



MATRIX
COVENTRY GAUGE &
TOOL COMPANY LTD.

High Precision
**SCREW CUTTING
LATHE**

The accumulation of pitch error over complete length of this 54 inch (1350m/m) lead screw:—
 ± 0.0003 inch (0.0075 m/m)
This is a typical example of work produced by this machine.

COVENTRY GAUGE & TOOL CO. LD.
TELEPHONE: FLETCHAMSTEAD, COVENTRY. TELEGRAMS: GAUGES, COVENTRY.

PRODUCED SPECIFICALLY FOR Precision THREADED PARTS



Gear set-up for right-hand threads. Note only four gears between Facemplate and Lead Screw.



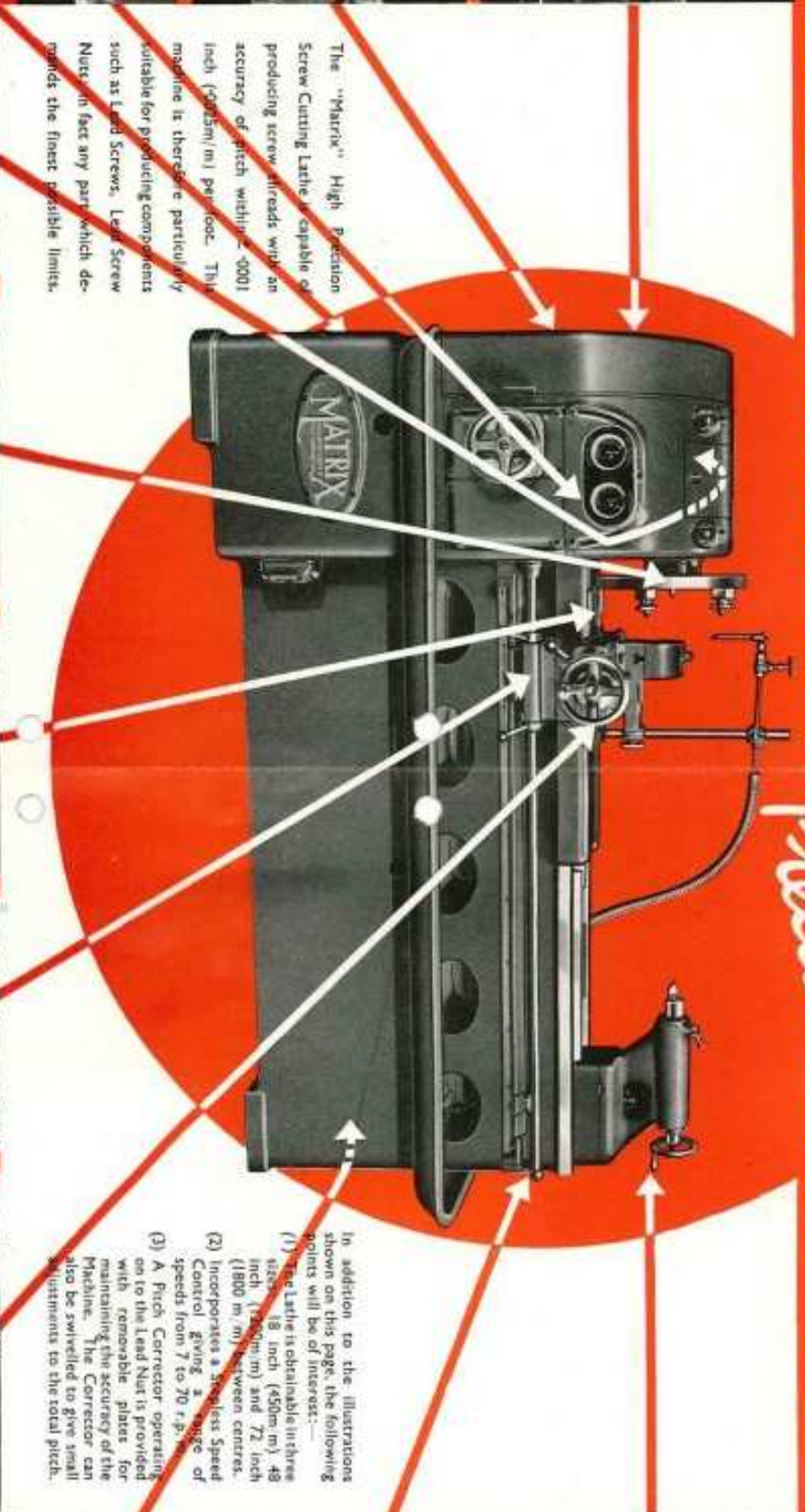
Gear set-up for left-hand threads. Note ball-bearing Idler Gear.



Electrical Control Panel incorporates control for simplifying left-hand thread cutting.



Electrical Control Gear on hinged panel accessible for maintenance. Opening also gives access to main drive unit.



The "Matrix" High Precision Screw Cutting Lathe is capable of producing screw threads with an accuracy of pitch within $\pm .0001$ inch (.00254 mm) per foot. This machine is therefore particularly suitable for producing components such as Lead Screws, Lead Screw Nuts, in fact any part which demands the finest possible limits.

