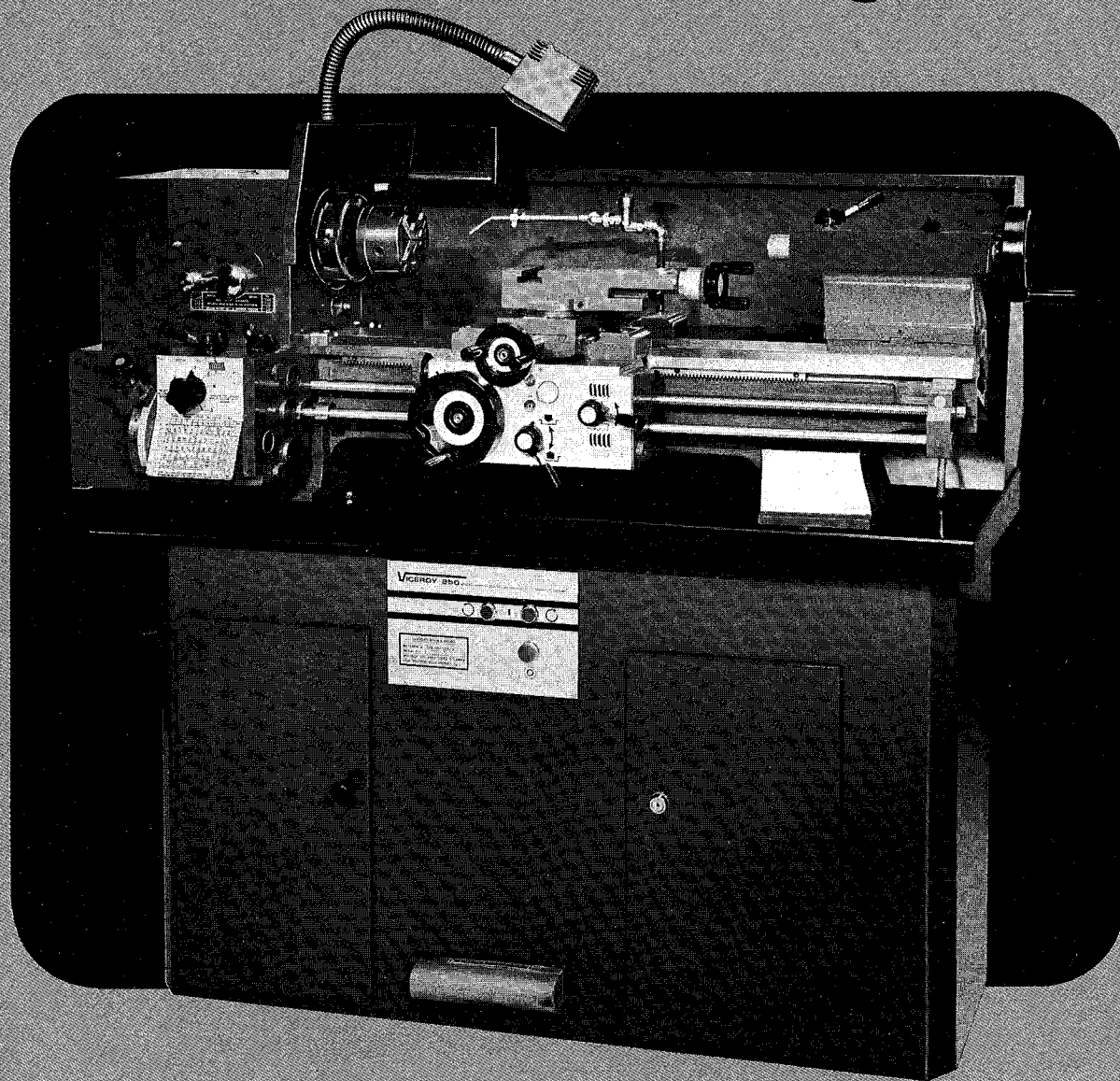


VICEROY

T.D.S.1/1 G.B Metal Turning Lathe



MODEL T.D.S. 1/1 G.B. 250 mm SWING x 600 mm BETWEEN CENTRES

STANDARD EQUIPMENT

Includes Chuck Guard and Rear Splash Guard and Tool Tray.

DENFORD

MACHINE TOOLS

T.D.S.1/1 G.B

METAL TURNING LATHE

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INTRODUCTION

Setting the pace of the seventies in vocational training and industrial uses is this range of metal turning lathes which incorporate many advanced automated and safety features not found on other machines of comparable size and cost.

They have been designed as the result of extensive surveys into technical training and industrial requirements and include many 'extras' within the basic price. They reduce supervision requirements and increase the safety factor when operated by unskilled personnel.

In the interests of continued improvement, we reserve the right to change without notice the design and specifications of the machines described in the following pages.

SERIAL NUMBER

In the event of any difficulty arising with this lathe, contact your supplier or the Service after Sales Dept. Telephone: 048-47 2264 (3 lines) Cables: Denmacto, Brighthouse, Telex: 517478 Denmac G. and state:- (New Telephone Number from (January 1st 1977) 0484 712264)

1. Type and model of machine
2. Serial number of machine. This number will be found clearly marked on the foot of the machine.
Example:-

NOTE. This number must always be quoted when entering into any correspondence regarding service, spare parts etc.

'THE VICEROY'

**TDS 1/1 GB TDS 1/2 PCS TDS 1 LS TDS 5 BG TDS 3 MW TDS 2/1 GB TDS 2/2 PCS
TDS 2/5 BG TDS 2/1 LS TDS 2/3 MW METAL TURNING LATHES**

INSTALLATION AND FOUNDATION

Once delivery of a 'Viceroy' Lathe has been effected the first thing to do is to clean the machine thoroughly with non corrosive solvent, wiping dry afterwards with a clean cloth. The unpainted surfaces should be covered with a film of good quality machine oil to protect against rust and discolouration.

The standard and extra equipment should all be inspected and cleaned and carefully put away until required. At this stage installation can be started.

