S I D N E Y

Heavy Pattern Engine Lathes

THE Sidney Heavy Pattern Lathes are built in 15, 17, 19, 25, 27, 30 and 36-inch swings. All of these machines have an actual swing of two inches over the rated size listed. The tools are designed along very liberal lines, our intention being to make these lathes sufficiently rigid and accurate, and heavy enough for any heavy duty lathe turning or chucking operations that ordinarily come up in automobile shops, railroad and car shops, rapid production plants, and in fact, the Sidney Heavy Pattern Lathe will fit in any shop where speed, accuracy and rigidity are desired, combined with an extra heavy duty pulling power.

Not only is the swing over size on the Heavy Duty line, but every other unit on the lathe is rated in proportion. We have gears in the aprons on these lathes that are suitable for much heavier duty than the rated swing of the lathe would suggest. As an example, the width of the face of the gears in our 19-inch Heavy Pattern Lathe apron are as wide as are used in several very high grade 24-inch lathe aprons.

We positively guarantee that any Sidney Heavy Pattern Engine Lathe will perform, with the same close accuracy and the same rigidity, any lathe operation that it is possible to do on any engine lathe built.

The Heavy Pattern line is also fitted and arranged to take on any extra attachments, such as taper, turrets, draw-in, oil pan and pump, and in fact, we build many of our Heavy Pattern Lathes here with special heavy duty boring and turning fixtures which are required for some particular single purpose operation on rapid production work.

The illustrations on the following pages show you the complete Heavy Duty line in all sizes, and is accompanied by a complete description of each unit. This description is general, covering the entire line, and we ask our readers to note particularly where the big variation is between the 19 and 25-inch lathes. While the same principle of construction is involved, yet the practice is carried out on a very much larger and heavier scale on our 25-inch and larger machines than on the smaller swings.

One of the principal features we call to the reader's attention in this respect, is the type of apron used on our 25, 27, 30 and 36-inch lathes, this being the type of construction with the removable front plate.

General Description
Cone Head Heavy Pattern Lathes

HEADSTOCK—The headstock is of the closed type pattern, offset one inch off centers, which is especially desirable for heavy duty work. It is also bridged from front to rear with a solid webb through the front and back, practically enclosing the cone, tying the bearings together, and affording additional strength. The spindle, which is on each size lathe unusually large, is turned from 60-point carbon crucible steel forging, and ground to the finished size. A hole is bored through the entire length of the spindle of ample size to take all ordinary bar and chucking apparatus. The center and bush are finished by grinding, and all spindles are rigidly inspected. The cone is attached to the spindle by means of a spring plunger. The spindle bearings are lined with an 80, 10 and 10 phospher bronze com-

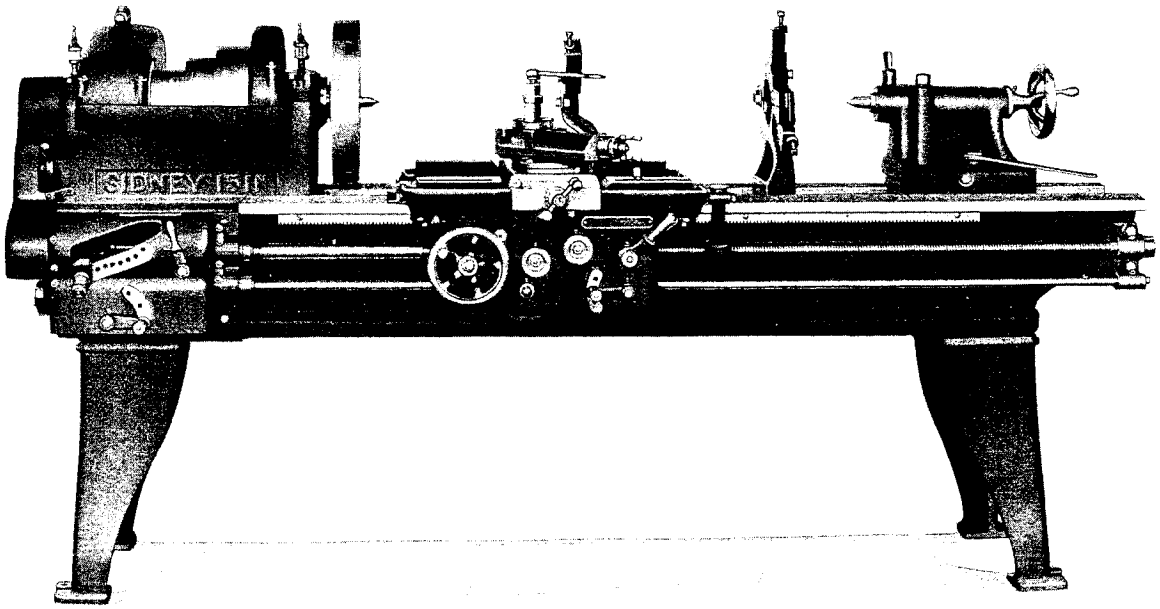


Fig. 8. 15" x 8' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

position, are hand scraped to a perfect seat, self-oiling, and insured for perfect wear. A steel and bronze thrust collar is provided for taking up the end thrust, and the spindle, which operates against the shoulder of the headstock.

BED—The bed is of unusual depth and made with extra heavy walls, and with heavy doubled walled cross girts of the box section type, which are spaced two feet apart, forming a very rigid construction. The ways of the bed are cast with a steel mixture of 33⅓%, thus the wear which takes place will be largely confined to the carriage, where it will not interfere with the accuracy of alignment. The metal where the headstock bolts pass through is much heavier than usual, eliminating the swing and insuring perfect alignment under the heaviest cuts.