In addition to the illustrations shown on this page, the following points will be of interest:—

- (1) The Lathe is obtainable in three sizes—18 inch (450 mm), 48 inch (1220 mm) and 72 inch (1800 mm) between centres.
- (2) Incorporates a Stepless Speed Control giving a range of speeds from 7 to 70 r.p.m.
- (3) A Pitch Corrector operating on to the Lead Nut is provided with removable plates for maintaining the accuracy of the Machine. The Corrector can also be swivelled to give small adjustments to the total pitch.



Tailstock incorporates correction device to ensure parallelism of work.



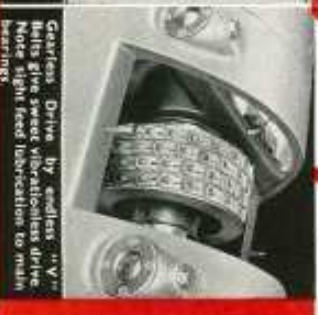
Substantial Guide Ways ensuring long life. Rigid design of base, eliminating distortion.



Coolant System is self-contained therefore impossible to leak.



This simple but accurate Taper Thread Unit may be ordered with machine if required.



Gearless Drive by endless "V" belts give smooth vibrationless drive. Note slight feed lubrication to main bearings.



14 inch Precision Face Plate with hardened and ground Clamp Blocks for Interval Work.



Generous slideways and enclosure of Central Lead Screw. Lubrication of Slideways and Lead Screw Nut is continuous.



Travelling Traverse controls. Either hand operated or by automatic stops.



Strongly constructed Saddle. Protected Slideways. Large Micrometer Feed Dials and quick Tool Withdrawal Lever.



High Precision

SCREW CUTTING LATHE

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STANDARD EQUIPMENT

Electric Motors and Control Gear.
 Headstock and Tailstock Centres.
 Set of Precision Cut Change Gears to cover six pitches.
 Oil Guns, Spanners, etc.

EXTRA EQUIPMENT

Extra Change Gears.
 Driving Plate.
 14" (350 m/m) Face Plate Complete with Special Clamps.
 6" (150 m/m) Face Plate Complete with Special Clamps.
 9" (225 m/m) Chuck and Adaptor.
 Pitching Handle.
 Pitch Corrector (to be ordered with machine.)
 Taper Attachment.
 Fixed Steady. $\frac{1}{4}$ " (6 m/m) to 3" (75 m/m) dia.
 Travelling Steady. $\frac{1}{2}$ " (12 m/m) to 3" (75 m/m) dia.
 Internal Tool Block.
 External Tool Block.
 Lighting Equipment.
 Microscope.
 Coolant System.
 Change Gear Plates for Long and Short Pitches.

DIMENSIONS AND CAPACITIES

Between Centres	18" (450 m/m)	48" (1200 m/m)	and 72" (1800 m/m).
Swing over bed	.....	.....	15" (375 m/m).
Swing over Saddle	.....	.....	9" (225 m/m).
Taper in Workhead	.....	.....	No. 4 Morse.
Taper in Tailstock	.....	.....	No. 3 Morse.
Max. Pitch Recommended	.....	.....	1" (25 m/m).
Max. Taper	.....	4" (100 m/m) per foot on dia.	
Max. Spindle Speed	.....	.....	70 R. P. M.
Min. Spindle Speed	.....	.....	7 R. P. M.
Max. Return Speed	.....	.....	280 R. P. M.
H.P. of Main Motors	.....	.....	$\frac{1}{2}$ - 1 H.P.
Capacity of Coolant Pump	.....	3 gallons (13.5 Litres) per min.	
Capacity of Coolant Tank	.....	2 $\frac{1}{2}$ gallons (11.25 Litres).	
Approx. Nett Weight	(18" crs.)	35 cwt.	(48" crs.) 40 cwt. (72" crs.) 50 cwt.
Approx. Gross Weight	(18" crs.)	50 cwt.	(48" crs.) 60 cwt. (72" crs.) 70 cwt.
Approx. Shipping Dimensions	(18" crs.)	37" x 68" x 60"	(48" crs.) 37" x 98" x 60" (72" crs.) 37" x 124" x 60"
Floor Space Occupied	(1)	31" x 62" (775 m/m x 1550 m/m).	(2) 31" x 92" (775 m/m x 2300 m/m). (3) 31" x 118" (775 m/m x 2950 m/m).
Total Height	.....	.....	54" (1350 m/m).



Change Gears are precision cut from stabilized close-grained cast iron.



Toughened steel universal external Tool Block.



6 inch Precision Face Plate and Standard Driving Plate.



Rigid 3-point Fixed Steady.



Internal Tool Block with eccentric Bush for accurate setting of the tool height.



Lever for hand rotating the Lead Screw for setting up purposes.



14 inch Precision Face Plate with hardened and ground Clamp Blocks for internal Work.



Viewing microscope essential for Fine Pitch work

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