The 'Viceroy' Metal Turning Lathe base plates are of large area, especially designed to be mounted on rubber or felt pads. Holes are also provided for bolting down in the traditional manner, using 3 points only.

Installation drawings and details of the anti-vibration pads or mats are available on request. Whichever method is chosen for the foundation of the lathe, it is essential that the floor under the machine is level and if it is wood, adequate steps should be taken to ensure that the lathe is secure. If it is decided to bolt the lathe down it is essential that the locking nuts of the foundation bolts are **NOT OVER-TIGHT** – finger tight only. To ensure the Lathe is accurately installed a precision level should be used across the lathe bed at both the headstock and tailstock ends. Twist in the bed should not exceed .064 MM/0.0025" per foot if the works tested accuracy is to be transmitted to the work being turned. Special adjustment screws under the feet of the lathe bed are provided, but under no circumstances should these be touched until the cabinet base has been correctly levelled in relationship to the floor by using a precision level across the bed, as each lathe is carefully set up at works prior to shipping.

AFTER THE INSTALLATION AND LUBRICATION IS COMPLETED THE FOLLOWING SHOULD BE NOTED:–

SPINDLE SPEEDS

The range of 8 speeds is shown on the headstock chart incorporating the relative belt positions from motor to countershaft pulley. The speeds are obtained by moving the 'V' belt to the positions required on the motor and countershaft pulleys (inside the cabinet) in conjunction with the back gear lever to the 'in' or 'out' position.

BELT POSITIONING

For adjusting the belt to the required position the belt tensioning lever, fitted to the motor platform inside the cabinet base, must be moved from the vertical (tight) to the horizontal (slack) position. N.B. the cabinet door cannot be closed until the lever is in the vertical or driving position, therefore the lathe cannot be operated until the belt change cycle is complete.

MOTOR PLATFORM ADJUSTMENT FOR BELT TENSIONING TO COUNTER/SHAFT

Adjustment for belt tensioning is made by raising or lowering the lock nuts on the motor platform support spindle until belt tension is adjusted correctly. If not able to obtain correct tension by this method, shorten or lengthen the 'V' belt by removing or adding links as required.

COUNTER-SHAFT TO SPINDLE BELT TENSIONING

Slight adjustment can be made by adjusting the screws fitted to the base of the counter-shaft brackets, if tension is not sufficient it will be necessary to remove one or more links from the belt.

LINK BELT

The use of this type of belt means spindles etc. do not have to be removed for repairing or replacing belts.

BACK GEAR – DO NOT ATTEMPT TO ENGAGE WHILST THE LATHE IS RUNNING

To engage move single lever through 180° to position required. To assist the engagement of the sliding gears it is sometimes necessary to move the main spindle slightly. The back gear lever can be locked in either position by means of the grub screw in the lever.

REVERSE TRAVERSE GEAR LEVER (INSIDE THE END DRIVE GUARD). DO NOT ENGAGE WHILST THE LATHE IS RUNNING.

This is a quick means of reversing the motion of the power feeds longitudinal or cross. There are three positions – the central one is neutral, (no drive to the power feeds). The top or bottom positions transmit the drive. The reversal of feeds is obtained by moving the lever from one position to the other. Whilst the end drive guard is open, the lathe cannot be started.

APRON AND LONGITUDINAL TRAVERSE

The carriage is moved along the bed by turning the apron handwheel, if not under power. The carriage locking nut located on the apron must be tightened **only for facing or parting off, and must always be released before using power feed or hand traverse.**

COMPOUND SWIVEL SLIDE

The cross-feed and compound handles are turned to move the tool rest in and out on a lateral movement. For moving the swivel slide to the correct angle for screwcutting etc. release the three screws that clamp the slide, these are located at each side and the front of the compound slide. **BEFORE COMMENCING OTHER OPERATIONS THE SCREWS MUST BE TIGHTENED, BUT NOT OVER TIGHTENED.**

SADDLE JIB.

This part is located under the saddle behind the bed and is the means of adjusting the saddle to the bed. The two socket head cap screws should be tightened against the spring washers, sufficiently to allow easy movement of the carriage when turning the apron handwheel – **DO NOT OVER-TIGHTEN.**

SADDLE ANTI-LIFT SLIDING CLAMP

This is located underneath the bed-ways and has been pre-set at works and should require no further adjustment unless the saddle is removed. If resetting is required – **DO NOT OVER-TIGHTEN.**

CROSS-SLIDE AND TOOL-SLIDE JIBS

Adjustment to these jibs is effected by releasing the lock-nuts and applying equal pressure to each of the grub screws until all play is taken up on the slides, but should be free to allow the 3-ball handles to be turned without applying too much pressure; the locknuts must then be tightened before use.

MICROMETER DIALS

Each graduation, on the dials fitted to the cross and tool-slides, represents a movement of .02 MM (METRIC) or .001" (ENGLISH). The dials are friction loaded.

OPERATION OF THE TAILSTOCK

By tightening the eccentric clamp via the lever the tailstock can be locked in any position on the lathe bed. Adjustment can be effected by tightening or slackening the nut under the tailstock shoe. When adjusted and locked the clamping lever should be in the approx. vertical position.

TAILSTOCK BARREL LOCK

The handle must be tightened when set up for turning between centres and other similar work.

ADJUSTING THE TAILSTOCK

When the tailstock is to be set over for taper turning, release the tailstock clamp and screw the square head adjusting screws in the direction required. Be sure to release the opposite screw. Tighten but NOT OVERTIGHTEN after setting.

CABINET MICRO-SWITCH

When belt adjustments have been effected inside the cabinet base a test run can be made by LIFTING and PULLING GENTLY the toggle of the micro switch fitted to the cabinet door. The lathe will not start until the cabinet door is closed.