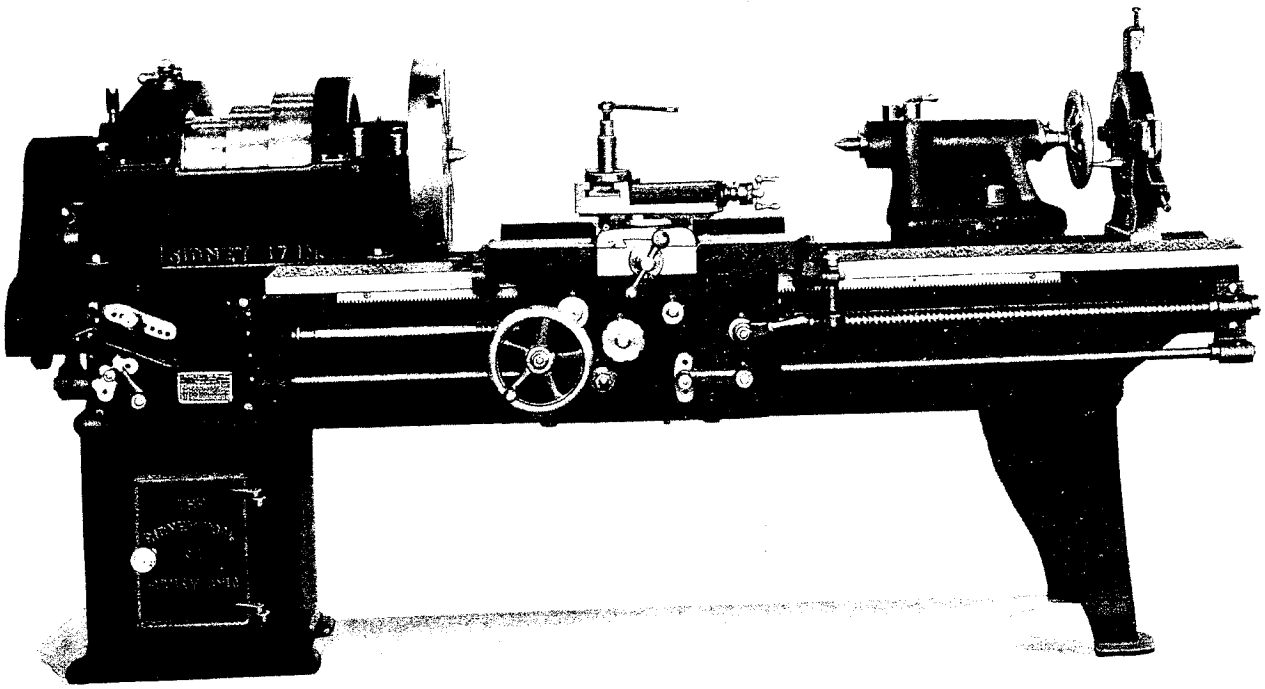


Fig. 9. 17" x 8' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

The method of supporting the bed on the legs also is shown much care, so as to secure the greatest possible rigidity. The legs, rather than being set at the extreme end of the bed, are set in from the ends of the bed supported with a cantilever form of construction. This arrangement removes unnecessary weight from the ends of the bed and proves a superior method of support on account of the reduction in the span between the legs. The rack, which is cut from high carbon steel, is bolted, keyed and pinned to the bed. The ways are extra wide, 90 degree angular, and give excellent support to the carriage and tailstock.

APRON – The aprons on all Sidney Lathes are of the double walled type, providing a back bearing for all gear studs. These aprons are pinned, grooved and bolted to the carriage with feed rod support on both ends.

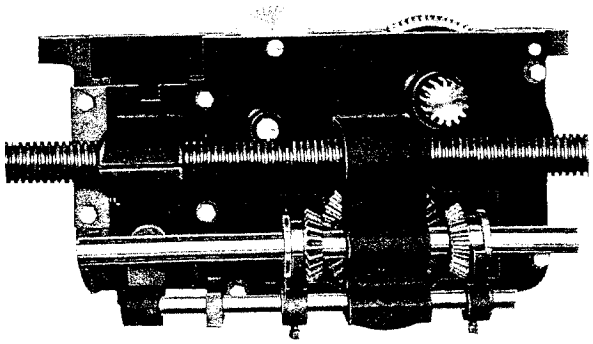


Fig. 10. Apron used on 15, 17 and 19-inch Lathes.

All gears are of steel, either turned from high carbon bar stock or from drop forged steel blanks, and the face of these gears are much wider than ordinarily found in lathes of this rating. All studs are hardened and ground and all bushings are of phospher bronze.

On the 25, 27, 30 and 36-inch Lathes, the apron is of the removable front plate type, as

shown in the accompanying cut, which, with the removal of four screws, gives the operator immediate access to the interior of the apron should any adjustments be necessary. This eliminates on these heavy lathes the tearing of the apron out of alignment with the carriage in case of adjustment. The apron on the 15, 17 and 19-inch lathes, is not supplied with this removable front plate feature, but in every other way is designed and constructed the same as our very heaviest lathes.

COMPOUND REST—This unit on our Heavy Duty Lathes has had much care in design. The Compound Rest is very rigid, and the swivel, being made completely cir-

