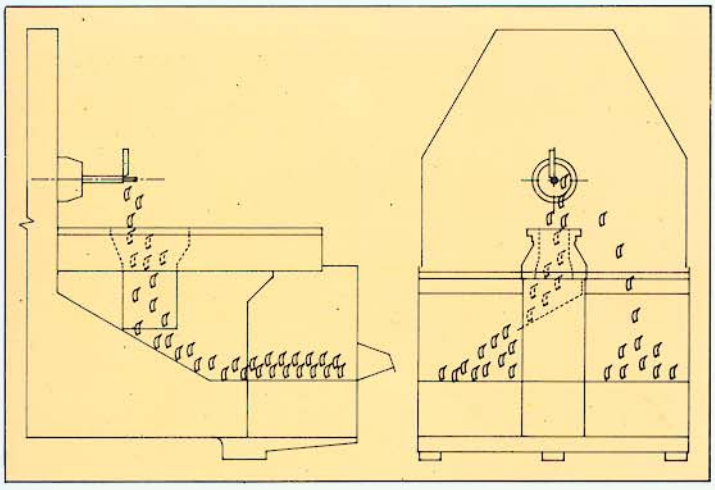
Comprehensive knowledge of the MICROSPRINT's capabilities is the key to its effective operation and for this purpose training courses are regularly held at the factory. These include programming, setting, fault finding and preventative maintenance.

SERVICE AND SPARES DEPARTMENTS

An efficient spare parts department comprehensively stocked and fully computerised together with a network of factory trained engineers throughout the UK, and distributors in over 20 countries worldwide, ensures an efficient after sales support service is available to all users of EMI-MEC MICROSPRINT machines.

SWARF CLEARANCE

The excellent swarf clearance of the unique EMI-MEC base and bedway design is clearly illustrated.



BARSPRINT bar end pointing machine.

FACILITIES & BENEFITS

ADVANCED *CET* MICROPROCESSOR CONTROL SYSTEM

- simple to learn, no codes, plain language
- fast, accurate function key programming
- memory & recall for approx 25 component programs
- metric and inch system compatible
- canned cycles ease programming eg; woodpeck drill; tapping; feed bar to stop; etc.
- full independent overlapping of all slide operations
- in cycle feed rate correction reduces machining time
- visual LED display of program status
- diagnostic fault tracing

BASE

- fabricated & stress relieved
- slope pan & bedway chute provide excellent swarf clearance

BALLSCREW/DC SERVO DRIVEN TURRET SLIDE

- stop & check positions programmed, no deadstops or trips to set
- stop & check travel consistent to 0.01mm
- accurate feed rate control
- teach & learn turret handwheel for quick accurate set up

SIX STATION TURRET

- hydro/pneumatically operated random indexing
- position of index programmable for reduced idle time

TURRET SLIDE

- slides directly on bedways for accuracy
- long travel is available
- travel & relative position of travel,programmable