'VICEROY' TDS 1/1 GB LATHE
'VICEROY' TDS 1/2 PCS LATHE

FOR METHOD OF OPERATION GEAR BOX AND AUTO APRON SEE BELOW AND DRAWINGS OPPOSITE

All screwcutting feeds are through the 3MM Leadscrew for metric pitches – or 8 T.P.I. Leadscrew for Whitworth Threads. Sliding and surfacing feeds are through separate feed shaft. See Charts fitted to gear box or end-drive guard.

AUTO-ADJUSTABLE TRAVERSE TRIP-FITTED TO TDS 1/1 GB & TDS 1/2 PCS FEED SHAFTS.

This is a SAFETY FEATURE eliminating any risk of over-run when set correctly.

SETTING METHOD

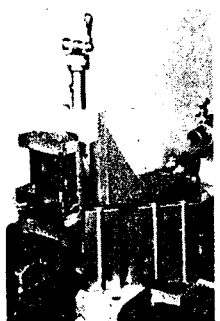
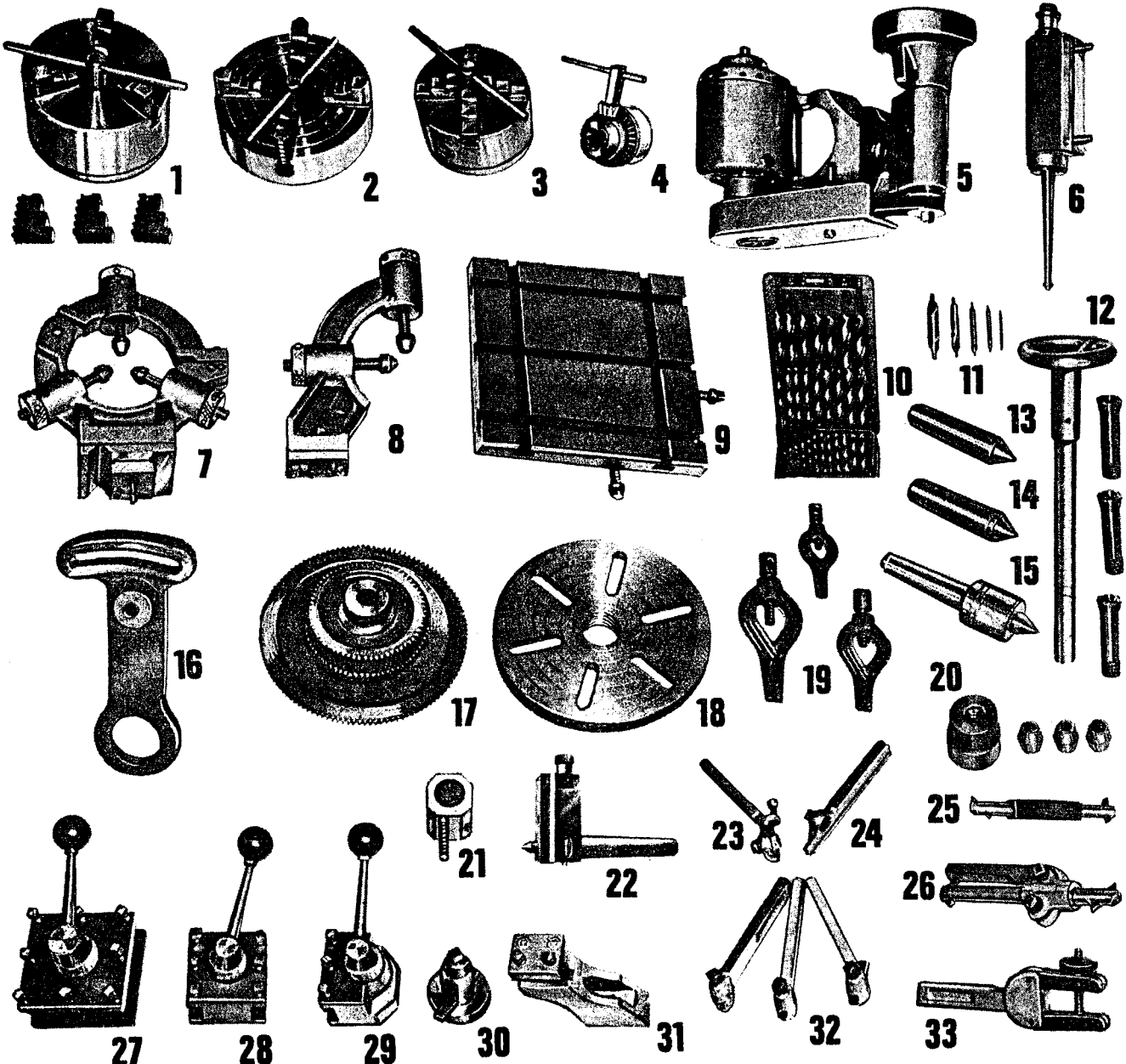
To predetermine the position of COLLAR (J) for auto-traverse longitudinal feed trip:—

- a) Release grub screw.
- b) Set COLLAR (J) to position required.
- c) Lock Collar (J) in position by means of grub screw.
- d) The apron will then be moved automatically or by hand against collar (J) and the feed shaft drive will disengage within the gear-box.
Approx. longitudinal movement before disengagement 1/4" – 6 MM.
- e) To re-engage the gears in the gear box, simply wind the apron away from the Headstock.

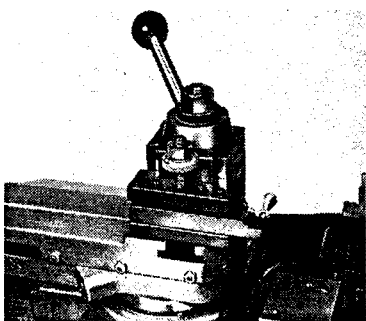
IMPORTANT

When SCREWCUTTING or using the LEADSCREW, the COLLAR (J) MUST BE RELEASED so as not to interfere with apron movement.
Screw cutting traverse trip also available.

