

GEARED SCROLL 3-JAW CHUCKS MODEL NO 273D

Guarantee

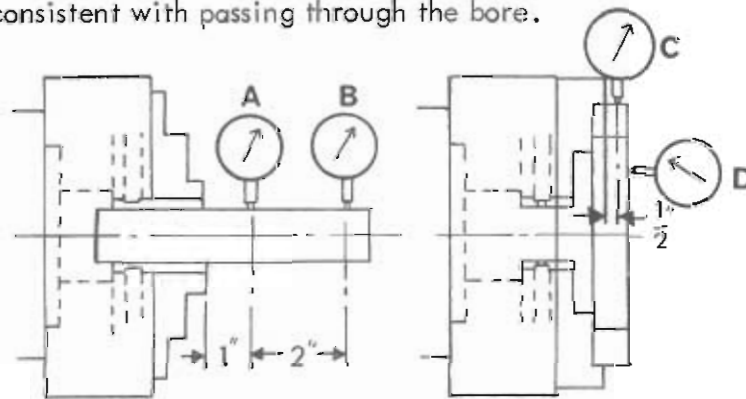
We hereby authorise accredited stockists of Pratt Chucks to replace this Chuck free of all charge should failure occur, due either to faulty material or workmanship, within a period not exceeding two years from date of purchase. In cases where a reasonable doubt exists the Chuck must be returned for examination prior to a replacement being made.

F. Pratt & Co. Ltd., earnestly desire that this tool gives every satisfaction and would be grateful if any complaint which may arise be brought immediately to their attention.

ACCURACY

This Chuck has been manufactured according to the limits of accuracy laid down in British Standards 1983 : 1953, which states :-

"The test bars used shall be capable of being passed through the bore in the Chuck body, and may be of any diameter up to the maximum capacity of the Chuck consistent with passing through the bore.

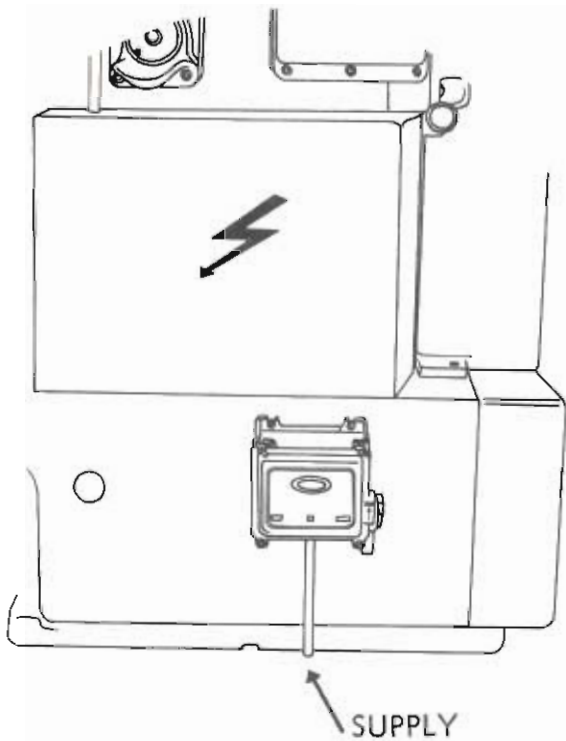


Permissible error total indicator reading.

At	A	.003"	Any Key Position
At	B	.003"	Master Pinion Only
At	C	.003"	Master Pinion Only
At	D	.003"	Master Pinion Only

