THE SIDNEY MACHINE TOOL COMPANY

SIDNEY

STANDARD PATTERN ENGINE LATHES

14 and 16-Inch

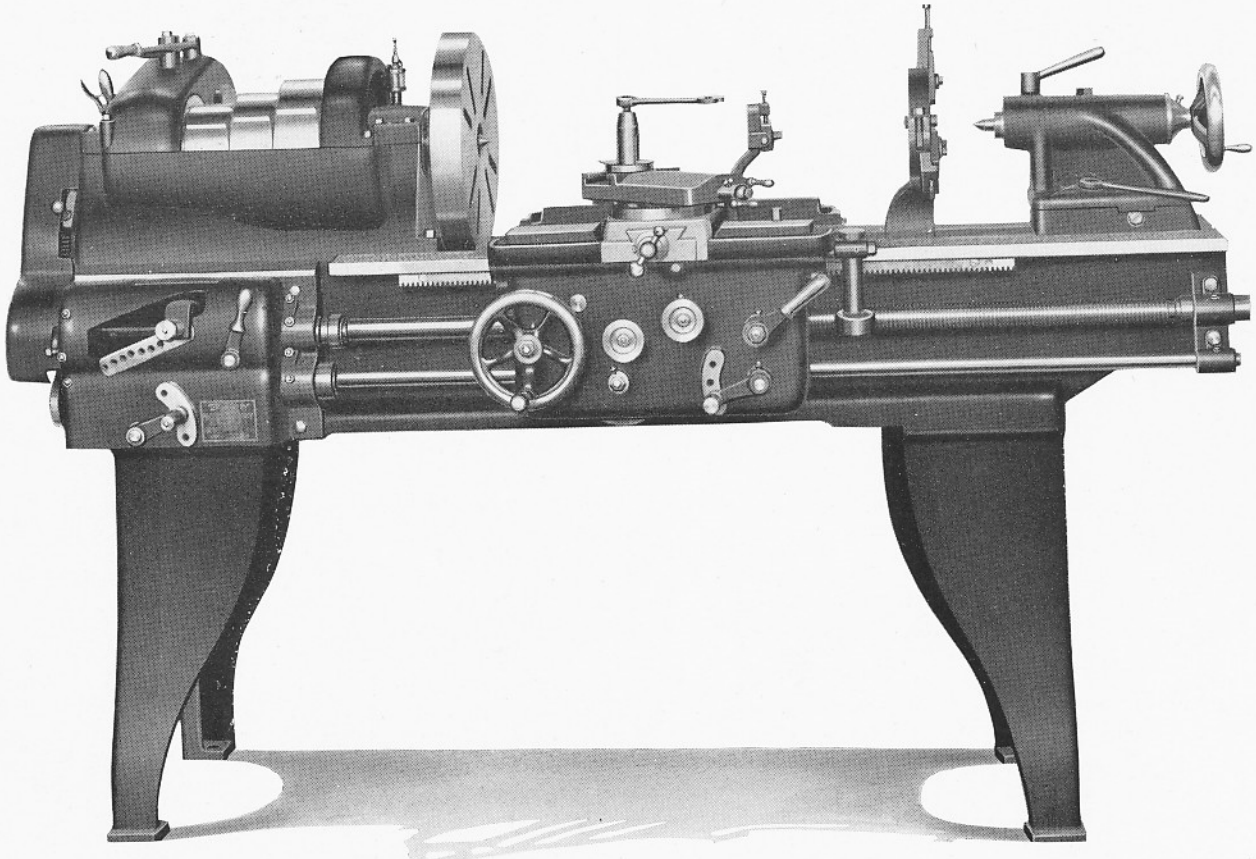
THE SIDNEY MACHINE TOOL COMPANY,
SIDNEY, OHIO.