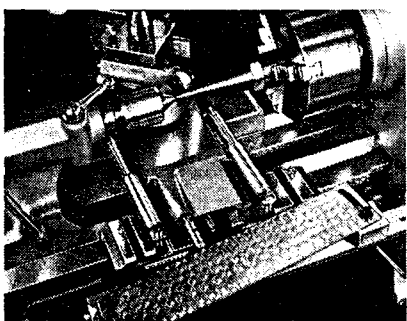
- | | | | |
|-----------------------------------|----------------------------------|--------------------------------------|-----------------------------|
| 1 3-jaw S.C. Chuck & Spare Jaws | 10Drill Set 29 Drills | 19Set of Carriers | 274-way Toolpost |
| 24-jaw Independent Chuck | 11Centre Drill Set | 20 Spindle Nose Chuck & Collets | 282-way Toolpost |
| 34-jaw S.C. Chuck | 12Draw Bar & Collets | 21Thread Dial Indicator | 291-way Toolpost |
| 4Drill Chuck & Key | 13Hard Centre No. 3MT | 22Tailstock Taper Turning Unit | 30 American Type Toolpost |
| 5Tool Post Grinder | 14Soft Centre No. 3MT | 23 External Threading Toolholder | 31Rear Toolpost |
| 6Tool Post Internal Spindle | 15Revolving Centre No. 3MT | 24Parting-off Toolholder | 32 Set Size 'O' Toolholders |
| 7Fixed Steady | 16 Metric Conversion Quadrant | 25104 Boring Bar holder | 33O.KHA Knurling Tool |
| 8Travelling Steady | 17Metric Conversion Wheels | 2615H Boring Bar holder | |
| 9Boring Table | 18Heavy Duty Faceplate | | |



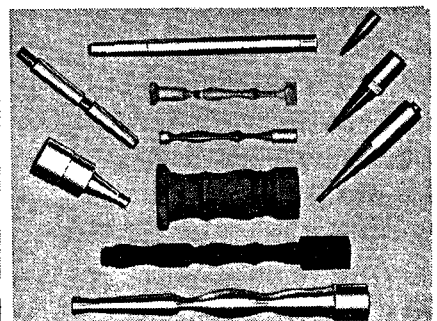
Vertical Slide and Milling Attachment



Rear view of quick change toolpost in position with one of the many toolholders available.



Taper Turning and Copying attachment (EXTRA)



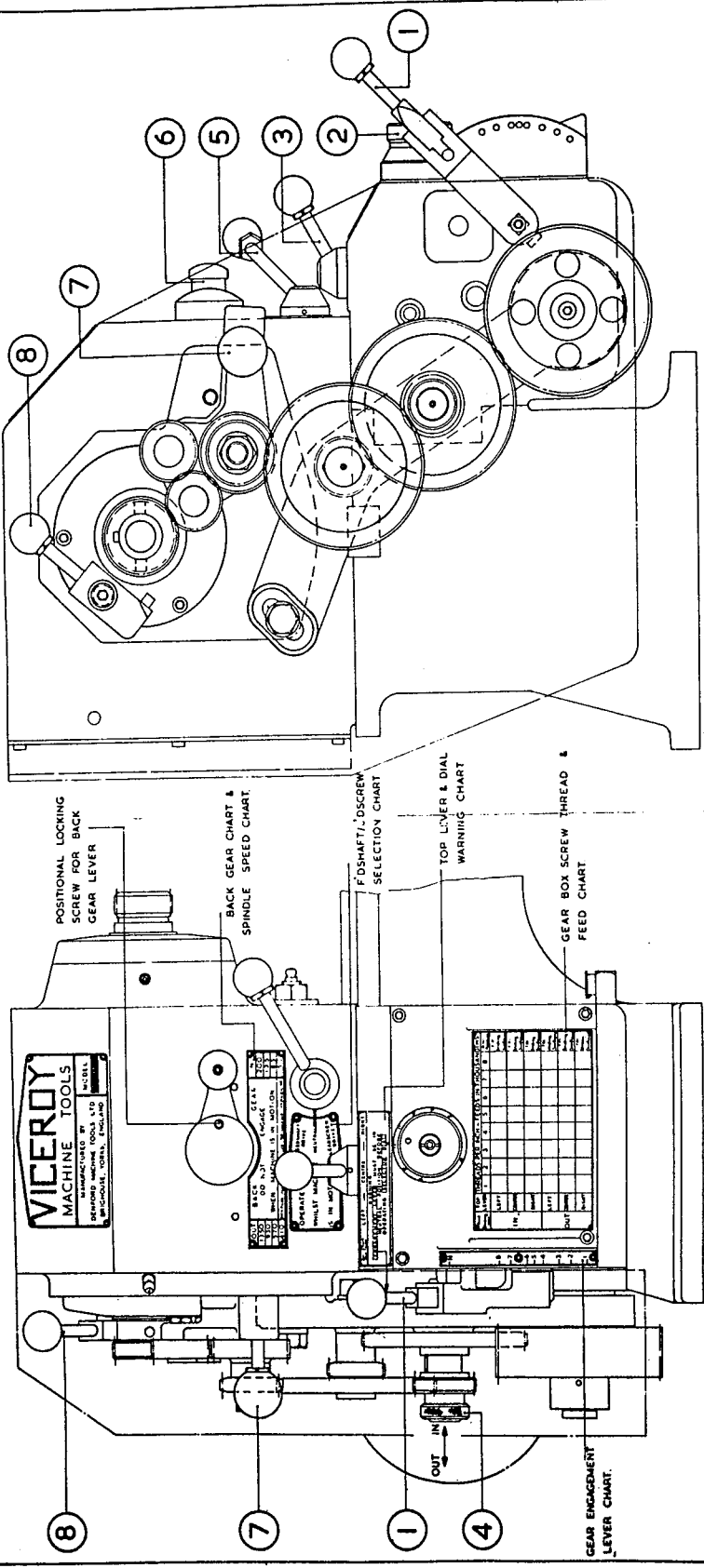
Typical examples of work produced.

