TOS TRENČÍN SV 18 RD

Closely based on the long-established SV-18R (first offered during 1957), the newer SV-18RA, SV-18RB and SV-18RD models used the same headstock, and carriage assembly - but with (variously) a modified screwcutting and feeds' gearbox, new drive systems and the major castings and stand given a more up-to-date angular appearance. Introduced in the mid 1960s with an initial choice of 500, 1000, 1250 mm between centres (750 mm was to be added later), the first of the new versions was the SV18RA.

First sold during 1974, the SV-18RB was fitted with a massive, infinitely variable-speed (thyristor controlled) 13.5 h.p. DC motor. Instead of passing through a gearbox (as on the SV-18RA), the drive to the spindle was now direct from the motor pulley using the same wide flat belt as before. Although immediate electrical control of the lathe was simplified to a dial-equipped potentiometer fastened to the apron's right hand wall, with a built-in start/stop switch, the rest of the new electrical system required housing in a separate cabinet, the face of which housed the necessary main switchgear, push-button controls, warning lights and both ammeter and torque gauges. With the later introduction of the SV-18RD, the electrical cabinet was made smaller, the control panel improved and electrical details tidied up.

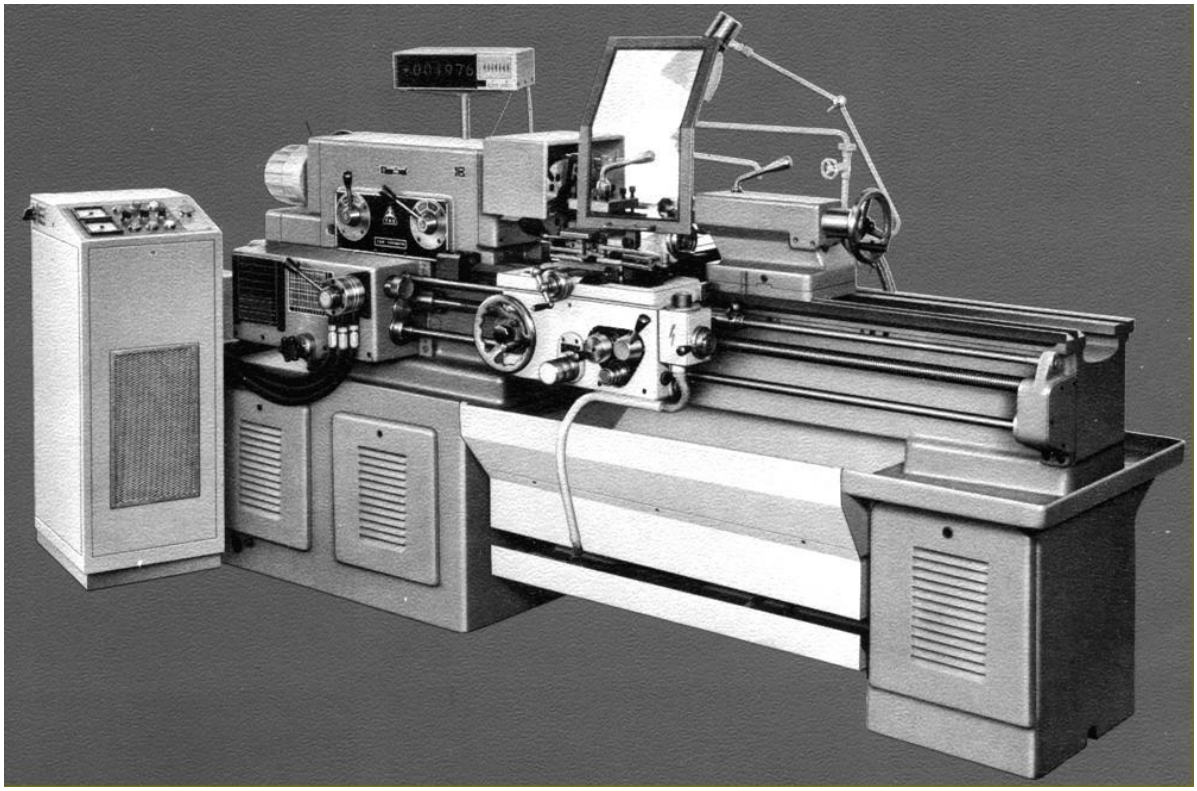
An interesting option made available by the variable-speed drive was a NC controlled mechanism that provided, via a precision backlash-free rack and electric motor, a constant cutting speed when facing - a decided advantage on large-diameter components that led to much improved surface finishes and reduced machining time. A switch on the control cabinet was provided to select manual or automatic constant-cutting spindle speeds - in the latter setting the speed being increased steplessly in such a manner that it reached its maximum of 2800 rpm near the centreline of the job. The control components consisted of a pick-up mounted on the cross slide, an amplifier, potentiometers for the rate of cutting and correction of the tool position in relation to the cross slide and indicator bulbs that showed how the correction of position was to be made.