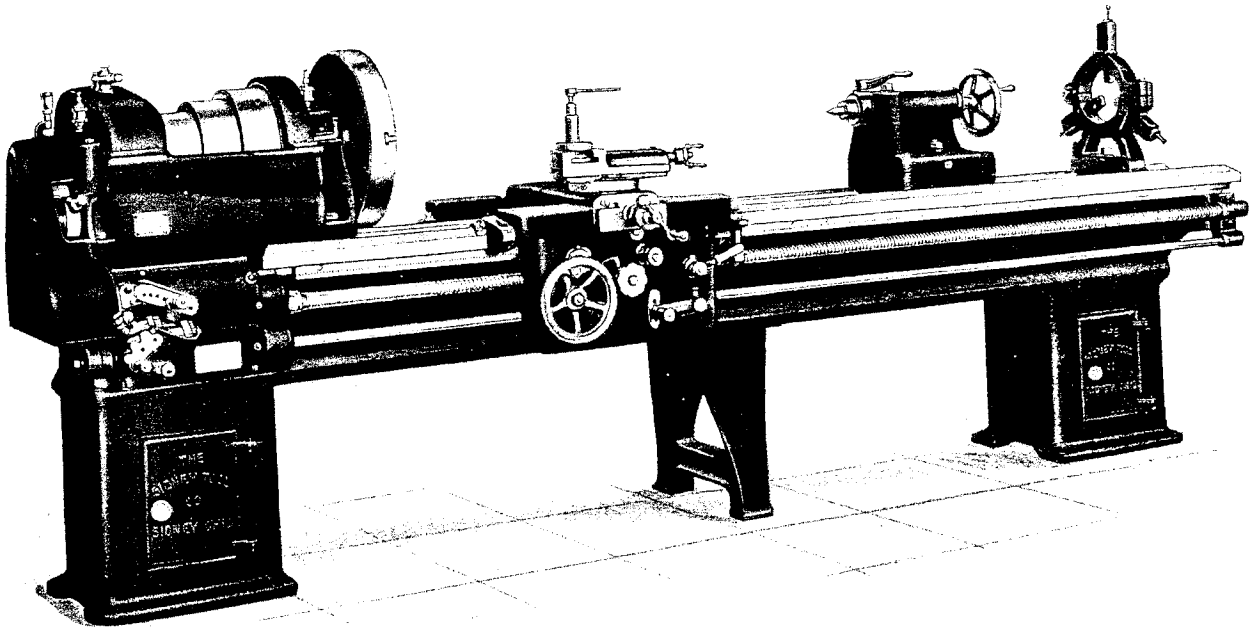


Fig. 11. 19" x 12' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

cular, is clamped to the cross slides by means of heavy bolts. Tapered gibs the full length, having end screw adjustment, are provided on both the cross slide and the Compound Rest slides, being placed on the negative side where they will not receive the thrust of the tool, and this feature gives perfect alignment at all times. The swivel is graduated in degrees, and with the compound rest screw graduated and the cross feed screw graduated, nothing is left undone to present the best finished article possible. The lead screw is turned from 55-point carbon Cumberland turned and ground shafting, which is cut and ground after the pattern of the Brown & Sharpe master screw.

TAILSTOCK—On the Heavy Pattern Lathes, the tailstocks are exceptionally massive, having extra long bearings on the ways. The design is of the improved rigid split type with a heavy positive clamped bolt which securely clamps the spindle at any position without

affecting the alignment. The base is heavily ribbed with cross girts, and the joint between the base and top is hand scraped to a perfect seat. The spindle is kept in alignment with the headstock spindle by means of a wide tongue on the base which feeds in a groove at the bottom of the tailstock top. Provision for set-over is arranged with the adjustment of two screws. The tailstocks of the 25-inch and larger sizes are fitted with a rack gear crank for moving them along the bed with the least possible trouble.

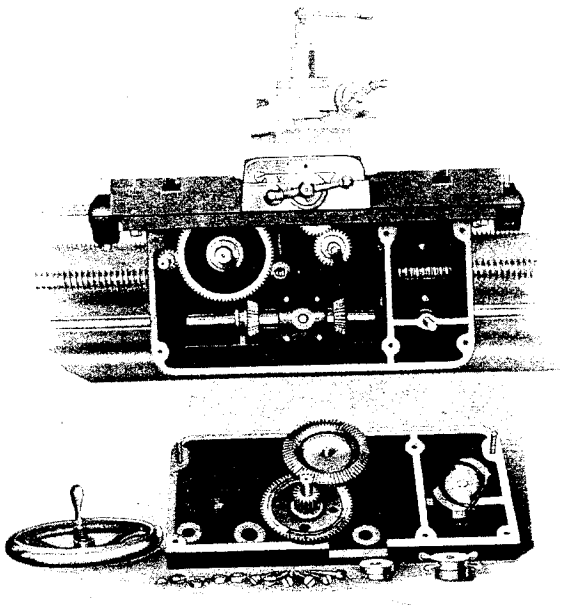


Fig. 12. Apron with removable front plate, used on 25, 27, 30 and 36-inch Engine Lathes.

QUICK CHANGE GEAR BOX—This forms a complete unit of its own, and is mounted on the front end of the machine, securely fastened by means of tongue and groove and heavy bolts, insuring at all times the most positive alignment. The operating levers are convenient to the operator and dial plates are located in plain sight so that all changes are made instantaneously. A wide range of threads from 2 to 46 gives complete speeds and ranges for cutting all manner of threads. The gear box is equipped with gears which are all cut from high carbon steel. The face of these gears is unusually wide, and the gear box presents exceptional pulling power. The compact construction of the gear box keeps it entirely out of the way of the operator, but it is still easily accessible for repairs should they be required.

Sidney Service Satisfies

On page 36, we give you our guarantee on workmanship and material put into Sidney Lathes. In that guarantee, we neglected to mention a few important points, such as follow:

All Sidney dealers are authorized to sell any purchaser Sidney Lathes on 30 days trial, customer to be privileged to return lathe if not mechanically satisfactory.

We will also furnish to any responsible concern any size Sidney Lathe for purpose of running comparative tests with competitive makes, our furnishing this lathe not in any way binding the customer to purchase same.

We guarantee workmanship and material not for one year, but for life of machine, and any fault will be taken care of wholly at our expense.

This should convince the most skeptical buyer of the merits of Sidney Lathes.