GEAR BOX OPERATING INSTRUCTIONS FOR 'VICEROY' T.D.S. I/I.G.B. — G.B. LATHE.

DWG. 2

- ① GEAR ENGAGEMENT LEVER. (MARKED I-8 & NEUTRAL N POSITION)
- ② SELECTOR DIAL. (MARKED I-8)
- ③ TOP LEVER. (MARKED LEFT-CENTRE - RIGHT)
- ④ QUADRANT SLIDING GEAR. (LOCATED INSIDE END DRIVE GUARD.)

- ⑤ FEEDSHAFT / LEADSCREW SELECTION LEVER.
- ⑥ BACK GEAR LEVER.
- ⑦ F'DSHAFT/L'DSCREW TRAVERSE REVERSING LEVER. (LOCATED INSIDE END DRIVE GUARD.)
- ⑧ SPINDLE LOCK. (LOCATED INSIDE END DRIVE GUARD.)



(A) FOR THE SELECTION OF SPINDLE SPEEDS REQUIRED SEE CHART ON HEADSTOCK. MOVE 'V' BELT LOCATED INSIDE CABINET TO THE POSITION REQUIRED THEN MOVE BACK GEAR LEVER (ITEM 6) TO EITHER 'IN' OR 'OUT' POSITION DEPENDING ON SPEEDS CHOSEN, MAKING SURE THE LATHE IS NOT RUNNING, WHILST CHANGING 'BACK GEAR' FOR ENGAGEMENT ROTATE SPINDLE OR CHUCK BY HAND.

(B) FOR THE SELECTION OF FEED REQUIRED, SEE CHART ON FRONT OF GEAR BOX.

(C) MOVE QUADRANT SLIDING GEAR (ITEM 4) TO EITHER 'IN' OR 'OUT' POSITION DEPENDING ON FEED SELECTED.

(D) START LATHE. MOVE GEAR ENGAGEMENT LEVER (ITEM 1) TO NEUTRAL POSITION MARKED 'N' ON GEAR ENGAGEMENT CHART.

(E) SET SELECTOR DIAL (ITEM 2) TO POSITION REQUIRED ON FEED CHART. DO NOT MOVE SELECTOR DIAL (ITEM 2) UNLESS GEAR ENGAGEMENT LEVER (ITEM 1) IS IN NEUTRAL 'N' POSITION.

(F) MOVE GEAR ENGAGEMENT LEVER (ITEM 1) TO CORRECT NUMBERED POSITION SHOWN ON GEAR ENGAGEMENT LEVER CHART, CORRESPONDING TO THE SELECTOR DIAL (ITEM 2) NUMBER SELECTED.

(G) MOVE TOP LEVER (ITEM 3) TO EITHER LEFT-CENTRE-RIGHT POSITION FOR FEED REQUIRED AS INDICATED ON GEAR BOX FEED CHART. WHEN LATHE IS RUNNING.

(H) F'DSHAFT/L'DSCREW SELECTION LEVER (ITEM 5) SHOULD BE MOVED TO 'EITHER F'DSHAFT-NEUTRAL-L'DSCREW' AS DESIRED WHEN LATHE IS RUNNING.

NOTES

WHEN THE ABOVE INSTRUCTIONS HAVE BEEN CARRIED OUT YOUR 'VICEROY' LATHE WILL BE READY FOR USE.

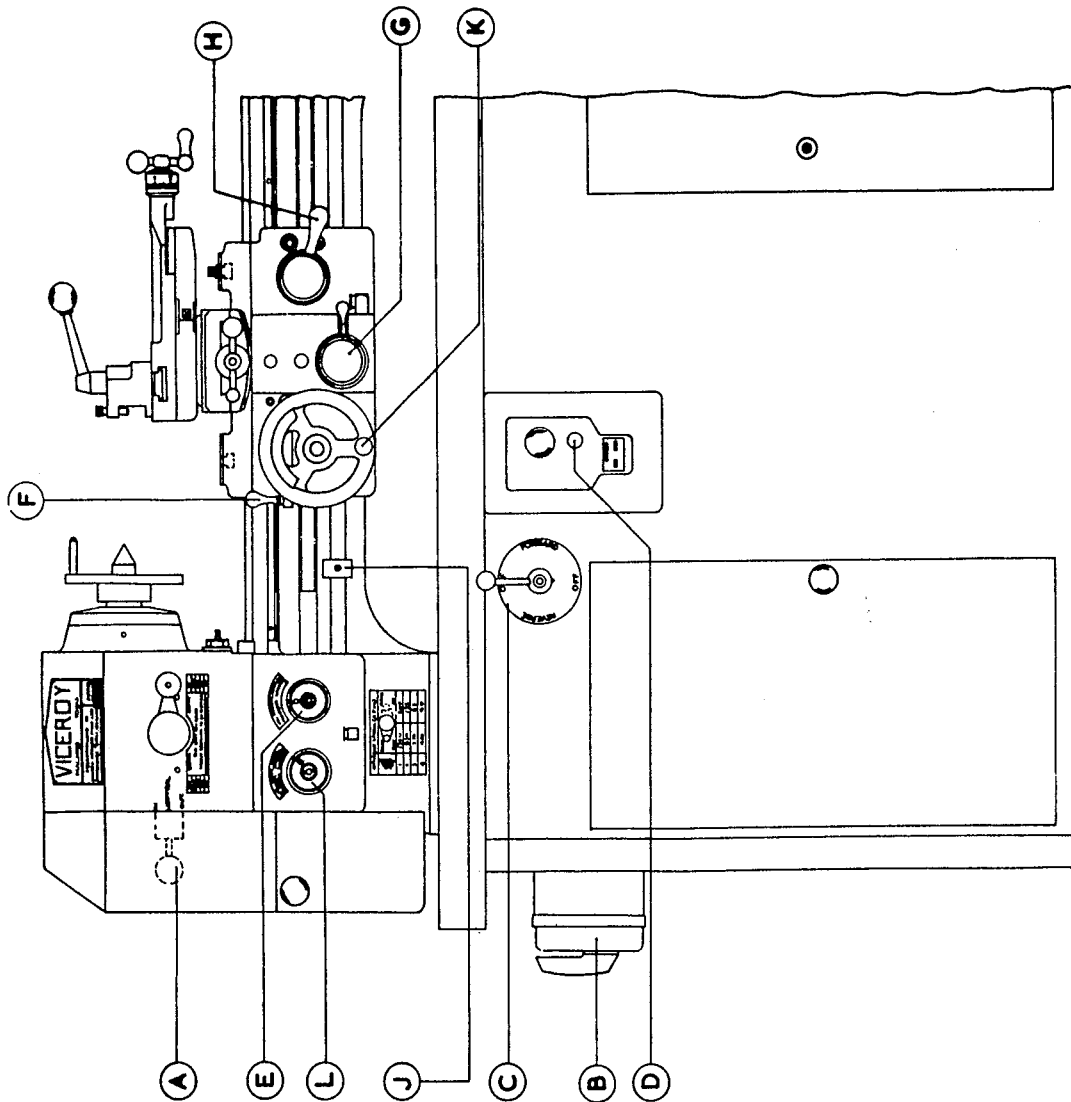
(J) F'DSHAFT/L'DSCREW TRAVERSE REVERSING LEVER (ITEM 7) IS A QUICK METHOD OF REVERSING THE DIRECTION OF POWER FEED.