General Description

14 and 16-Inch Standard Pattern Lathes

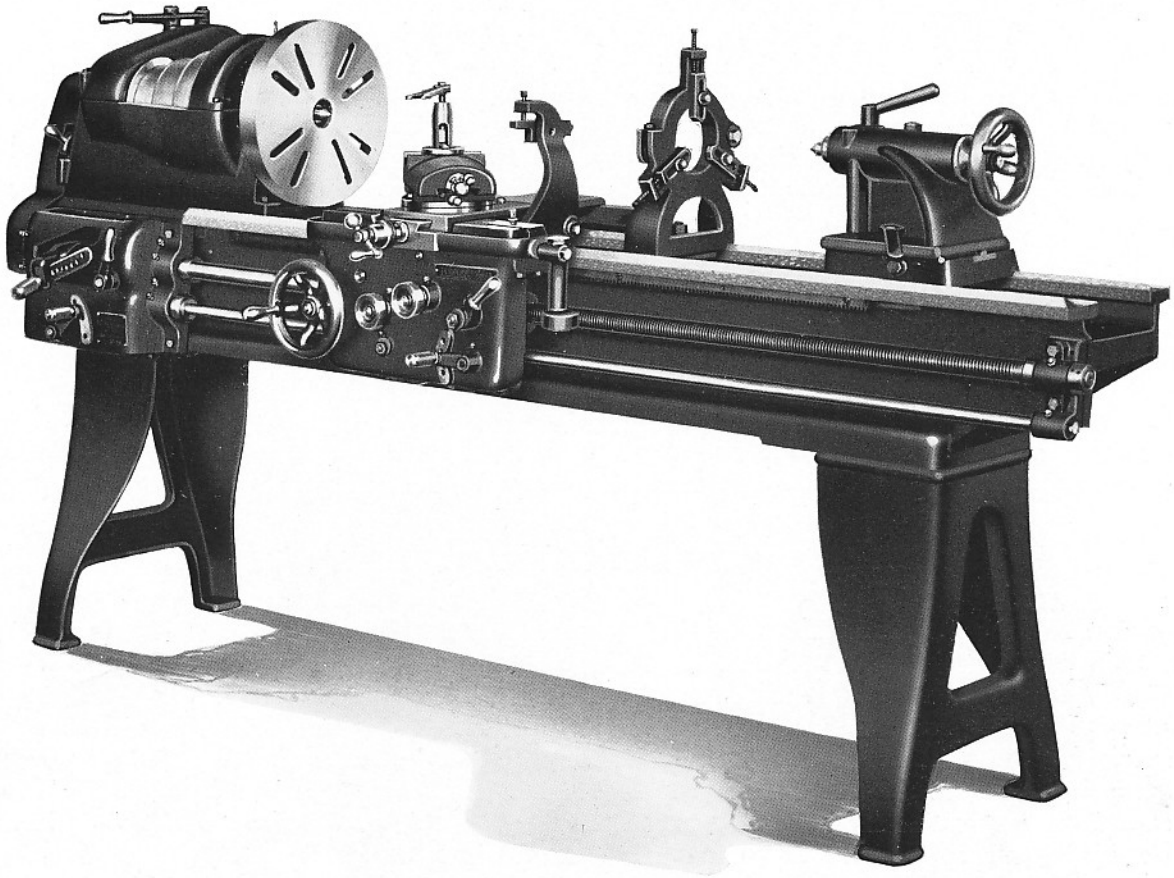
HEADSTOCK—The headstock is made with three-step cone and double back gear and the cone pulley has a nice running balance. The cone pulley is locked to the spindle by means of a spring plunger. The spindle is of high carbon steel and has a large hole bored its entire length. The bearings are ground to standard sizes and are scraped to a perfect seat in adjustable phosphor bronze boxes. A hardened and ground steel washer is provided to take up the end thrust. The back gear shaft is not reduced at the end to a small diameter, but is one size and is keyed to eccentric bushings fitted into the headstock. A positive locking plunger insures a correct position for the gear centers. The headstock casting is webbed above the center line of the spindle its entire length and this forms a very rigid brace for the boxes. The covers for the gearings are of neat design, being fitted with lever, within easy reach of the operator, for shifting the back gears, making the change instantly.

BED—The bed has semi-steel ways, and is unusually wide and deep to give the greatest rigidity under heavy cuts. The semi-steel ways of the bed are so much harder than the carriage, (which is made of the best grade of cast iron) that the wear comes on the carriage instead of on the bed, and although the carriage may wear, the alignment of the ways of the bed is not affected to any extent. The bed is strongly braced with cross box girders, and the legs are set well in at the ends to reduce the



The above cut shows the 14-inch Standard Pattern Lathe with Quick Change Gear Box.

span and to give more floor room when the machines are set end to end. The surface to which the gear box, lead screw and feed rod bearings is bolted, is provided with recesses insuring perfect alignment. Large V's are provided having 90 degrees included angle. The rear end of the bed is recessed sufficient to allow the tailstock to be overhung, and through specifications show the increased capacity between centers which this machine possesses. The steel rack is of high carbon steel and is made in one piece, heavy dowel pins and screws securing it to the bed.