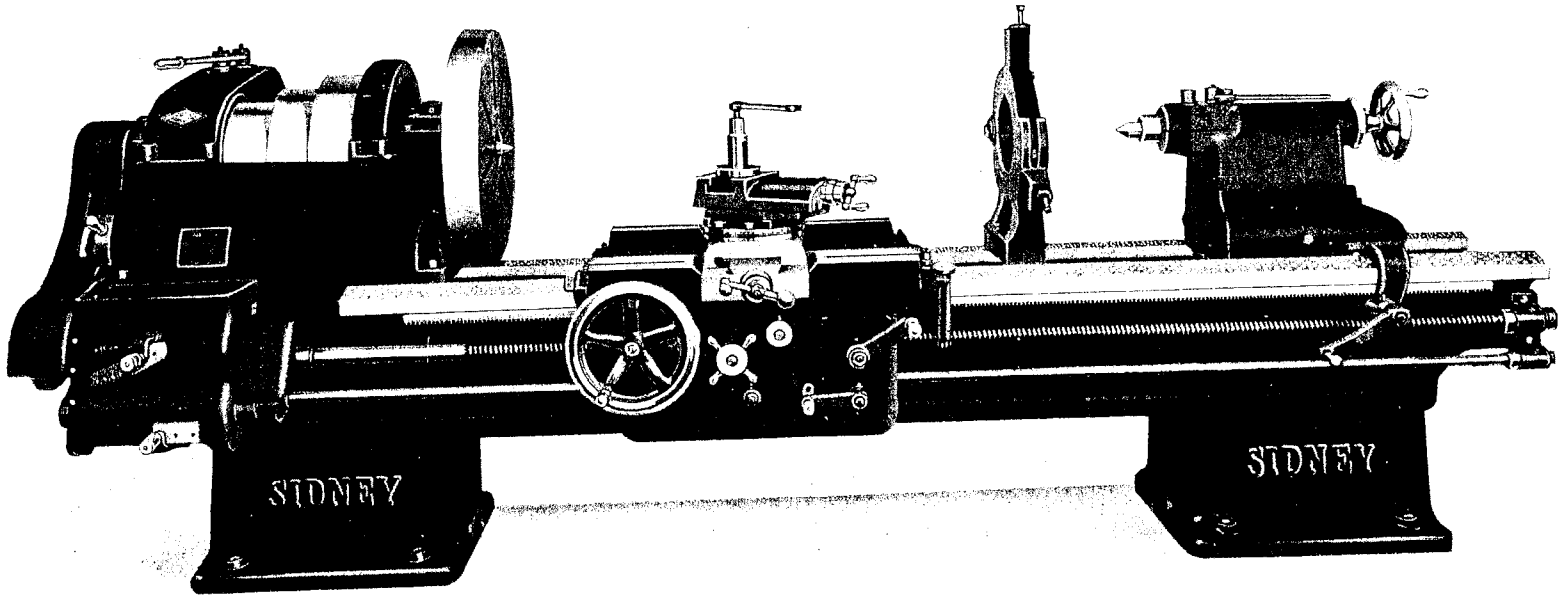


Fig. 13. 25" x 12' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

The Sidney 25-inch Heavy Pattern Lathe has proven a great favorite among the larger mills. This lathe is designed with the proportions so large for a 25-inch lathe that the machines are being worked in many plants which is ordinarily done on a 28 or 30-inch machine. The removable front plate apron is an especially attractive feature on this lathe, which allows easy access to all working parts of the apron in case of any needed adjustment. The 25-inch machine, having an actual swing of 27 inches, will always fit in any place where the operation requires a lathe ranging in swing from 24 to 30 inches. The 25-inch Heavy Pattern Lathe is built with bed lengths up to and including thirty feet, and all beds over that length are of the jointed type with one joint. This lathe is highly recommended for steel mill, rolling mill, and all extra heavy duty work.

