TRANSMISSION

It is important that any gear hobbing machine, if it is to produce extremely accurate components must utilize a transmission system that is as simple and direct as possible.

The Churchill Universal Hobbing Machine has been carefully designed with this important consideration in mind and the directness and simplicity of the transmission system is clearly shown in the diagram.

All main drive and feed gears are of accurately shaved helical form. Where bevel gears are fitted they are of the spiral type and are lapped in pairs before assembly to ensure smooth and quiet operation.

The main drive system, including its flange-mounted motor, is fitted within the column and the drive to the main drive shaft is through a toothed belt arrangement. To facilitate easy withdrawal, the main drive shaft and the vertical feed shaft and screw are all contained in independent housings attached to the column. The vertical feed nut is fitted with an anti-backlash device which is easily accessible for adjustment purposes.

The hob head is designed to incorporate one or all of the following motions to the hob slide:—

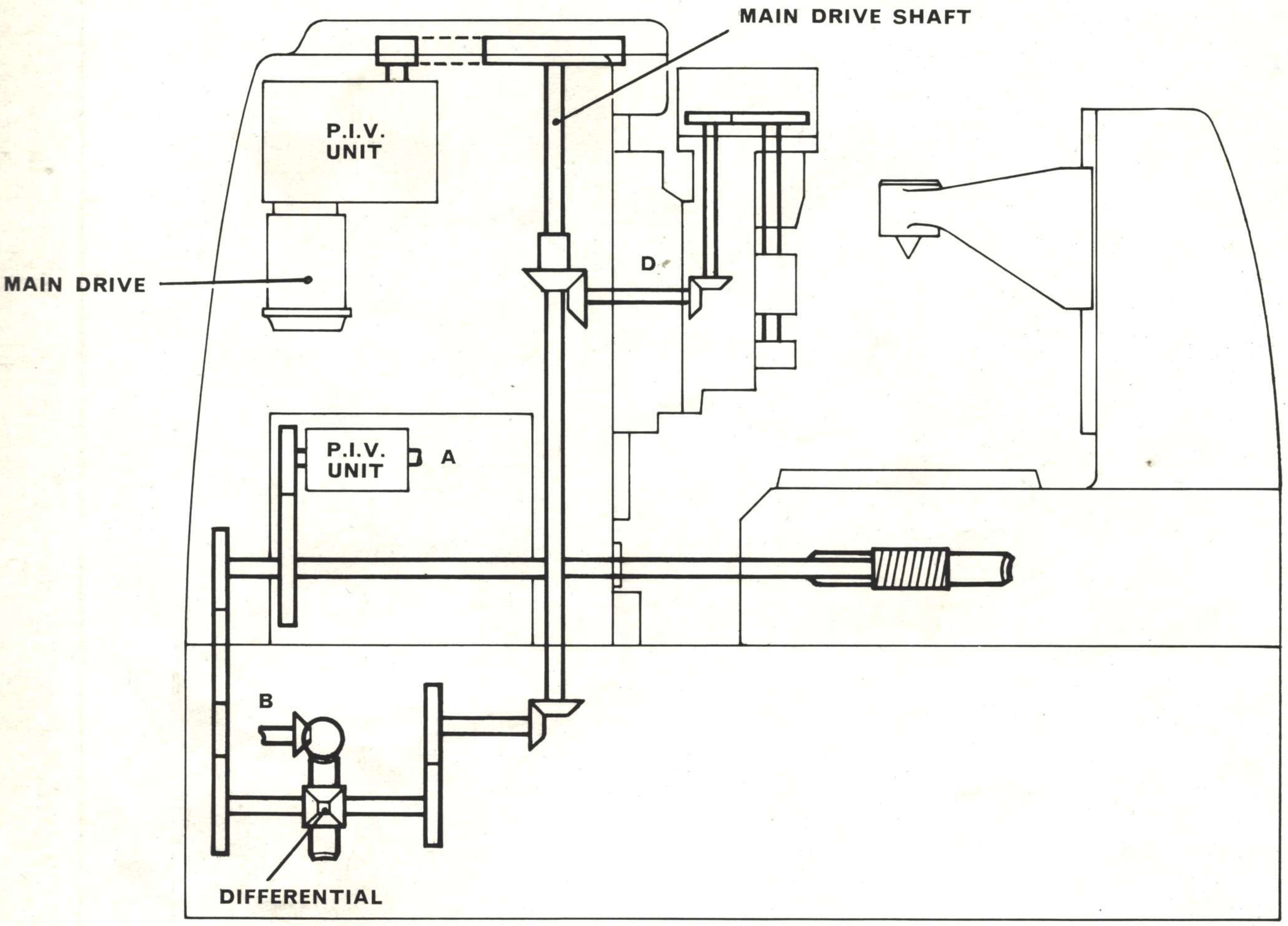
(a) Manual shift
(b) Continuous shift
(c) Intermittent shift
(d) Tangential feed

Change gears can be easily fitted to the hob head to vary the rates of shift and feed.

