



WESTERN SERVICES CORPORATION 601 E. Linden Ave., Linden, N.J. 07036

MACHINE TOOL DIVISION

Cable Address: Westco Linden NJ Telephone (201) 925-4940

H. 140"E"

TOOLROOM LATHE

The new H. 140"E" has many features found only in all high quality lathes.

All components are finely machined to close tolerances from the best materials assembled into an extremely precise machine tool.

Like all machinery of newer concept, we anticipate making improvements whenever the need or demand dictates.

No effort has been overlooked to produce this compact, precise machine to compete with those in electronics, space and quality tool shops.

In keeping with this effort, all castings are stabilized, aged, ni-chrome iron, bedways hardened and ground. All gears are heat treated ni-chrome steel ground to close tolerance on MATRIX or REISHAUER grinders.

We direct your attention to the description and function of the major assemblies:

THE HEADSTOCK:

The casting itself is high quality ni-chrome iron.

The spindle is forged ni-chrome steel hardened to 60 Rc. and ground all over. Super precision GAMET bearings, two in front and one in the rear, are used. To add to accuracy and to facilitate chuck mounting, there is a DI-4" CamLock nose with a 1-3/8" hole to accept 5C collets.

The lubrication system is of splash-force feed, filtered to eliminate contamination to the bearings.

All gears, sprockets, and shafts are hardened and ground.

A single patented back gear lever in front of the headstock gives 8:1 speed reduction.

To further insure spindle accuracy the GAMET bearings are pre-loaded and exactly adjusted.

THE BED:

A generously proportioned, wide, deep, nickel-chromium casting. The box type construction and excellent hardening properties of the material assure rigidity and sustained accuracy. The bed is ground on temperature controlled grinders.

The top of the bed is hollowed out for a distance of 8" to permit 1-1/2" more swing at the spindle nose without the sacrifice of rigidity. Removable guards over the bedways protect them from excess chips and dirt.

The two prismatic and two flat bedways are all hardened and ground to close tolerance.

POWER TRAIN - Motor and transmission:

A two speed motor 3 h.p. at 1500 RPM and 4 h.p. at 3000 RPM is mounted on a swivelling bracket in the base cabinet.

From the motor a flat belt drives the transmission gear box which drives a silent double roller chain. The chain drive is very quiet and vibrationless. The need for adjustment is negligible. (This system is far superior to an internal belt drive). The adjustment is made by releasing the hold down bolts of the transmission and lowering same to tighten the chain.

The transmission gears are wide width and of fine pitch to eliminate chatter. The gears are always meshed and are shifted by dog clutches. Here again, the gears and chain sprockets are hardened and ground.

The combination of the two speed motor, gear transmission and back gear, give 16 spindle speeds in geometrical progression.

THE QUICK-CHANGE FEED BOX:

A completely enclosed unit using the same oil as the headstock and transmission. Feeds can be preselected and changed while running.

Presently the feed box is in the metric version with the inch system to come later on. We can, however, offer inch system leads by means of pick-off change gears. We can chase 18 inch or metric leads with great accuracy from a leadscrew that is hardened and ground. The 18 leads are from 5 through 80 T.P.I. Since we have direct drive to the leadscrew we can cut special threads without a long gear train.

A word about threading - the feed and screw cutting gear box contains an automatic lead-screw kick-off with mechanical reverser. The kick-off is done by adjustable stops on a rectangular bar. Immediately after kick-off the operator moves the engaging lever to the left and the apron returns to original starting point at twice the speed. A dissymmetrical dog clutch is used so that the lead will not be lost. This feature is standard equipment.

THE SLIDE:

The cross slide is exceptionally long and of ample width to insure accuracy. A special handlever retracts the entire cross slide at the end of a thread or turned diameter. The forward motion has a positive stop to maintain depth or diameter control. There is an auxiliary graduated dial for the slide so that a series of cuts may be taken prior to the final stop. Once the final diameter has been reached it is not necessary to re-set it. This feature is standard equipment.

THE APRON:

Double wall with self contained oil bath and pump. The handwheel rack pinion is retractable for screw cutting. The half-nut is 3-1/2" long, cam actuated to insure the guiding over the leadscrew, and rides on hard steel guides.

A single lever actuates the half-nut as well as pre-selection of cross and long feeds. Each position locks out the previous motion for safety.

Two special tapered gibs 14" long guide and secure the carriage.

A magnetic torque limiter adjustable by the operator assures overload protected motion cross and long against positive stops.

TAILSTOCK:

The two speed tailstock with taper adjustment is unique in that there is a capstan (turret type) handwheel and small sensitive handwheel driving a slow acting worm gear.

The capstan is of great value for center drilling, spot facing, reaming, etc., while the ratio handwheel is used for sensitive drilling and bringing the center into play. The capstan engages into a prong socket and can easily be removed.

The tailstock quill is graduated in 1/32" divisions and has a travel of 7 inches.

A single cam acting lever locks the tailstock to the bed.

ELECTRICS:

All electrics are mounted on a panel and contained in an oil-tight cabinet mounted on the machine.

Incorporated are overload relays, circuit breaker, safety door interlocks, disconnect switch, glow lamp and main switch. The main switch has 4 positions; start forward, start reverse, stop, re-set. The re-set position is used in the event the quadrant gear door or electrical cabinet door has been opened.

Other switches are coolant pump, work light, high and low speed of motor.

The cabinet houses the motor, coolant pump with pull out pan and tool storage compartment. The cabinet is of heavy gauge steel, cross ribbed and welded into an integral unit.

SUMMARY:

The H.140"E" is the end result of research and design to complete our line of fine toolroom lathes. It is well to point out that over 7000 of the model H.130"F" are in operation.

We feel that from the information you have read, the H.140"E" is worthy of consideration.

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DEVALLIERE
 Tool Room Lathe
 H-140-E-3
 Quick Change Gear Box

A completely enclosed unit automatically lubricated by the headstock oil system.

All 50 feeds can be preselected and changed while running.

The leadscrew is hardened and ground for precise threading. The lead-screw kick-off has a mechanical reverser. There are two adjustable stops on a rectangular bar. The apron moves the engaging lever to neutral. The operator then re-engages the lever to left and apron returns to the right hand stop at twice the speed. A tapered dog clutch is used so the lead will not be lost. This is standard equipment.

FEEDS & THREADS

Number of Threads	63	Number of Feeds	50
Range of Threads	3-184	Range of Feeds	0005-.016"
Leadscrew - 4 threads per inch			

ACTUAL FEEDS & THREADS CUT

	3	3 1/4	5 1/2	3 3/8	3 1/2	3 3/4	4	4 1/2	5	5 3/4
	6	6 1/2	11	6 3/4	7	7 1/2	8	9	10	11 1/2
	.0158	.0146	.0086	.0140	.0134	.0126	.0118	.0105	.0099	.0082
	12	13	22	13 1/2	14	15	16	18	20	23
	.0079	.0073	.0043	.0070	.0067	.0063	.0059	.0052	.0050	.0041
19	24	26	44	27	28	30	32	36	40	46
	.0039	.0036	.0022	.0035	.0034	.0032	.0030	.0026	.0025	.0020
38	48	52	88	54	56	60	64	72	80	92
	.0019	.0018	.0011	.0018	.0017	.0016	.0015	.0013	.0012	.0010
76	96	104	176	108	112	120	128	144	160	184
	.0010	.0009	.0005	.0009	.0008	.0008	.0007	.0007	.0006	.0005