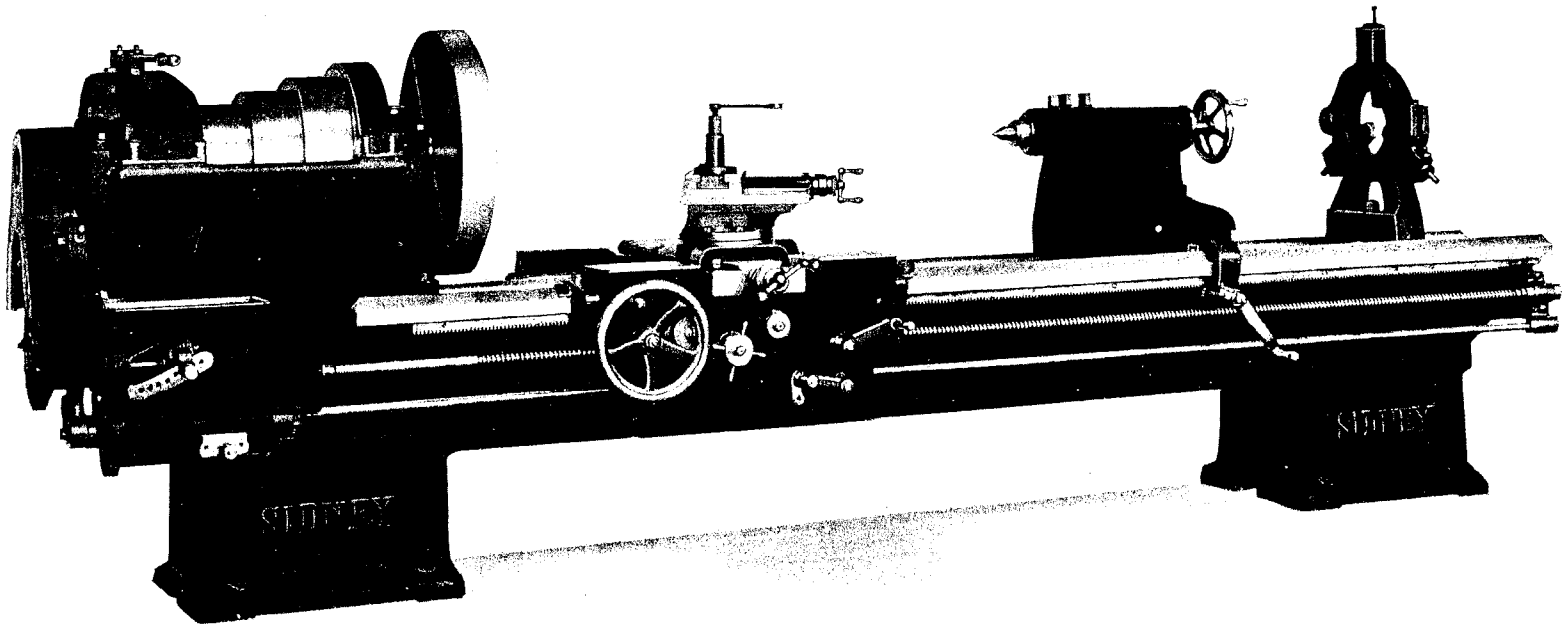


Fig. 14. 27" x 14' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

The 27-inch Sidney Heavy Pattern Lathe is also what might be called over-size in its proportions, as compared to the average 26 or 28-inch machine. The same bed is used as on the 25-inch, but all other units are built heavier and greatly strengthened, so as to retain the same rigidity in work up to its swinging capacity. With a swing of 29 inches, we find the Sidney 27-inch Heavy Pattern machine operating in a great many of the larger plants throughout the country on work that has formerly been done on a 30-inch lathe. The gears throughout the entire machine are extra wide, presenting very excessive pulling power, and it is very rare that any gear trouble develops in these tools. The 27-inch lathe is built with one piece beds up to thirty feet, after which, the beds are jointed.

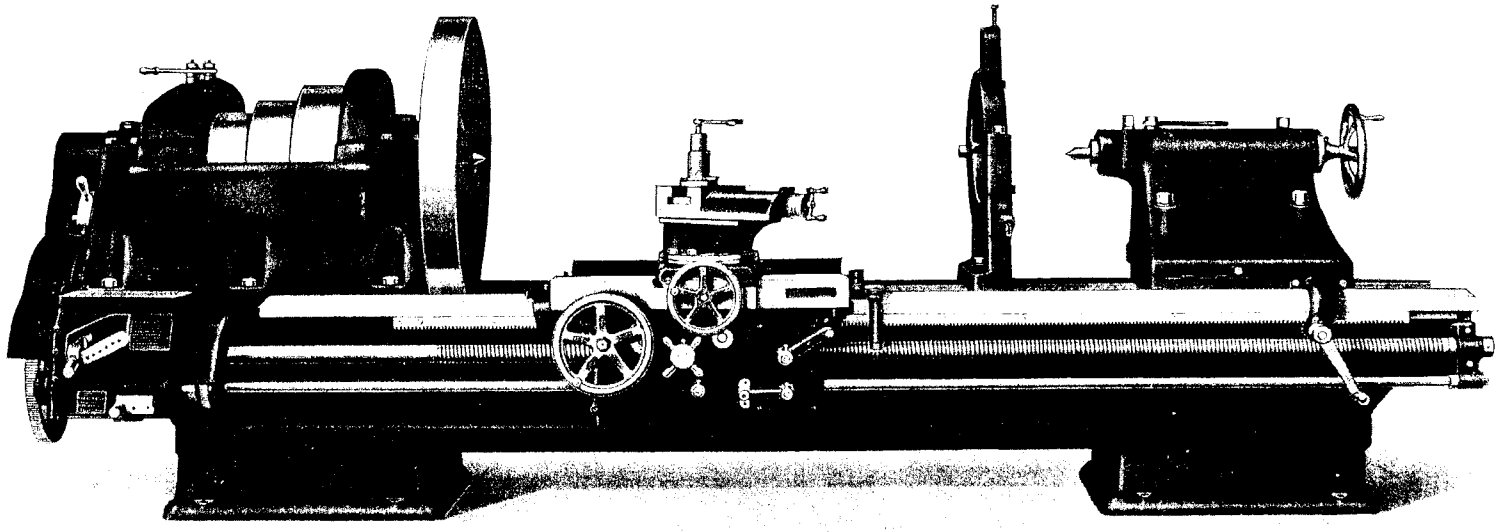


Fig. 15. 30" x 14' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

The Sidney 30-inch Heavy Pattern Lathe, which is shown above, has proven a great favorite on rolling mill work and on various jobs where excessive strength is required, and a long bed lathe needed for large swing work. The apron, while of the same type as on the 25-inch with a removable front plate, is much stronger, and all gears throughout the entire machine are so proportioned that we could almost guarantee that you would never break them. The 30-inch lathe is built with bed lengths up to thirty feet in a one piece bed, but any length bed may be had over that, which would be of the single jointed type. We especially recommend the 30-inch lathe for any class of work where the operation requires a 30-inch swing. The actual swing of the lathe is 32 inches over the vees, and we guarantee it to perform the same functions that any 32-inch lathe built will perform. The walls of the bed on this lathe are 1¼ inches thick and braced with double cross girts every two feet the entire length of the bed.