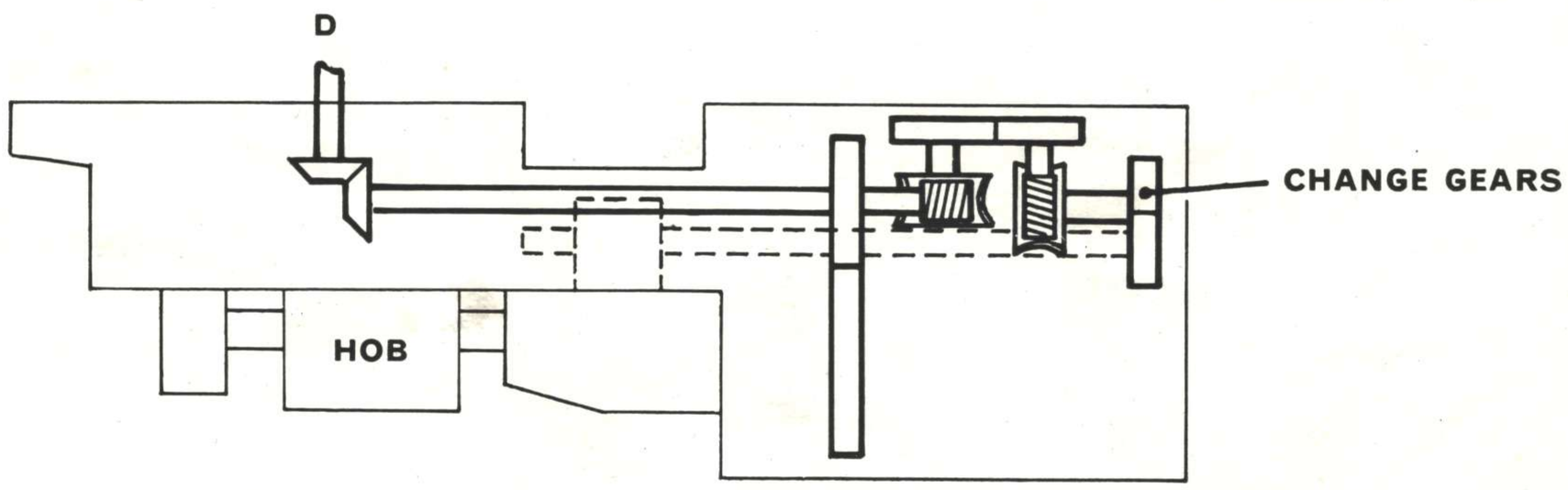
The indexing drive to the worktable spindle is through a 'dual-lead' worm and wormwheel to ensure extreme accuracy and backlash free operation.

The main drive system can be fitted with a P.I.V. unit giving variable speeds up to 4.5:1. Alternatively a Ward Leonard control system can be supplied, or for high production machines, a simplified system incorporating belt and pulleys.