(K) SPINDLE LOCK (ITEM 8) PREVENTS SPINDLE ROTATION TO ENABLE EASIER REMOVAL OF CHUCKS AND FACEPLATES ETC. LATHE CANNOT BE STARTED UNTIL SPINDLE LOCK IS DIS-ENGAGED AND END DRIVE GUARD IS CLOSED.

DO NOT USE FORCE ON ANY LEVER AND ENSURE THAT LATHE IS RUNNING TO EFFECT CORRECT ENGAGEMENT AS INDICATED ABOVE.

AUTO-APRON OPERATING INSTRUCTIONS FOR TDS 1/1 GB and TDS 1/2 PCS LATHES. (ENGLISH & METRIC)

- (1) Select correct spindle speeds from chart, ensuring that quadrant gears are correctly meshed.
- (2) NB. For operation of Gear Box, see separate sheet of instructions.
- (3) Check that reversing bracket gears 'A' are in correct position for rotation of Leadscrew or feedshaft, and that the end drive guard is closed.
- (4) Switch the machine on at the isolator 'B'. Check that cabinet door is closed. Set reversing switch 'C' to direction of rotation required.
- (5) Check that both the compound and tool are clear of the chuck or faceplate.
- (6) Press the Green Starter Button 'D'.
- (7) With the main spindle running, engage leadscrew or feedshaft by means of dial 'E' ensuring that the apron change lever 'F' is in neutral.
- (8) **IF USING THE FEEDSHAFT:—**
 - (a) Engage lever 'F' for SLIDING LONGITUDINAL feeds by pulling towards you.
 - (b) Engage lever 'F' for SURFACING CROSS feeds by pushing away from you.
 - (c) Finally, engage the feedshaft itself by pushing down lever 'G'.
- (9) NB. A limit collar 'J' is fitted to the feedshaft for auto-knock off of apron, (see separate instructions).
- (10) Engage by lifting lever 'H'.
- (11) (See separate details for the use of thread dial indicators, both English & Metric—extra equipment).
- (12) A Safety Locking Device is incorporated in the apron to prevent both worm carrier lever 'G' and screwcutting lever 'H' from being engaged at the same time.
- (13) For range of pitches and feeds available, refer to the chart supplied with the machine.
- (14) For hand traverse use handwheel 'K'.
- (15) Dial L for selecting standard or coarse feeds only.



OPTIONAL EXTRA EQUIPMENT

Spindle Chucks. All chucks are supplied fitted to the backplate ready for screwing onto the spindle nose of the lathe. No chips, burrs or small particles of dirt must be allowed to lodge on the spindle register or screw heads.

The screws and register should be **thoroughly** cleaned before use. It is advisable to clean all threads and faces of the backplate and spindle nose, then smear a film of oil before fitting chucks etc. to the spindle nose. This facilitates removal of chucks etc.

Types of Chuck. The 3-jaw self centring chuck will grip round work quickly since the 3-jaws move simultaneously and centre the work automatically. Two sets of jaws are supplied, one for internal gripping and one for external. The 100 MM (4") 4-jaw self centring chuck is ideal for square and hexagon bar. The 4-jaw independent chuck is used for irregular shaped work which has to be machined and centred to run dead true. The Jaws on these chucks are reversible. The drill chuck is used to hold drills, reamers, taps etc., in both the headstock and the tailstock of the lathe. Capacity is 0–12 MM (0–1/2") or 3 MM – 19 MM (3/16"–3/4") diameter with keys for tightening.

Lathe Tools and their Applications. The correct sharpening method and type of lathe tool must always be used if the lathe is to turn efficiently and accurately. The tool must have a keen and well supported cutting edge which has been ground for the particular material which is being machined. (Tool Chart available on request).

Three types, Left Hand, Right Hand and Straight Turning Toolholders are usually used in conjunction with the single way (standard) type of toolpost and the 4-way 2-way and American Toolpost (Extras). We manufacture and supply a range of general purpose American and English Lathe Toolholders. Other types of toolholders are available for boring, parting off, threading and knurling etc. A full range is listed on our illustrated leaflet.

COLLET CHUCK. For precision and repetition work it is advisable to use a collet attachment, which is the most accurate of all types of work holding methods. Work to be held in a collet should be within the capacity of the normal collet sizes, which are available up to 0.12 MM (1/2") capacity.

THREAD DIAL INDICATOR. Available for Metric or English. This is used to save time, particularly when cutting long screw threads. When the lathe is set up for cutting screw threads, the thread dial indicator indicates the relative positions of the leadscrew, spindle, and carriage of the lathe. This permits the half-nuts to be disengaged from the leadscrew at the end of a cut, returning the carriage quickly to the starting point by hand without reversal of the lathe spindle, re-engaging the half-nuts with leadscrew at an equivalent point ensuring the tool follows exactly the original cut.