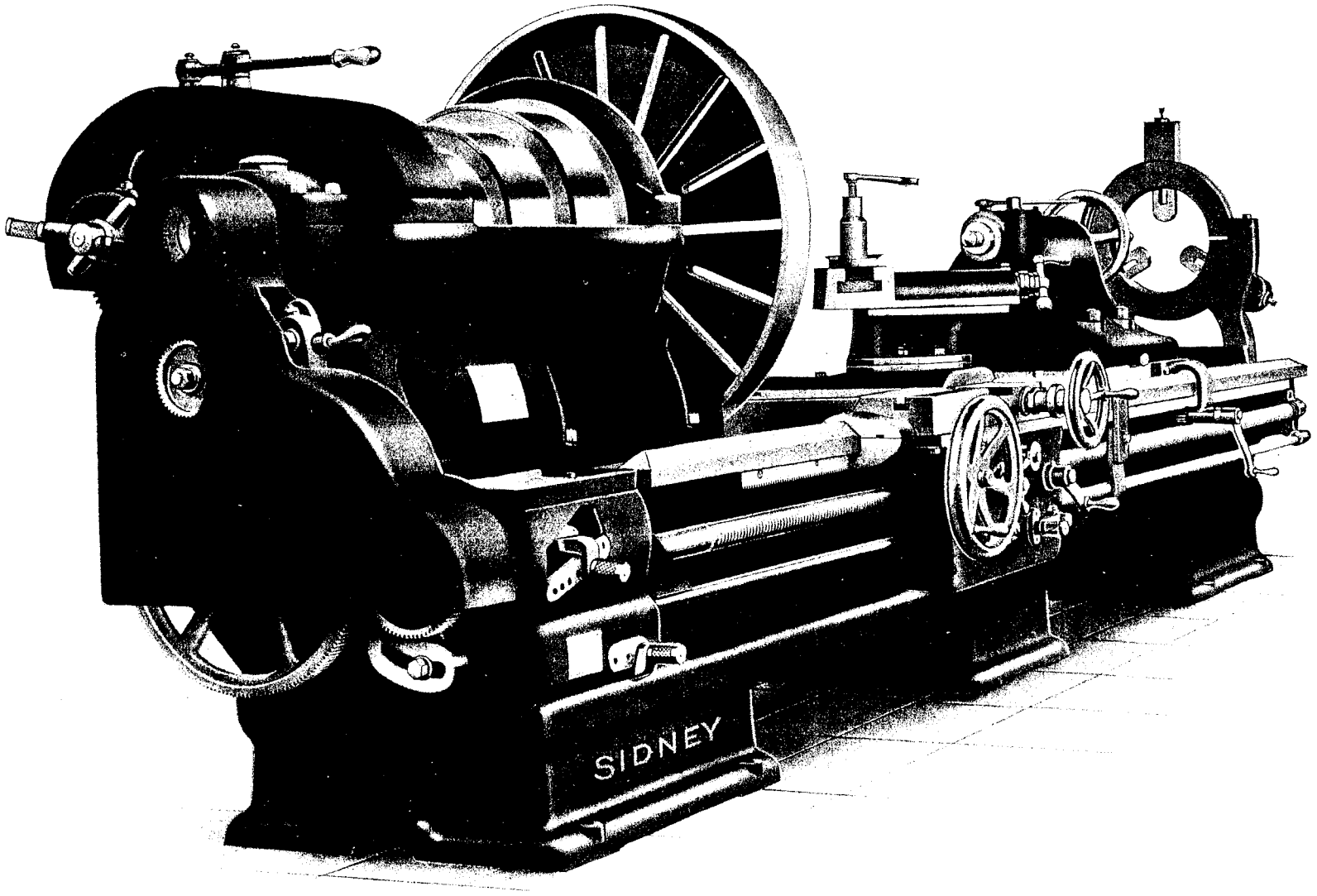


Fig. 16. 36" x 16' Sidney Heavy Pattern Quick Change Gear Engine Lathe.

This view of the 36-inch Lathe renders it unnecessary to add anything concerning the adaptability of this machine to heavy duty work.