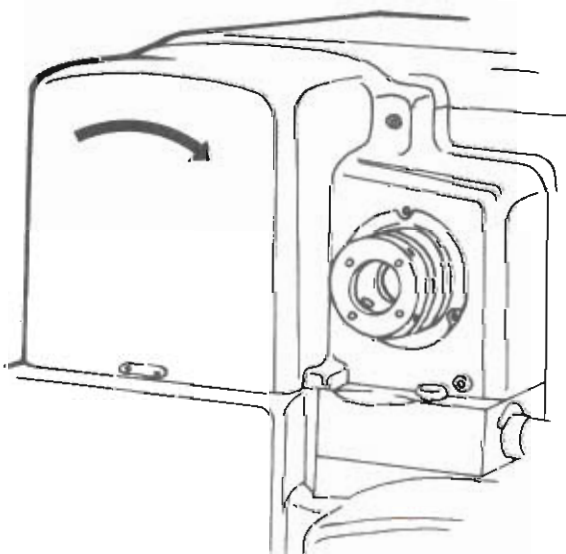
2.6 ELECTRICAL INSTALLATION

The electrical equipment supplied with each machine varies with the electrical supply and customers particular requirements. Wiring should therefore be carried out in accordance with the diagrams provided in section 12 of this handbook.



The supply voltage should be checked against the equipment supplied. Lathes for transportation by sea have sealing paper behind the control panel door, this should be removed before putting the electrical equipment into operation.

Connect supply to isolator switch at rear of lathe. This switch is interlocked with control panel cover with the exception of lathes for Canada when a junction box is supplied.



Check direction of motor rotation as indicated by arrow on pulley guard at the headstock end of the lathe.