FIXED STEADY. The purpose of the fixed steady is to support long shafts of small diameter whilst being turned, and for boring and threading spindles. The steady is fitted to the lathe bed and is adjustable by setting the 3 adjustable points to allow the work piece to run concentric.

TRAVELLING STEADY. The purpose of the travelling steady is to support work of a small diameter which might otherwise spring away from the cutting tool. The steady is fitted to the rear of the saddle and is set with the jaws to bear directly on the diameter of work – adjustments are effected in the same way as a fixed steady. The steady should be located approximately 1/4" to the left of the tool.

PLAIN OR ADJUSTABLE CARRIAGE STOPS. These are used for facing shoulders to an exact length and are clamped to the lathe bed in the position required to act as a stop for the carriage.

COOLANT EQUIPMENT. Machines can be supplied with a coolant pump, complete with tank. Pressure for the pump is pre-set at the works. The small tap on the outlet pipe fitted to the cross-slide adjusts the flow of coolant required. To clean the tank, fitted inside the cabinet, remove it by releasing the self-tapping screws at the rear of the cabinet.

OTHER ACCESSORIES AVAILABLE ON REQUEST

LUBRICATION AND MAINTENANCE

Once the lathe is cleaned and set up it is essential to ensure all bearings and surfaces are correctly lubricated with good quality oil or grease. The lathe does not require too much oil/grease; this causes dirt to accumulate, impedes the running and causes overheating, particularly on spindle bearings.

OILING CHART

1. Headstock Spindle Bearings are Adjustable Timken Taper – use good quality grease. **DO NOT OVERGREASE.**
2. Back Gear – oil with gun regularly through nipple below headstock spindle.
3. Selector Levers – Oil monthly.
4. Headstock Sliding Gear – apply a little oil monthly through spring loaded oilers in Headstock.
5. Reverse Gear Bracket and Gears – oil daily.
6. Leadscrew Brackets – oil daily.
7. Countershaft – no attention required – grease prepacked at Works.
8. Tailstock – oil barrel daily, clean and lightly oil square thread.
9. Leadscrew and half nuts – oil regularly when in use – keep clean.
10. Apron – oil two positions daily.
11. Carriage 'V' Way, Dovetails and Bushes – clean and oil daily.
12. Motor Bearings – oil annually.

Recommended	Lubricants	–	Esso Oil Company or equivalent
	Grease	–	Firmax 2 or equivalent
	Oil	–	Coray 45 or equivalent

MISCELLANEOUS EQUIPMENT. A full range of accessories is available and is shown on the enclosed list i.e. faceplates, centres, toolholders, carriers, drill sets etc., as well as other items of equipment which are available on request. Special prices can be quoted for alternative or additional items of non-standard design.

SERIAL NUMBER. Always quote the code and serial number of the machine when entering into any correspondence or when ordering spares. This number will be found clearly marked on the plate fitted to the bed foot. If electrical fault, state phase. Should any difficulty be experienced with our 'Viceroy' lathes or any of our other products – 'Home or Overseas' – please bring the matter to the attention of your supplier or direct to our 'Service after Sales' Department, who will treat the complaints or queries with the necessary **URGENCY.**

We hope these instructions have been helpful and will help to ensure that your 'Viceroy' lathe will give you many years of efficient service.

In conclusion, remember that we are at your **SERVICE**, whether in an **ADVISORY** or **TECHNICAL** capacity – please do not hesitate to contact us.

POINTS WORTH NOTING

ALWAYS clean the lathe or any other machine tool and equipment after use, or each day. Lightly oil all machined surfaces and equipment before leaving for any time, to prevent rusting after being handled.

Always OIL AND GREASE REGULARLY WHERE INDICATED.

Always BE SURE THE DRIVING BELTS ARE AT CORRECT TENSION.

Always BE SURE THAT THE CHANGE WHEELS ARE CORRECTLY IN MESH. IF TOO TIGHT IN MESH YOU RISK DAMAGE TO THE GEAR WHEELS.

Always ADJUST THE JIB STRIPS AT REGULAR INTERVALS.

REGULAR MAINTENANCE OF YOUR LATHE OR ANY OTHER MACHINE TOOL ENSURES TROUBLE FREE RUNNING, ACCURACY AND FINISH.

NEVER

PUT SPANNERS, TOOLS ETC., ON THE BEDWAYS.

KNURL WITHOUT OILING WORK PIECE OR KNURLS.

USE CENTRES WHICH ARE BADLY WORN.

INSERT CENTRES IN HOLLOW SPINDLES WITHOUT CLEANING CENTRES OR SPINDLES.

CENTRE DRILL WITHOUT FACING THE WORK PIECE.

TIGHTEN TOOLPOST COMPOUND SLIDE AND TAILSTOCK LOCKING SCREWS TIGHTER THAN REQUIRED.

TRANSFER CONCENTRIC CHUCKS FROM ONE LATHE TO ANOTHER AND EXPECT ACCURACY.

LEAVE THE CHUCK KEY IN THE CHUCK AND LEAVE THE LATHE UNATTENDED.

TRY TO ENGAGE THE HALF NUT WHILST THE LEAD SCREW IS STOPPED.

FILE OR POLISH WORK NEAR THE CHUCK JAWS WITHOUT ROLLING UP YOUR SLEEVES.

PUT FINGERS IN A BORE TO FEEL THE SMOOTHNESS OF THE FINISH WHILST THE CHUCK IS REVOLVING.

HOME MARKET

COMPREHENSIVE SERVICE AFTER SALES POLICY INCLUDES:-

1. Delivery by our own transport, fitted with off-loading crane and positioning (not fastening down or electrical installation) of the machine in the room at a convenient time pre-arranged with the Headmaster or Contractor on site.
2. Testing and demonstration of the machine when under power to the satisfaction of the user by the D.M.T. Service Engineer, or Technical Representative.
3. Periodic inspection by our 'After Sales Service' Engineers, or Representative during the twelve months' guarantee, which also includes materials or workmanship should they prove to be design or manufacturing faults.