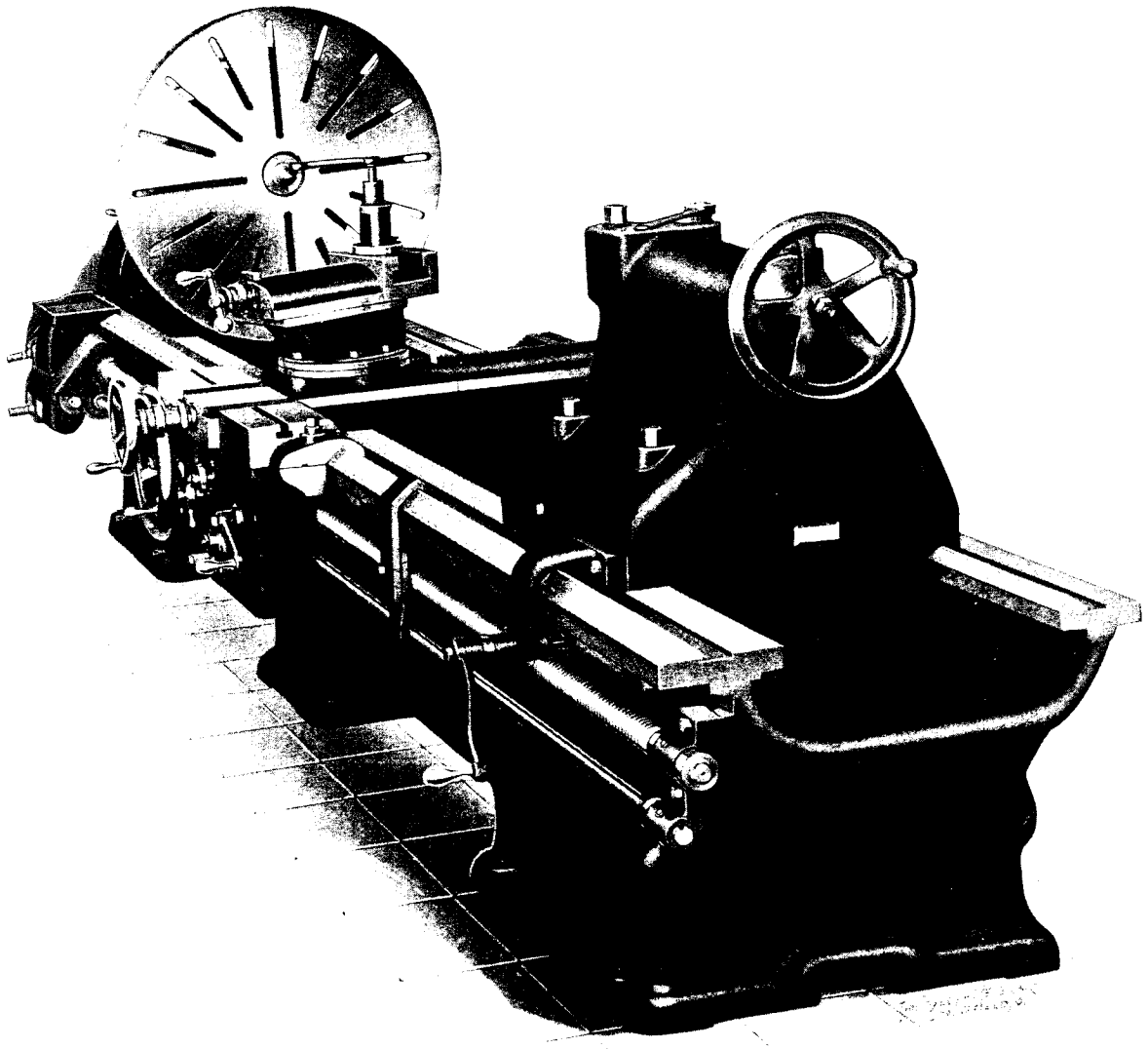
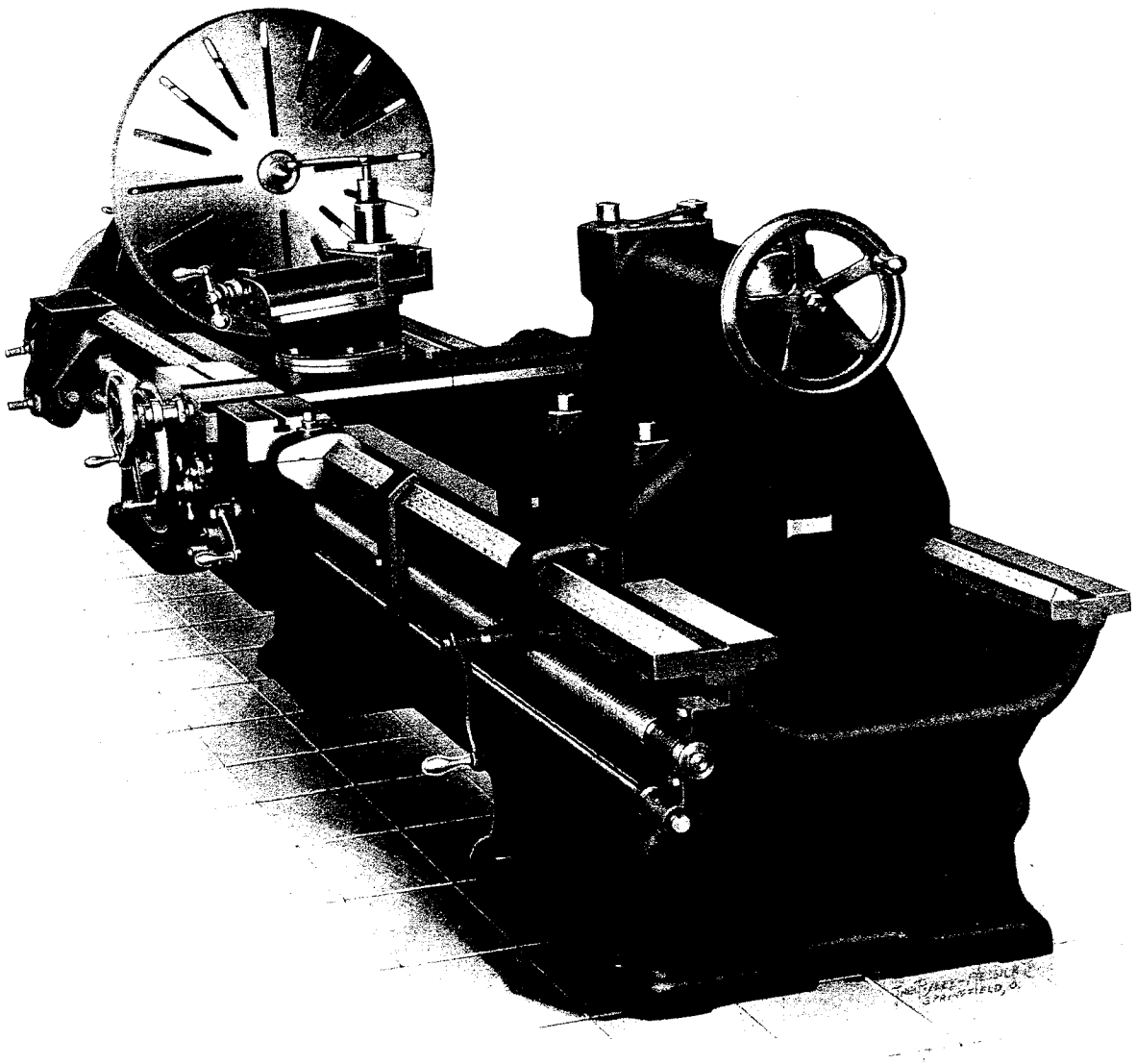


Fig. 17. End View 36" Lathe. Note wide vees, extra wide bearings for tailstock, carriage and headstock.

The above view, showing the 36" x 16' Lathe, gives the reader some insight on the extra heavy bed, tailstock and carriage used on this machine. Note the wide bearings which the extra wide vees provide for the tailstock. The Sidney 36-inch Heavy Pattern Lathe is beyond a question the heaviest, most substantial and highest powered lathe ever offered at a moderate price. The 16 foot bed shows the center leg which is used on all beds over 14 feet in length, with one additional center leg to each six feet in bed length, providing a very substantial foundation, and exceptionally rigid construction.