Using exactly the same screwcutting and feeds' as the original SV-18R (and not the newer, improved box from the SV-18RA) it was possible, by dint of using alternative changewheels, to generate 127 metric, 188 English, 81 MOD and 70 Diametral pitches and 128 rates of feed 0.02 to 5.6 mm per revolution of the headstock spindle sliding and at half those rates surfacing.

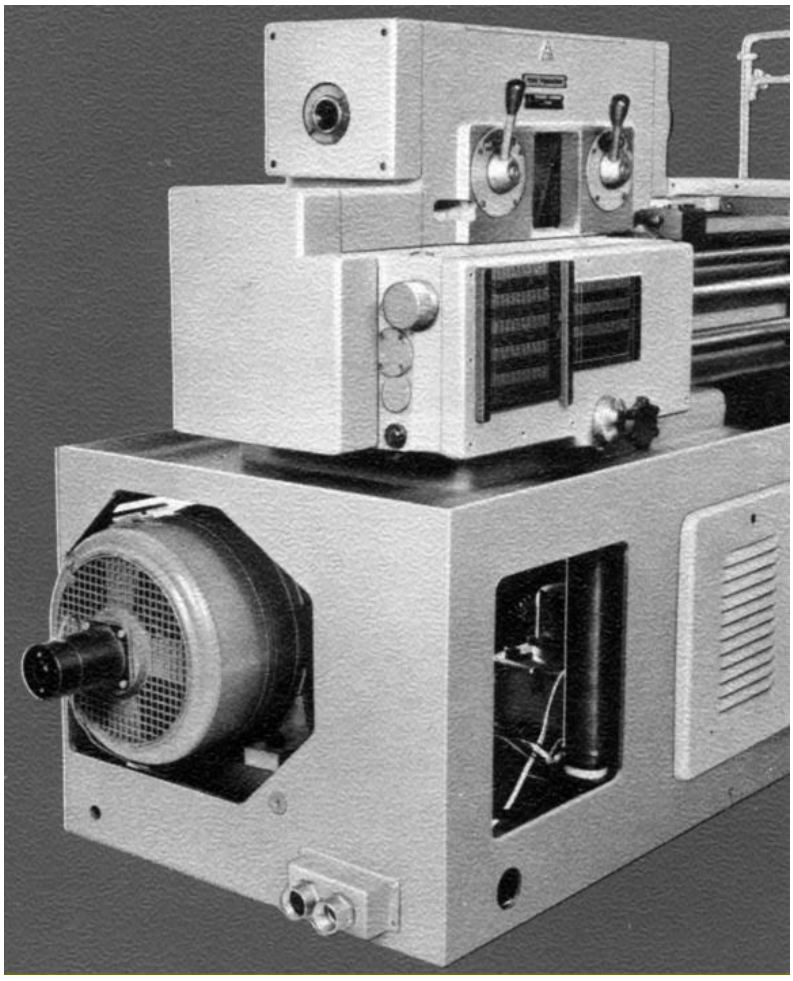
Of ordinary design, the set-over tailstock had a hardened, ground and lapped spindle with a 120 mm (4.75") stroke, a No. 3 Morse taper socket, metric ruler graduations and a large-diameter zeroing micrometer dial. A proper split-cylinder clamp locked the spindle and the whole assembly was secured to the bed by a lever-operated eccentric cross shaft (though it lacked a second bolt to help with heavy work).