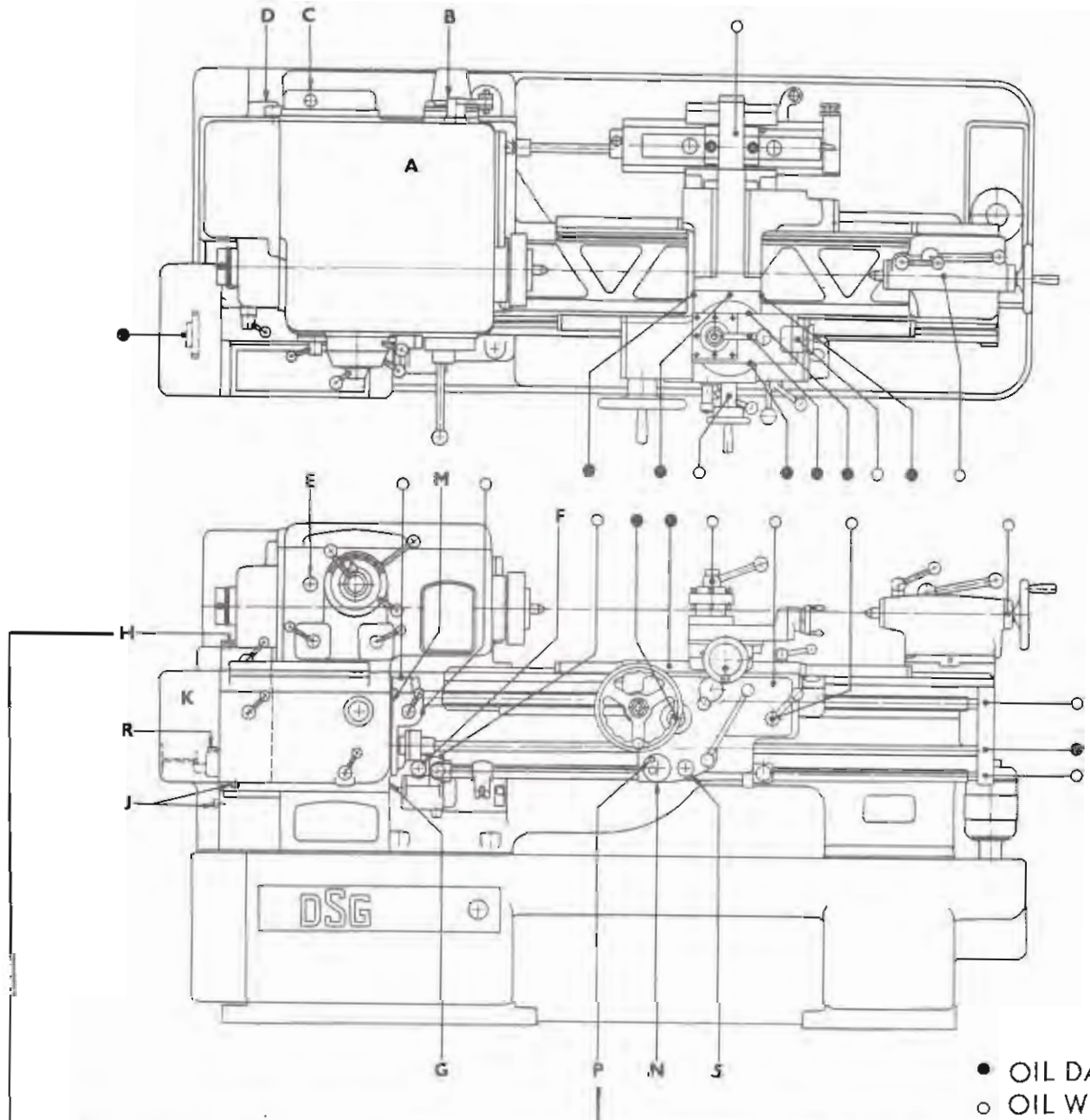
3.1 LUBRICATION

Turbo 32 HEADSTOCK OIL

Use Shell Vitro-27 or equivalent oil. Specification as follows

} Specific gravity .86	} Viscosity at 100°F.	} { 150 Redwood Sec. (36.5cs.)

CHANGE OIL IN HEADSTOCK EVERY 6 MONTHS - QUANTITY 26 PINTS (14.8 LITRES)



SUN 11-80 TABLEWAY OIL FOR APRON, GEARBOX AND OIL GUN

Use Shell Tonna 33 or equivalent oil. Specification as follows

} Specific Gravity .875	} Viscosity at 100°F.	} { 280 Redwood Sec. (69 cs.)

Containing non-drip, anti-wear and oiliness additives

CHANGE OIL IN GEARBOX EVERY 3 MONTHS - QUANTITY 3 PINTS (1.7 LITRES)

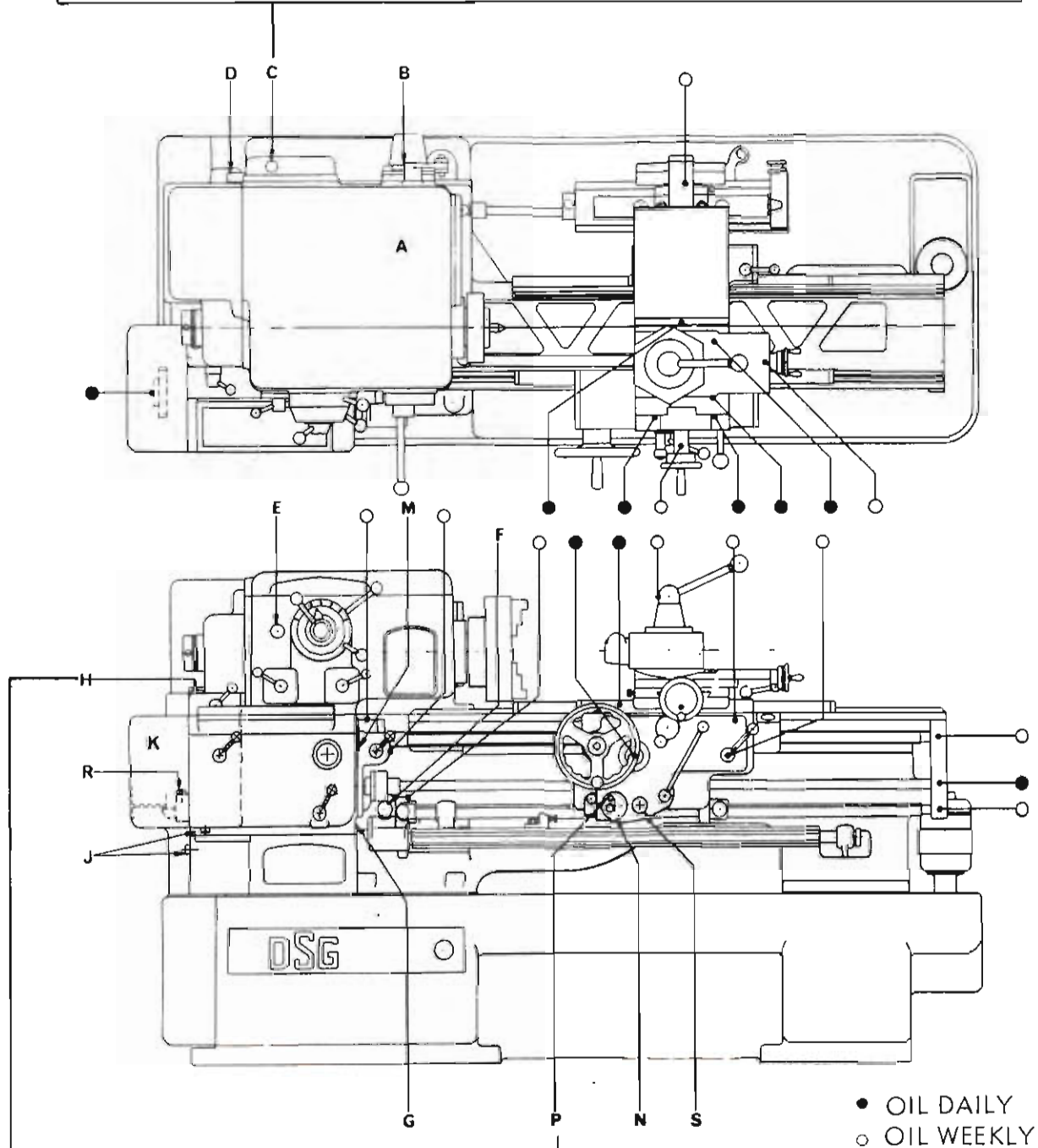
NOTE:- GREASE MUST NEVER BE USED IN THE OIL GUN