In conclusion, the D.M.T. Technical Advisory Service is at the users' disposal any time. Our concern is that the 'Viceroy' range of products should give a long and efficient service to the user.

EXPORT MARKET

Our Agents or Distributors would be pleased to co-operate on any problems. We would also welcome the opportunity of being of **SERVICE TO YOU** if required.

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VICEROY T.D.S. 1/1 G.B Metal Turning Lathe

STANDARD SPECIFICATIONS

GEAR BOX. The totally enclosed unit is operated through dial selection. Changes are effected whilst the lathe is running thus reducing the possibilities of any damage to the gears (immersed in oil bath) should selection dial/levers be accidentally moved. A safety shear pin is also incorporated to prevent damage through overload of the feed-shaft or lead-screw.

APRON. Is of double walled construction with worm and gears immersed in an oil bath. Quick convenient selection dials/levers are provided for the lead-screw and feed-shaft which are interlocked. The feed-shaft has a mechanical automatic adjustable longitudinal feed trip.

BED UNIT. This is of high quality close grain cast iron and is of box section design. To ensure maximum rigidity the bed feet are cast integral with the bed. Double 'V' slides ensure accurate alignment for the traverse of the carriage and tailstock.

CARRIAGE. Amply proportioned with 'V' guide ways which ensure accurate movement along the length of the bed and crossfeed slide. Also incorporated are 'Tee' slots on the saddle wings for accessories. A centre gib adjustment pre-set at the factory prevents lift of the saddle.

HEADSTOCK. Manufactured in heavy duty high quality close grain cast iron it houses the drive and the back gear assembly, which is operated by a single lever and can be locked in any desired position to prevent either accidental or unintentional movement whilst the spindle is running.

TAILSTOCK. A substantial unit designed to take the heaviest work. It is graduated along the shute which has a No. 3 M.T. bore. Set over square head screws provided for alignment and turning tapers. Positional clamping is cam operated by a quick action lever.

SPINDLE. This is a 1 1/2" No. 3 Morse Taper hollow spindle 20 mm bore (13/16") in precision ground high quality steel. It is mounted in 'Timken' taper adjustable roller bearings which ensure a high degree of accuracy and finish with vibration free running.

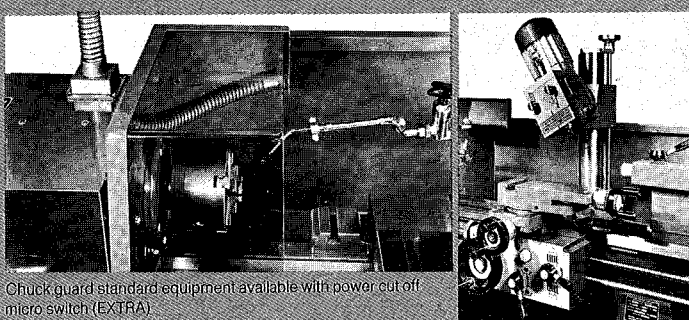
SPINDLE LOCK. The spindle lock is for removing chucks, face plates etc., and is located inside the end drive guard which is protected by an electrical cut out switch. The guard cannot be closed with the lock in the spindle locked position.

CABINET. A heavy gauge welded steel cabinet houses all electrics including a reversing switch and stop start switchgear—easily accessible by the operator. The motor drive compartment is isolated, and a double shelved cupboard is also provided for accessories. The tray integral with cabinet—incorporates 'swept up ends' for easy cleaning.

ELECTRICS. 3 phase or single phase 0.56 kw. (standard) or 1.12 kw. (extra) controlled by no-volt overload release push button starter. Safety electric micro-switches are fitted to the end drive guard and motor compartment door. Latest fail safe micro-switches now fitted to all machines.

SPECIFICATIONS

Swing over bed	250 mm	10"	Screw Cutting Range	Metric Pitches	TPI
Swing over saddle	230 mm	9"	TDS. 1/1GB-2/1 GB	7.0 to .10	4 to 224
Swing over cross slide	168 mm	6 5/8"	Sliding Feeds	mm/R.P.M.	Inch/R.P.M.
Width across shears	150 mm	6"	TDS. 1/1GB-2/1 GB	2.1 to .03	.08 to .0014
Maximum between centres	600 mm	24"	Surfacing Feeds		
Spindle bearing diameter	38 mm	1 1/2"	TDS. 1/1GB-2/1 GB	84 to .012	.03 to .0005
Spindle nose thread		1 1/2" x 8 T.P.I.	Spindle Speeds R.P.M.		
Spindle bore	20 mm	13/16"	in back gear	60, 85, 135, 200	
Spindle M.T.	No. 3		Direct	410, 570, 930, 1350	
Tailstock M.T.	No. 3		Motor H.P.	.75 or 1.5	.56 or 1.2 Kw
Cross slide travel	165 mm	6 1/2"	Overall dimensions		
Top slide travel	76 mm	3"	Length	1270 mm/1700 mm	4' 2" 5/8" 7"
	Nett Weight	Gross Weight	Height	1170 mm	3' 10"
	kg	lbs	kg	lbs	Width
TDS. 1/1GB	350	741	437	915	560 mm
TDS. 2/1GB	404	755	496	940	



Chuck guard standard equipment available with power cut off micro switch (EXTRA)

Vertical Universal Milling and Drilling Unit (EXTRA) will turn and swivel through 360 degrees. 025 H.P. motor controlled by separate push button starter driving a 4-speed all geared head.

All Denford products are designed with safety as a pre-requisite. Denford have always sought to provide the ultimate in safety by demanding a simplicity of design and operation consistent with top performance.

Our policy is one of continuous improvement, we therefore reserve the right to change specification without notice.