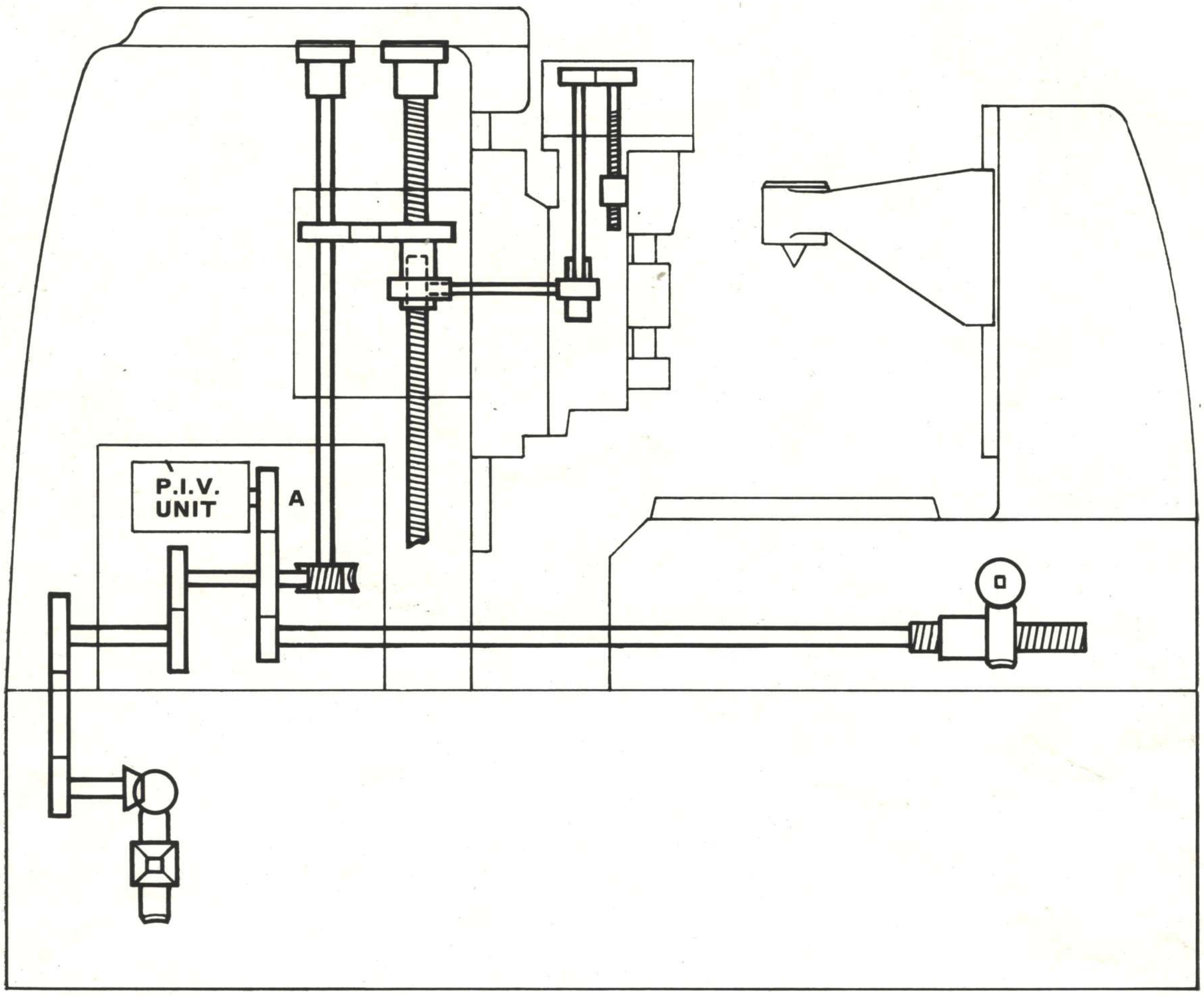
TRANSMISSION



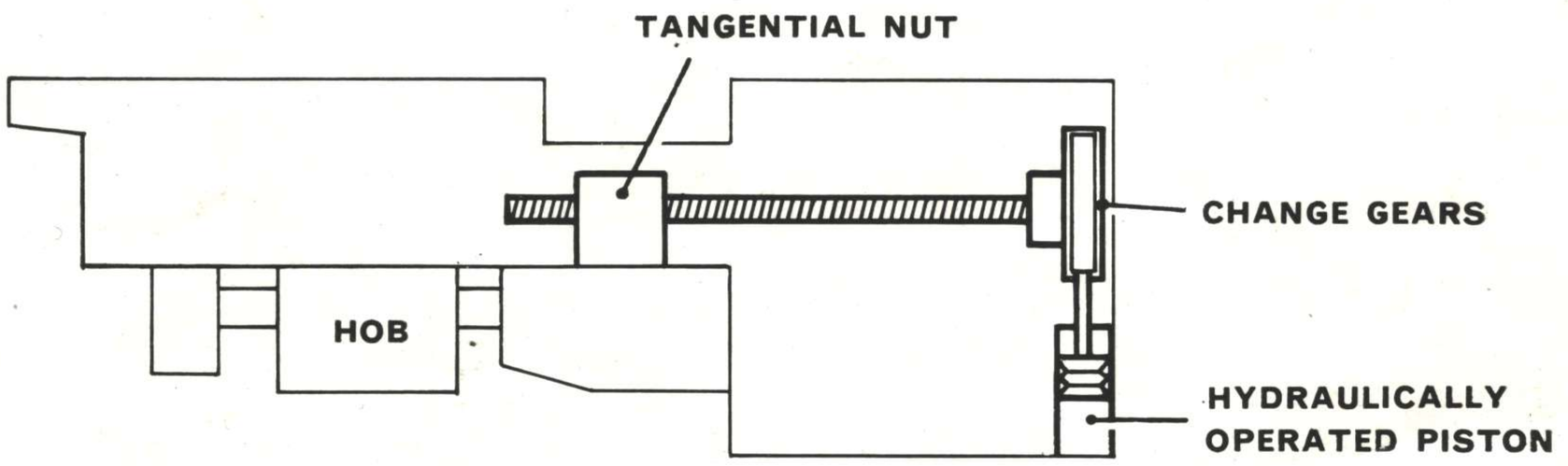
MAIN DRIVE AND INDEX SYSTEM



CONTINUOUS SHIFT

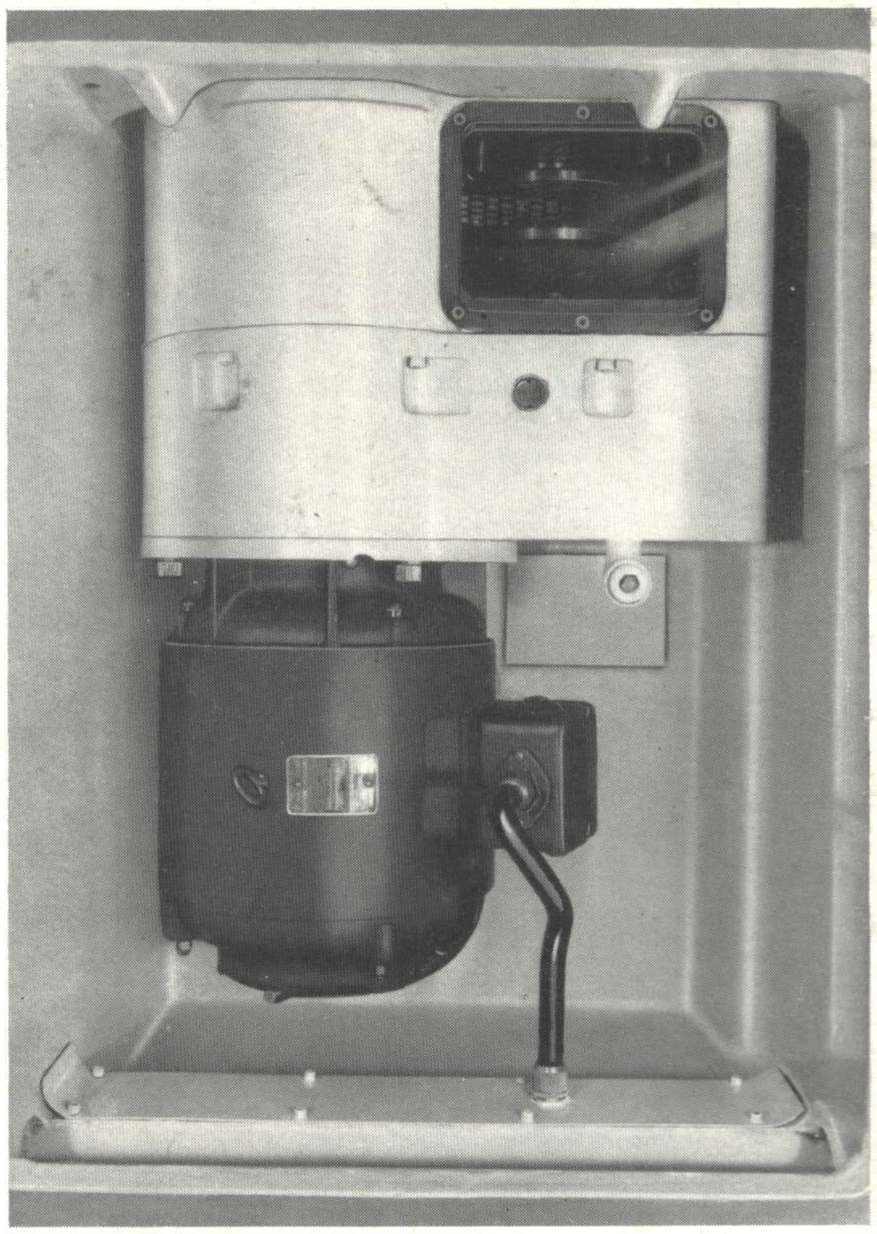


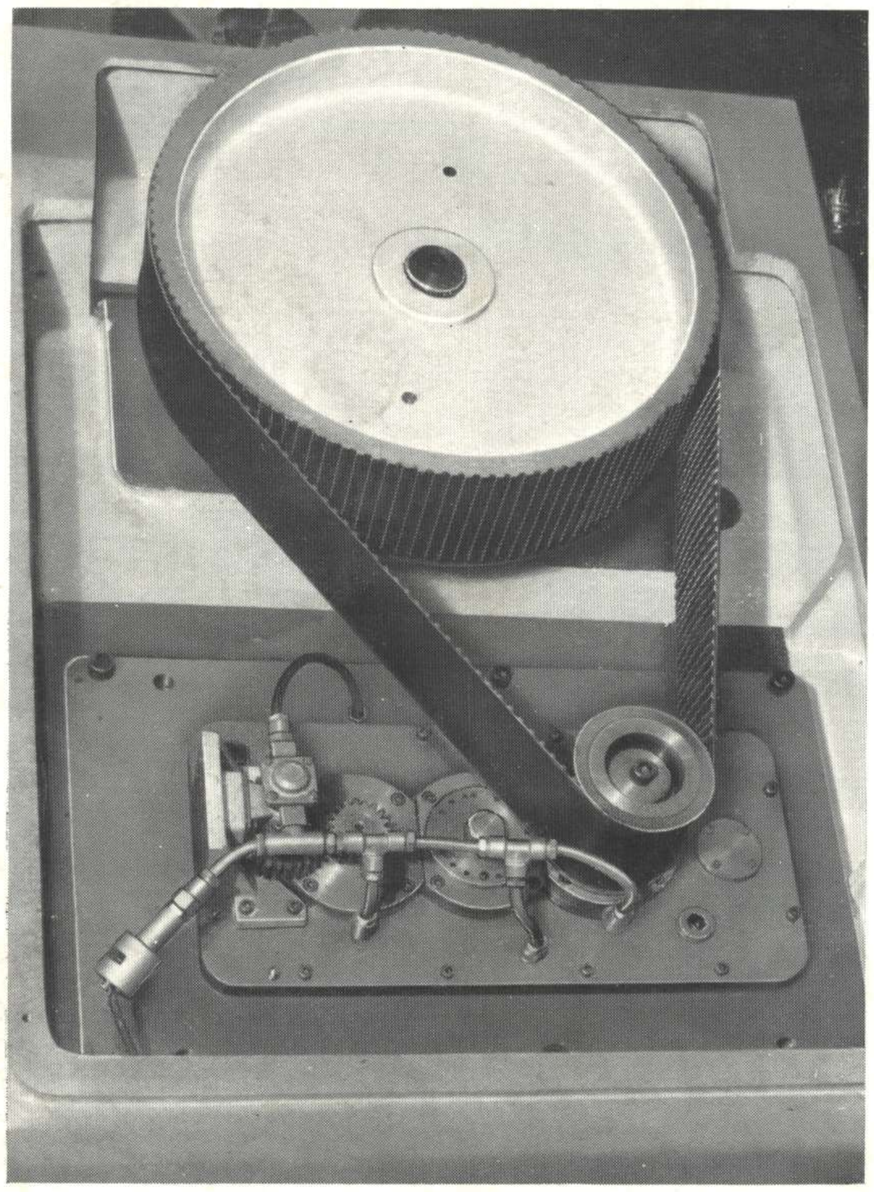
MAIN FEED SYSTEM



INTERMITTENT SHIFT

The main Drive Motor is flange mounted within the column and can be fitted with a P.I.V. unit giving variable speeds up to 4.5 : 1. Alternatively a Ward Leonard control system can be supplied or, for high production machines, a simplified arrangement incorporating drive belts and interchangeable pulleys.





The drive from the main drive motor to the vertical drive shaft is through a toothed belt and pulleys. To facilitate easy withdrawal, the main drive shaft and vertical feed shaft and screw are all contained in independent housings attached to the column.

The vertical feed nut is fitted with an anti-backlash device which is easily accessible for adjustment purposes.