3.1 LUBRICATION

HEADSTOCK OIL

Use Shell Vitrea 27 or equivalent oil. Specification as follows	Specific gravity .86 Flash point closed 400°F.	Viscosity at 100°F. { 150 Redwood Sec. (36. Sec.) Viscosity index - 95 { 170 Saybolt
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CHANGE OIL IN HEADSTOCK EVERY 6 MONTHS - QUANTITY 26 PINTS (14.8 LITRES)



TABLEWAY OIL FOR APRON, GEARBOX AND OIL GUN

Use Shell Tonna 33 or equivalent oil. Specification as follows	Specific Gravity .875 Flash point closed 400°F. Containing non drip, anti-wear and oiliness additives	Viscosity at 100°F. { 280 Redwood Sec. (69 cis.) Viscosity index - 95 { 320 Saybolt
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CHANGE OIL IN GEARBOX EVERY 6 MONTHS - QUANTITY 3 PINTS (1.7 LITRES)

NOTE:- GREASE MUST NEVER BE USED IN THE OIL GUN

3.11 LUBRICATION continued

HEADSTOCK

Remove the sealing tape from the breather hole on oil sight 'D'.

The gears and bearings in the headstock are lubricated by the gear pump 'A' situated inside the headstock. The pump can be primed by means of the nipple on the top of the pump body, to effect this, it is necessary to remove the cover from the top of the headstock.

The oil sight 'E' indicates when the oil pump is functioning.

From the pump the oil passes through a combined mechanical and magnetic filter 'B' which should be removed monthly and both elements cleaned. To clean, unscrew the filter and withdraw it from the body casting, then for access to the magnetic filter, remove the knurled nut at the rear.

The headstock is filled through cap 'C' to the centre of the oil sight 'D' with the lathe at rest. The quantity of oil required is 26 pints, (14.8 litres).

To drain the headstock remove cap 'F' at the front of the bed.

The oil should be changed every 6 months. When changing, clean the filter, remove the top cover, clean the headstock and flush out the sump.

Use a flushing oil and NOT petrol or paraffin.

GEARBOX

The gears and bearings in the gearbox are lubricated by a plunger pump situated under the cover 'K'. To prime, remove the plug 'R' at the top of the pump. The oil sight 'M' indicates when the oil pump is functioning.