Supplied as standard with each new machine were: a complete electrical installation, ready to run; two No.3 Morse centres; coolant equipment; ordinary radial-slotted faceplate, fixed steady, travelling steady, one simple stop for the carriage feed; two stops for the cross feed; a chuck backplate, a set of spanners and an operator's handbook.

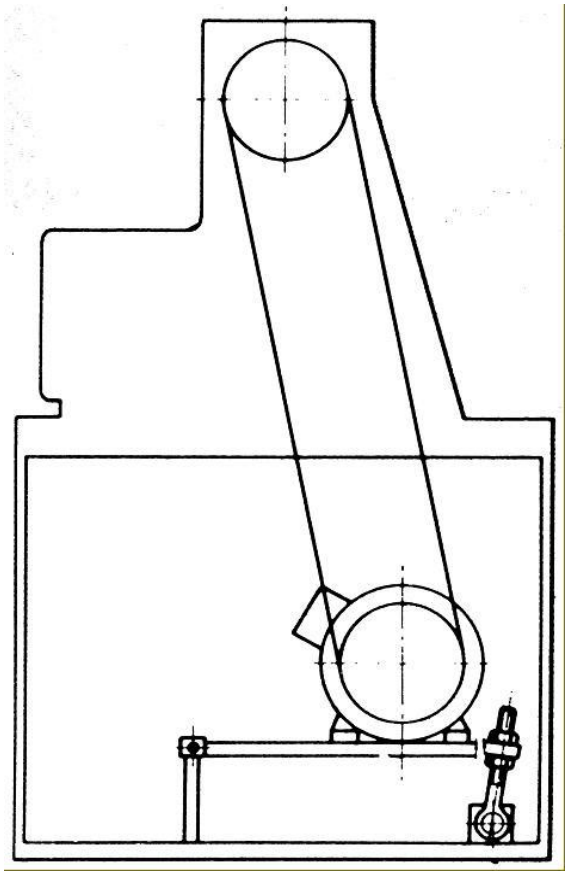
Accessories remained identical to those from earlier years: taper turning; 3 and 4-jaw chucks; a faceplate-cum 4-jaw chuck with radial sots and four T-slots to carry jaws; 4-way and quick-set toolholders; thread-dial indicator; micrometer stops for the carriage and cross feed; collet chuck with the usual range of round, square and hexagon collets with bores from 2 to 25 mm; a stepped master chuck (conical type) to hold outside clamping collets (five supplied from 20 to 64 mm); a stepped oversize master collet chuck (fit-tree type) for inside clamping with five collets from 35 to 80 mm; a second top slide unit; rear 4-way toolpost; angle plates a light unit and a most unusual spindle-nose fitting: an angle plate mounted on a compound slide rest.



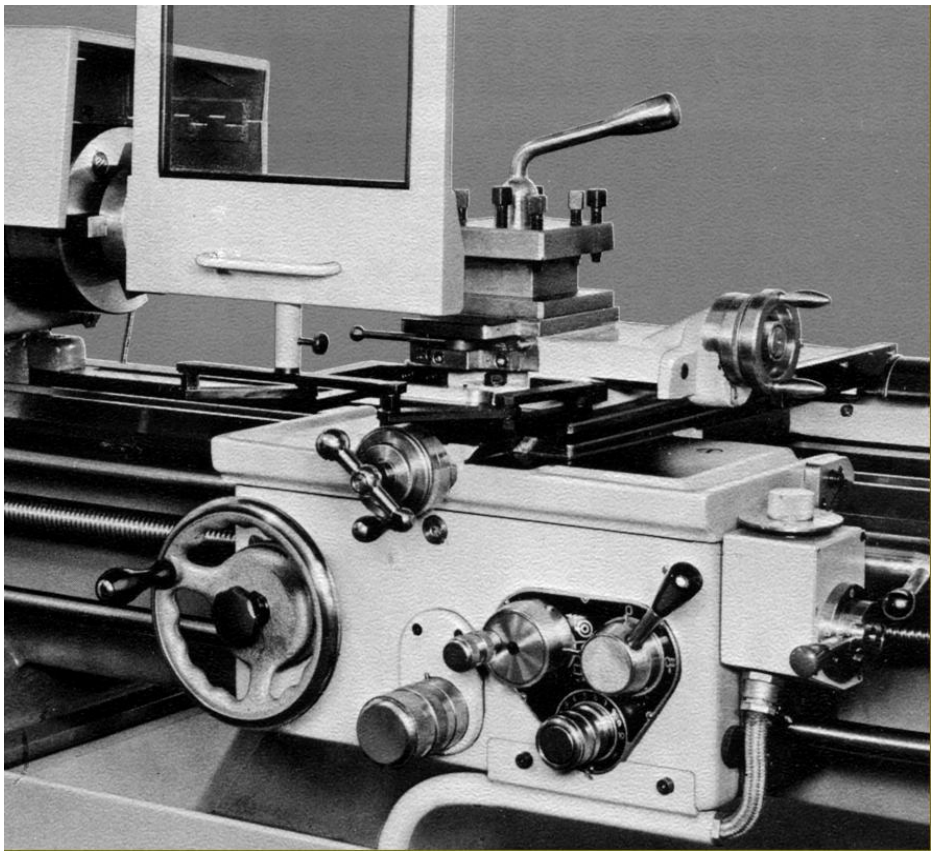
TOS SV-18RD fitted with constant-speed power cross-feed