OVERHEAD SLIDE

- heavy duty, headstock mounted for part-off

CROSS SLIDES

- heavy duty, high thrust, independent
- adjustable for position on bedway

SPINDLE & DRIVE

- DC variable speed motor
- poly-vee belt drive
- 25 spindle speeds programmable

AUTOMATIC BAR FEED

- pneumatic operation
- end of bar cut out with signal light

LUBRICATION

- automatic 13 point to slides, turret & index mechanism

COOLANT

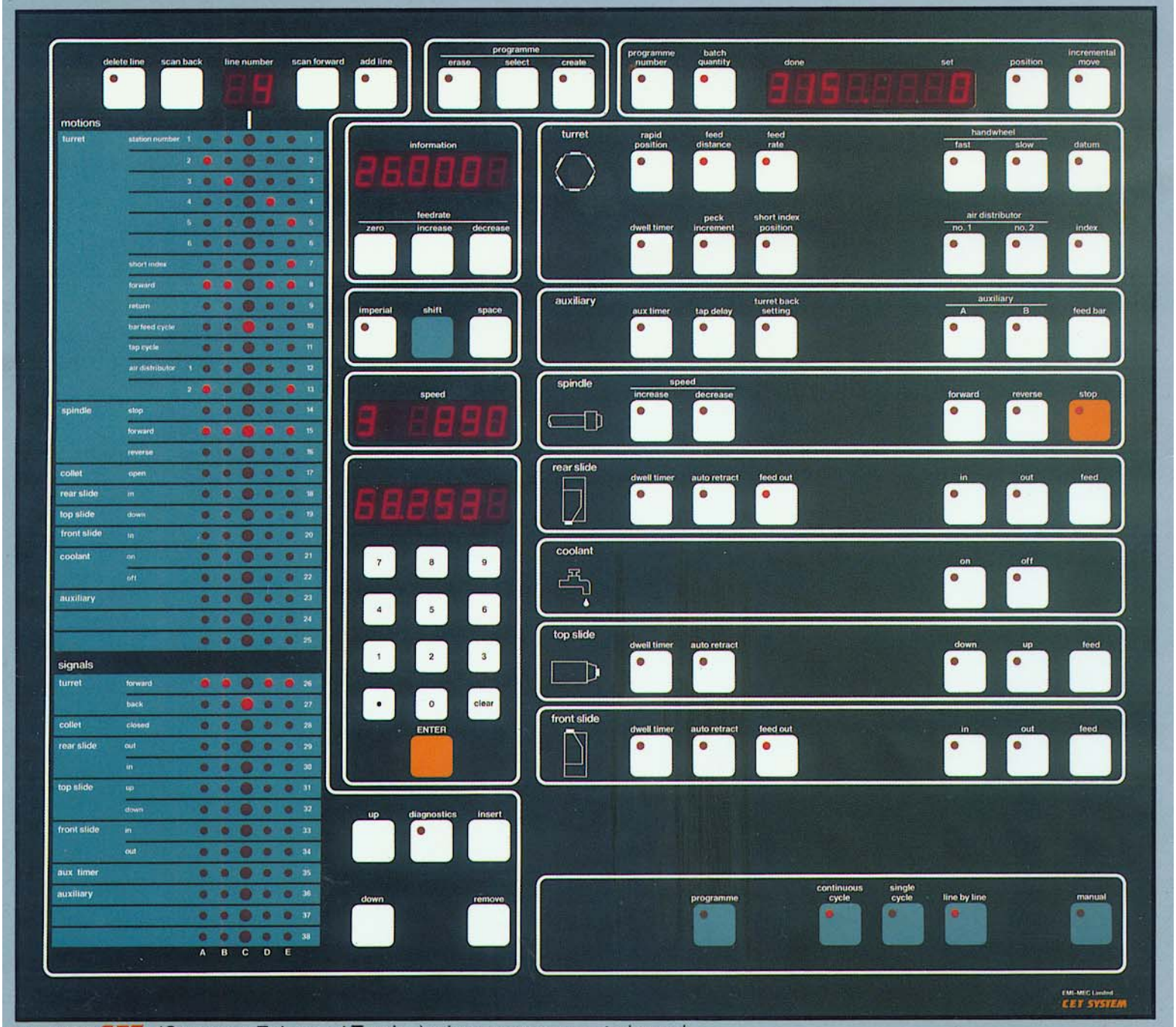
- 75 litres capacity, accessible in base
- centrifugal pump programmable

SAFETY

- sliding guard, electro mechanically interlocked
- failsafe brake integral with spindle motor
- control lock out for program protection

TOOLING

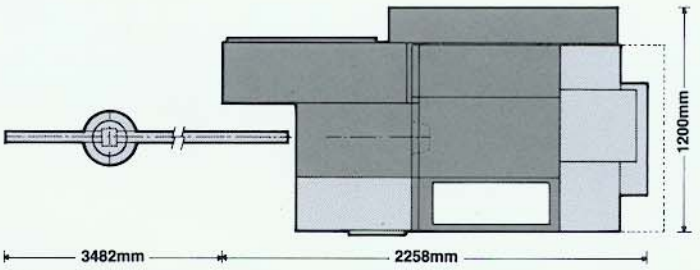
- roller box turning for high productivity
- die-box threading for fast, quality threading

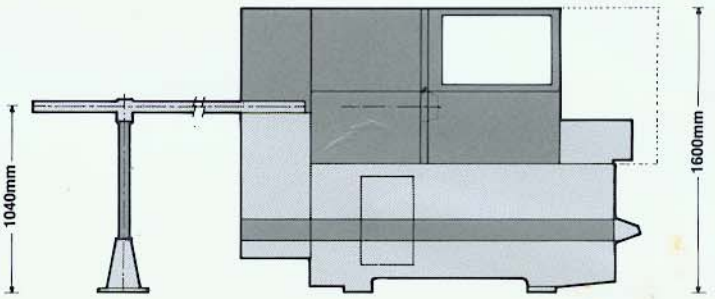


EMI-MEC **CET** (Computer Enhanced Turning) microprocessor control panel.