The gearbox is filled through cap 'H' to the centre of the oil sight 'G' with the lathe at rest. The quantity of oil required is 3 pints, (1.7 litres).

To drain remove plugs 'J'.

The oil should be changed every six months.

● CHANGE GEARS

The change gear teeth and the intermediate stud situated under the cover 'K' should be oiled daily as these run continuously.

● BED GUIDEWAYS

The bed ways are oiled by the hand pump 'N' at the front of the apron. Give 6 strokes per day. Fill and keep to the centre of the oil sight 'S' through cap 'P'.

● APRON

The apron should be oiled daily through the nipples at the front of the left hand saddle wing and the centre of the rack pinion shaft.

● SADDLE AND COMPOUND SLIDES

Oil the slideways daily through the nipples provided. The tool slide screw nut is oiled through the nipple at the centre of the tool slide.

● CROSS SLIDE NUT

Oil daily through the nipple on the top of the cross slide.

● TAIL END BRACKET

The feed shaft bearing should be oiled daily through the nipple in the centre of the Tail End Bracket.

○ GENERAL

All other points should be oiled weekly through the nipples indicated by red washers, using the oil gun provided.

3.2 CARE OF MACHINE

TO HELP ENSURE EFFICIENCY & ACCURACY OF THE MACHINE IT IS ESSENTIAL THAT THE POINTS NOTED HERE ARE CARRIED OUT.

- * Ample & correct lubrication, together with regular oil changes. See machine lubrication section 3.1
- * It is advisable to flush out the headstock & gear box when changing the oil. Use a flushing oil & NOT petrol (gasoline) or paraffin (kerosene).
- * Regular cleaning of the machine is paramount. DO NOT, UNDER ANY CIRCUMSTANCES USE COMPRESSED AIR FOR CLEANING. This will force foreign particles under slides and moving parts affecting the performance & accuracy of the machine. Lubricate machine immediately after cleaning.
- * Ensure that all slide & guideway wipers are regularly cleaned and in good condition, replace if damaged.
- * Do NOT use overstrong coolant solutions as these may damage the paintwork.
- * When removing or replacing chucks & faceplates etc., place a board on the bed to protect the guideways from bruising.
- * To prevent damage or scratching hammers, spanners, tools etc., must NOT be placed on the bed guideways.
- * Before fitting chucks etc., or attachments ensure mating parts are clean & free from bruises.
- * If the machine has been standing over the weekend or for longer periods do not immediately engage top speed, but run for a short time on intermediate speed. Ensure that the oil is circulating by running drive motor for a few minutes before engaging the clutch.

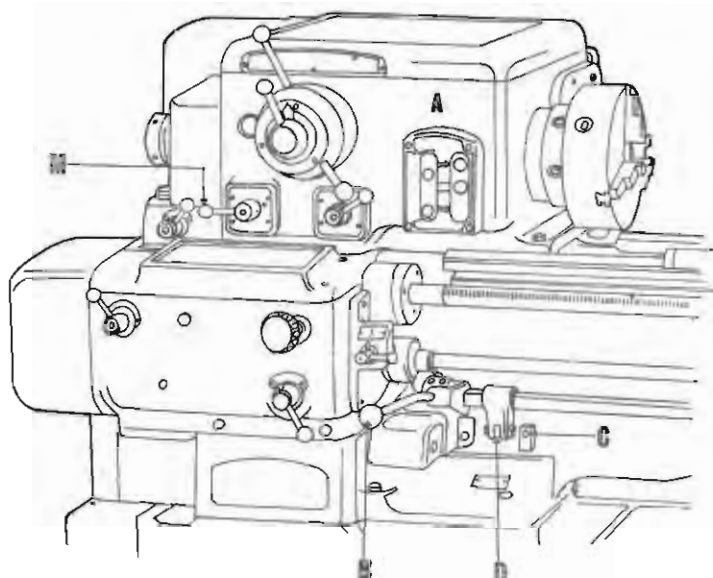
RECOMMENDED LUBRICANTS

FOR ALL TYPES OF LATHE (EXCEPT NC)