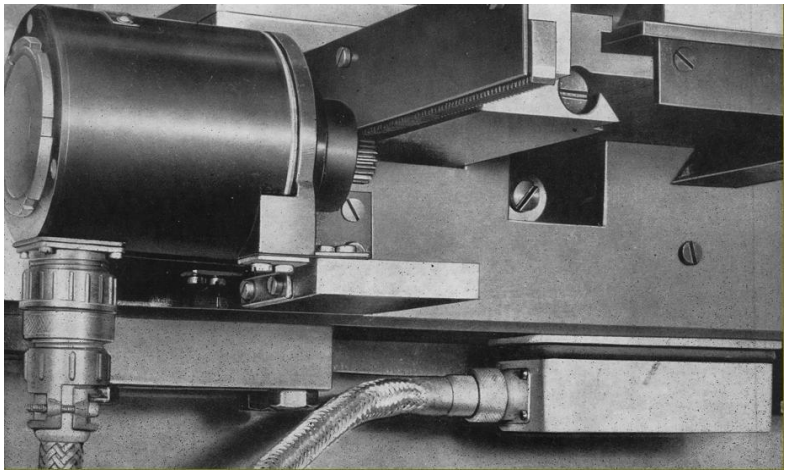
The massive 10 kW DC motor fitted to the variable-speed models



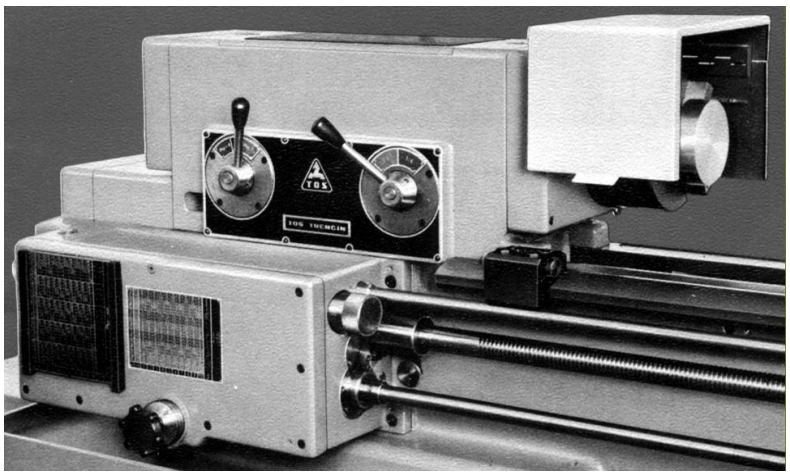
Drive to the spindle on the variable-speed models was direct by flat belt



Apart from the addition of a dial-equipped potentiometer fastened to its right hand wall (to control spindle speed) the carriage of the last SV-18RD models was identical to those made in 1957



Underneath the rear of the cross slide - part of the constant-speed feed mechanism



TOS SV-18RD - headstock and screwcutting and feeds' gearbox

Late-type control panel used on the floor-standing unit