The above cut shows the 16-inch Standard Pattern Lathe with Quick Change Gear Box.

CARRIAGE—The carriage has an oil trough around the front and rear V's which prevents the lubricant from running down over the apron. The bridge of the carriage is very heavy and substantial, yet it is not made so wide that it becomes necessary to overhang the tailstock arbor for short jobs. The carriage is also provided with T slots, making it convenient to bolt on special jobs. It is also fitted with chasing dial and brass oil wipers packed with felt, preventing grit from destroying the bearings of the carriage.

COMPOUND REST—The compound rest is an extremely substantial unit. Heavy swing bolts secure the swivel and lower slide. Taper gibs are placed in the top slide and lower slide, with adjusting screws for taking up the wear. The swivel has a large bearing surface on the bottom slide, hand scraped to a perfect bearing, insuring the greatest accuracy under the heaviest of cuts. The Compound Rest may be swiveled to any angle. The bottom slide is graduated for any angle up to 90 degrees. The top slide is so arranged that there is no over-hang.

APRON—The apron is of the double walled type, having a back plate supporting the studs, giving each stud a front and rear bearing. All gears in the Apron are of drop forge steel. All pinions are of steel and bronze bushings are provided where necessary. The Apron is fitted with friction cross feed and interlocking device preventing the feed rod and lead screw being engaged at the same time. Graduated micrometer dials are provided for the cross and angular feeds.

TAILSTOCK—The Tailstock is rigidly braced to insure rigidity, and is designed to clear the compound rest when set at 90 degree angle. It is clamped to the bed by heavy locking bolts. The spindle is of high grade steel, and can be rigidly clamped against vibration.

QUICK CHANGE GEAR BOX—The quick change gear box is attached to the bed to a recess provided for it, and covers a wide range of thread cutting and feeding. The gears are of steel with wide face, and are entirely shielded from grit and dirt. A swinging cover at the end of the bed affords easy access to the gear train from the spindle down to the gear box, and this single swinging cover is common to both the quick change gear and semi-quick change gear lathes.

THE 14 AND 16-INCH STANDARD PATTERN LATHES are built with the quick change gear box only. Lathes are built in 6, 8, 10, 12 and 14-foot bed lengths. Extra equipment such as taper attachment, full swing rest, turrets for bed, oil pan, pump and piping, etc., can be furnished.

REGULAR EQUIPMENT

Compound rest, two-speed friction pulley countershaft, large and small face plates, steady rest, follow rest, thread chasing dial, and all necessary wrenches.

DIMENSIONS OF 14 AND 16-INCH STANDARD PATTERN LATHE

	14-Inch	16-Inch
Actual swing over vees	14½ inches	16½ inches
Actual swing over carriage	9¼ inches	11¼ inches
Tailstock spindle travel	5½ inches	5½ inches
Tailstock diameter	1 13/16 inches	1 13/16 inches
Taper of centers	No. 3 Morse	No. 3 Morse
Front spindle bearing	2 11/16 x 4¼ inches	2 11/16 x 4¼ inches
Rear spindle bearing	1⅞ x 2¾ inches	1⅞ x 2¾ inches
Hole thru spindle	1¼ inches	1¼ inches
Diameter threads spindle nose	2¼ inches	2¼ inches
Number threads spindle nose	U. S. S. 6-thread	U. S. S. 6-thread
Counter cone pulley diameters	9, 7½, 6 inches	9, 7½, 6 inches
Width of driving belt	3 inches	3 inches
First back gear ratio	2.9 to 1	2.9 to 1
Second back gear ratio	12.7 to 1	12.7 to 1
Countershaft friction pulley	10 x 3½ inches	10 x 3½ inches
Countershaft speed	200 R. P. M.	200 R. P. M.
Countershaft speed of reverse	160 R. P. M.	160 R. P. M.
Threads and feed changes, quick change gear box	4.6 to 148	4.6 to 148
Range of threads, quick change gear box	2 to 64	2 to 64
Steady rest takes in	4½ inches	4½ inches
Size of tool	⅝ x 1¼ inches	⅝ x 1¼ inches
Lead screw thread per inch	4 Acme	4 Acme
Weight 6 foot bed	1750 pounds	1750 pounds
Weight additional 2 feet	100 pounds	100 pounds