ASSEMBLY	SHELL	CASTROL	MOBIL	GULF
HEADSTOCK	VITREA 27 <i>TURBO 32</i>	HYSPIN AWS. 32	D.T.E. 24	HARMONY 44 <i>32</i>
THREAD & FEED GEARBOX	TONNA 33	MAGNA BD.	VACTRA NO. 2	GULFWAY 52
APRON, SADDLE & SLIDEWAYS	TONNA 33	MAGNA BD.	VACTRA NO. 2	GULFWAY 52
ELECTRICALLY OPERATED TURRET	VITREA 27 <i>TURBO 32</i>	HYSPIN AWS. 32	D.T.E. 24	HARMONY 44 <i>32</i>
RELIEVING UNIT, INCLUDING G/BOX	TONNA 33	MAGNA BD.	VACTRA NO. 2	GULFWAY 52
LUNZER INTEGRAL REVOLVING CENTRE	ALVANIA EP2	SPHEEROL EPL 2	MOBILPLEX 47	GULFCROWN NO. 2
HYDRAULIC COPYING UNIT	TELLUS 33 <i>68</i>	HYSPIN AWS. 68	D.T.E. 26	HARMONY 44 <i>68</i> AW
OIL NIPPLES & OIL GUN	TONNA 33	MAGNA BD	VACTRA NO. 2	GULFWAY 52

NOTE! THE NUMBER OF OILS HAS BEEN KEPT TO A MINIMUM. QUANTITIES & REGULARITY OF CHANGES ARE LISTED FOR EACH MODEL ON SEPARATE DIAGRAM & LUBRICATION SHEET.

4.1 STARTING & SPEED SELECTION



Do not start headstock before reading lubricating instructions section 3. Electrical equipment cannot be operated until isolator switch at rear of lathe is closed.

The headstock drive motor and coolant pump motor are started from push buttons on panel 'A'.

Clutch engagement is by lever 'B' which has three positions :-

- UP - for forward spindle rotation.
- CENTRAL - for brake.
- DOWN - for reverse spindle rotation.

For normal turning operations forward and brake are used. Block 'C' should be turned to horizontal position behind lever 'D'. This prevents accidental engagement of the reverse clutch. To engage reverse, turn block 'C' to vertical position.

DONOT PASS FROM FORWARD TO REVERSE, without holding in brake position until spindle stops.

When running at high speeds for polishing, the feed reverse lever 'M' should be placed in the neutral position, to avoid running the feed drive gears at excessive speeds.

SPINDLE SPEEDS

Standard headstocks can be supplied in 3 speed ranges giving 12 forward speeds and 6 reverse speeds.

	FAST RANGE PULLEY SPEED 1295 R. P. M.						MEDIUM RANGE PULLEY SPEED 925 R. P. M.						SLOW RANGE PULLEY SPEED 655 R. P. M.					
FORWARD	35	49	70	97	140	194	24.5	33	48	67	97	134	17.5	25	35	49	70	97
	250	355	500	710	1000	1400	180	250	355	500	710	1000	125	180	250	355	500	710
REVERSE		49		97		194		33		67		134		25		49		97
		355		710		1400		250		500		1000		180		355		710