MACHINE SPECIFICATION

WORK CAPACITY	
Max. Diameter Bar	26mm
Max. Diameter in 125mm chuck	90mm
Max. Die Head size	25mm
HEADSTOCK	
Spindle	Hardened & Ground
Hole through spindle assy.	32mm
Spindle bearings front & rear	Angular contact, matched pairs.
Spindle bearing diameter, front	70mm bore
Spindle nose	A2-4 BS. 4442 fitted with sleeves & nosecap to accept T980 series multibore collet as standard. Spring collet systems available.
SPINDLE DRIVE	
Type	Poly-vee belt drive from DC variable speed motor.
Spindle speeds	50 60 70 85 100 120 140 170 200 240 290 350 420 500 600 700 850 1000 1200 1450 1720 2000 2500 3000 3500 (All available within a single program)
DC motor power	6.45 kW continuous rated.
DC motor type	112 frame shunt wound with field control & tacho.
POWER SUPPLY	
Electrical rating	415/440 volts, 3 phase, 50 hertz or as appropriate to local supply.
Power requirement	9.5 kW continuous.
TURRET	
Number of faces	6, random index, unidirectional
Indexing time (max.)	1.2 sec. stn to stn; 2.5 sec. stn 1 to 5
Dia of tool holes	25.4mm
Centre of holes to top of slide	70mm
TURRET SLIDE	
Max. effective working stroke	200mm
Max. movement	200mm
Feedrate range, stepless	0-2500mm/min
Number of feeds	Infinite..forward or back
Rapid traverse rate	8000mm/min
Drive	Recirculating ballscrew driven by DC servo motor via toothed belt
Max. thrust	8000 Newtons (1,798 lbf)
CROSS SLIDES	
Type	High thrust independent, two.
Slide drives	Hydraulic/pneumatic cylinder.
Max. thrust	4830 Newtons (1086 lbf)
Tool size	12.7mm
Max. distance between posts	170mm
Back feeding	Programmable on both slides.
Slide stroke to centerline	76mm
Feedrate range, stepless	0-2000mm/min
Rapid traverse rate	6000mm/min
OVERHEAD SLIDE	
Type	Vertical 90° for recess/part off
Slide drive	Hydraulic/pneumatic cylinder.
Max. thrust	4830 Newtons (1086 lbf)
Tool size	12.7mm
Stroke	76mm
Tool post to centerline, max.	85mm
Longitudinal adjustment	15mm
Feedrate range	0-2000mm/min
Rapid traverse rate	6000mm/min
LUBRICATION	
Spindle	Greased for life with Kluber Isoflex
Slideways, index bolt & turret	13 point automatic lubrication capacity 0.5 litres Mobile Vactra 2 or equiv.
COOLANT SYSTEM	
Standard	Centrifugal pump
Application	Overhead supply & turret nozzles (selected on control panel)
Flowrate	25 litres/min
Reservoir capacity	75 litres
(Heavy coolant oils above ISO 20 may need a more powerful geared pump)	
BARFEED	
Type	Pneumatic double tube, sound attenuated.
Bar Capacity	4 to 26mm. dia × 3 metres long
AIR	
Supply	80 p.s.i. (5.62 Kg/cm.sq)
Consumption typically	3 cubic ft/min (0.085 cub. m/min)





WEIGHT 1500Kg

CONTROL	
Type	Computer Enhanced Turning CET Special purpose system, based upon the iNTEL iAPX 188, 16 bit microprocessor with Mylar touch sensitive key panel with vertical line cursor function programming.
Manual controls	Manual control of all slides, spindle, coolant & turret from control panel
Data entry	A). Manual by function prompt & numeric keys. Function LED's give visibility of the line being programmed plus two before & two lines after. B). By "teach & learn" using electronic handwheel.
Functions controlled	Turret slide; feedrate, check & stop positioning. Datum position. Position of index. Sequencing of front, rear & top slides. Selection of spindle speeds & direction of rotation, auxiliary functions, collet operation & dwell times. Simultaneous operation of slides with fully independent overlap.
Turret canned cycles	Forward (rapid, feed & dwell); Return; (with or without feed) woodpecker drill; feed bar to stop; tapping.
Additional features	Quantity counter, diagnostic display.
SAFETY	
Safety guard	Partially enclosed, sliding with electro-mechanical interlock.
Spindle brake (failsafe)	Integral with spindle motor, stops within 1.5 secs from 3500 rpm.

Machines incorporate safety & design features, safety devices, guarding arrangements and are supplied with such information as to their safe operation and use, that we believe, so far as is reasonably practical, they are safe and are in compliance with the legal requirements of the Health and Safety at Work etc Act 1974

EMI-MEC Ltd is constantly incorporating detailed improvements for end users benefit. This specification may therefore be amended without notice.

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