HIGH SPEED HEADSTOCK

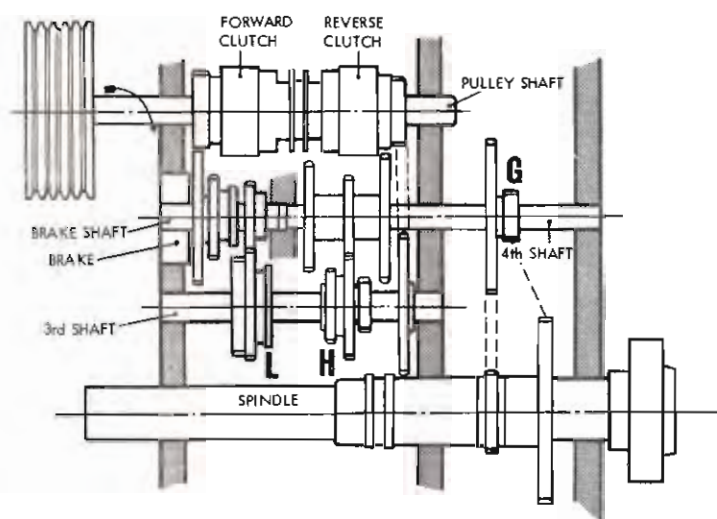
This is supplied as an alternative to the standard headstock and incorporates a toothed belt overdrive to the spindle. This feature increases the number of forward speeds to 18 and reverse speeds to 9.

	FAST RANGE PULLEY SPEED 1295 R. P. M.						MEDIUM RANGE PULLEY SPEED 925 R. P. M.						SLOW RANGE PULLEY SPEED 655 R. P. M.						
FORWARD	BELT	400	560	800	1120	1600	2240	280	400	560	800	1120	1600	200	280	400	560	800	1120
	GEAR	35	49	70	97	140	194	24.5	33	48	67	97	134	17.5	25	35	49	70	97
REVERSE	BELT		560		1120		2240		400		800		1600		280		560		1120
	GEAR		49		97		194		33		67		134		25		49		97
		355		710		1400		250		500		1000		180		355		710	

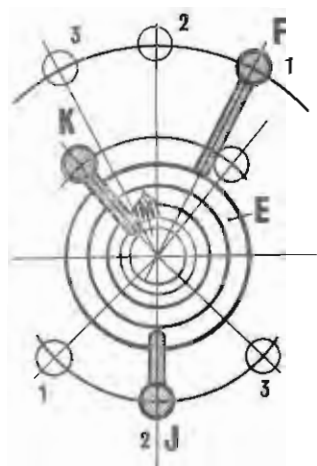
4.11 STARTING & SPEED SELECTION continued

STANDARD HEADSTOCK

Spindle speeds are indicated on the plastic cone 'E'. Two ranges are shown indicated by 'HIGH GEAR' and 'LOW GEAR'. Orange coloured figures indicate reverse speeds.



The engagement of the high or low gear is by lever 'F' controlling gear 'G'. Position 1 is low gear, position 2 neutral and position 3 high gear. (The gear ratio between low and high is 7.25 : 1).



Gear 'H' is operated by lever 'J' which gives three speed changes and moves plastic cover 'E'. It will

be seen that speeds are grouped in pairs, the left hand pair representing lower speeds, the right hand pair intermediate speeds and the central pair higher speeds. Position 1 and 3 of lever 'J' are extreme movements and position 2 is indicated by a spring plunger location. THIS LEVER SHOULD ALWAYS BE POSITIONED AT 1, 2 OR 3 AND MUST NOT BE LEFT IN A NEUTRAL POSITION BETWEEN 1 AND 2 OR 2 AND 3, otherwise difficulties may be experienced in engaging speeds and damage to gear teeth can be caused. If gears prove difficult to engage, stop motor and restart. Lever 'K' controls gear 'L' giving two speeds which are indicated by pointer 'M'.

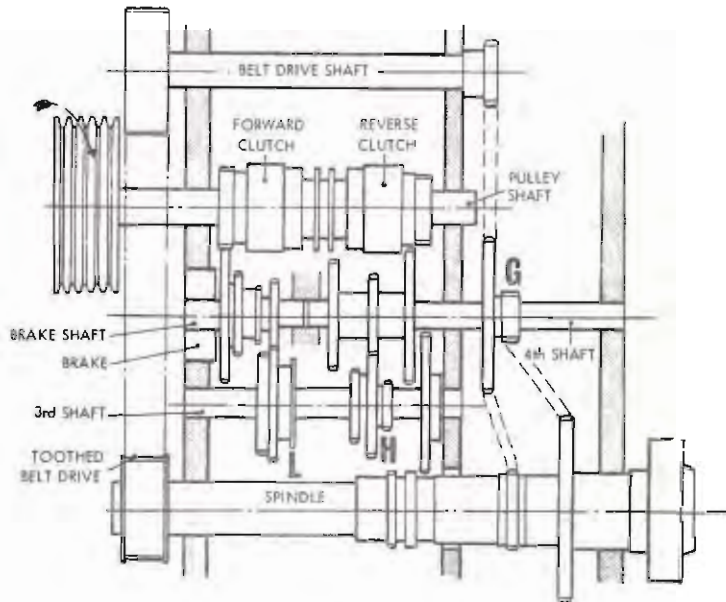
TO SELECT A REQUIRED FORWARD SPEED. Disengage clutch, determine if speed is in the high or low gear range and position lever 'F' accordingly. If speed is in a left hand pair, move lever 'J' to position 1, if in central pair to position 2 and right hand pair to position 3. Finally move lever 'K' to bring pointer 'M' opposite speed required.

Do not engage gears with shafts rotating at high speeds. If difficulty is experienced in engaging a gear momentarily engage clutch.

TO SELECT A REVERSE SPEED. Move lever 'F' to appropriate range, position lever 'J' as for forward speeds. Engage clutch by moving lever 'B' downwards. Note that lever 'K' does not change reverse speeds.

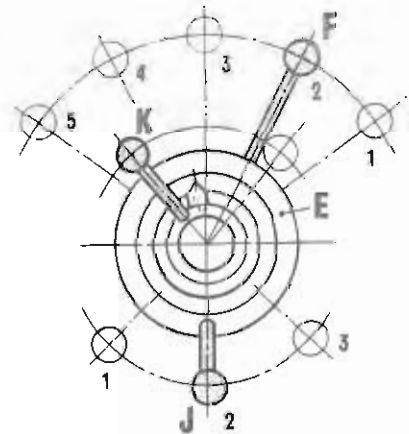
4.12 STARTING & SPEED SELECTION continued

HIGH SPEED HEADSTOCK



Spindle speeds are indicated on the plastic cover 'E'. Three ranges are shown indicated by 'BELT DRIVE', 'HIGH GEAR' and 'LOW GEAR'. Orange coloured figures are speeds obtained in reverse as well as forward.

The engagement of the 'High', 'Low' or 'Belt drive' is by lever 'F' controlling gear 'G'. Position 1 is low gear, position 2 neutral, position 3 high gear, position 4 neutral and position 5 belt drive. The speed ratio between low and high is 7.25 : 1 and between high and belt drive is 1.6 : 1.



Gear 'H' is operated by lever 'J' giving three speed changes and moves plastic cover 'E'. It will be seen that speeds are grouped in pairs, the left hand pair representing lower speeds, the right hand pair intermediate speeds and the central pair higher speeds. Position 1 and 3 of lever 'J' are extreme movements and position 2 is indicated by a spring plunger location. THIS LEVER SHOULD ALWAYS BE MOVED SHARPLY INTO POSITION AND MUST NOT BE LEFT IN A NEUTRAL POSITION BETWEEN 1 AND 2 OR 2 AND 3, otherwise difficulty may be experienced in engaging speeds and damage to gear teeth can be caused. If gears should prove difficult to engage stop motor and restart. Lever 'K' controls gear 'L' giving two speeds which are indicated by pointer 'M'.

TO SELECT A REQUIRED FORWARD SPEED. Disengage clutch, determine if speed is in the high, low or belt drive range and position lever 'F' accordingly. If speed required is in a left hand pair move lever 'J' to position 1 if in central pair to position 2 and right hand pair to position 3. Finally move lever 'K' to bring pointer 'M' opposite speed required. Do not engage speeds with shafts rotating at high speeds. If difficulty is experienced in engaging a gear, momentarily engage clutch.

TO SELECT A REVERSE SPEED. Move lever 'F' to appropriate range, position lever 'J' as for forward speeds. Engage clutch by moving lever 'B' downwards. Note that lever 'K' does not change reverse speeds, speeds in white figures reverse at the next higher speed.