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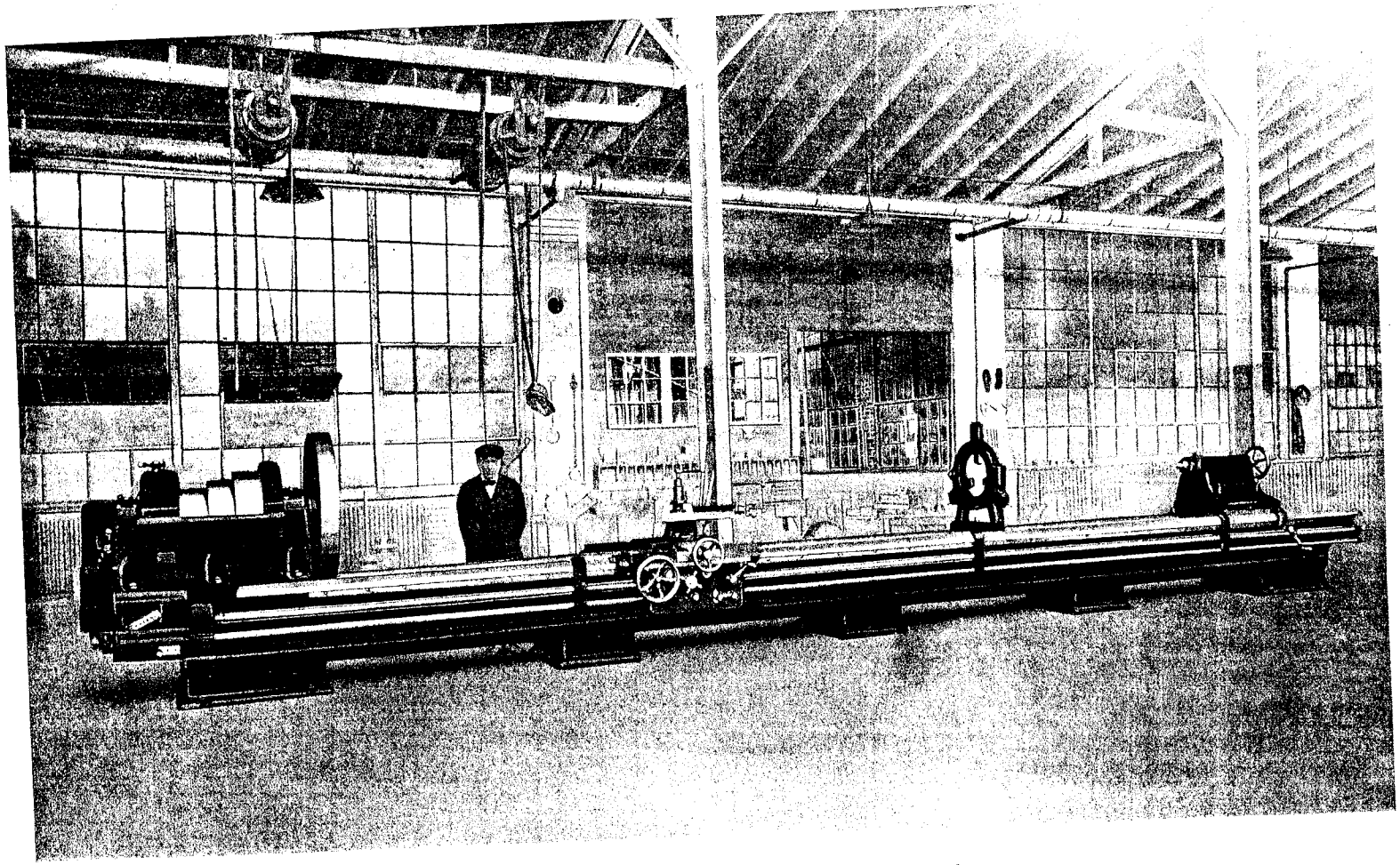

Fig. 18. 30" x 30' Sidney Heavy Pattern Engine Lathe.

The above view shows the 30" x 30' Sidney Heavy Pattern Lathe built for The St. Croix Paper Company of Woodland, Maine, one of the largest paper mills in the New England States. This machine is built with 30 ft. bed casting in one piece. This casting alone weighing more than eight tons. The lathe is in operation and has been for some months, on extra heavy roll turning, and has given the most excellent satisfaction. Total weight of this lathe 21,000 lbs.

The SIDNEY MACHINE TOOL CO.

Specifications—Heavy Pattern Lathes

	15"	17"	19"	25"	27"	30"	36"
HEADSTOCK, Base length							
Swing over bed	17 in.	19 in.	21 in.	27 in.	29 in.	32 in.	36½ in.
Swing over carriage	10½ in.	11 in.	13 in.	19 in.	21 in.	23 in.	26 in.
Swing over taper attachment yoke							
Hole through spindle	1 9/16 in.	1 9/16 in.	1 9/16 in.	2 3/16 in.	2 3/16 in.	2 3/16 in.	2 3/16 in.
Front spindle bearing	3x4½ in.	3½x5½ in.	3½x5½ in.	4¼x6¾ in.	4¼x6¾ in.	5⅜x8 in.	5⅜x8 in.
Rear spindle bearing	2¼x3½ in.	2½x4⅛ in.	2½x4⅛ in.	3¼x4⅝ in.	3¼x4⅝ in.	4¼x6¾ in.	4¼x6¾ in.
Taper of Centers	No. 4 Morse	No. 4 Morse	No. 4 Morse	No. 5 Morse	No. 5 Morse	No. 5 Morse	No. 5 Morse
Spindle nose diameter and threads per inch	2¾ in.–6	3 in.–5	3 in.–5	3¾ in.–4	3¾ in.–4	4¾ in.–4	4¾ in.–4
Back gear ratio—double	4½:1 and 13:1	3¼:1 and 10:1	3¼:1 and 10:1	4¼:1 and 11½:1	4¼:1 and 11½:1	5¼:1 and 12½:1	5½:1 and 12½:1
LEAD SCREW, Diameter and threads per inch	1 7/16 in.–4	1 7/16 in.–2	1 7/16 in.–2	1 11/16 in.–2	1 11/16 in.–2	1 15/16 in.–2	1 15/16 in.–2
Range of threads per inch	3 to 46	3 to 46	3 to 46	2 to 46	2 to 46	1 to 46	1 to 46
Range of feeds per inch	.006 to .25	.010 to .158	.010 to .158	.005 to .220	.005 to .220	.005 to .220	.005 to .220
Number threads and feed changes	32	32	32	32	32	32	32
TAILSTOCK, Base length		14 in.	14 in.	18 in.	18 in.	25 in.	25 in.
Tailstock spindle diameter	2 in.	2⅜ in.	2⅜ in.	3 in.	3 in.	3½ in.	3½ in.
Tailstock spindle traverse and setover	6–⅞ in.	8–⅞ in.	8–⅞ in.	10½–1⅛ in.	10½–1⅛ in.	15–1⅜ in.	15–1⅜ in.
Steady rest, regular capacity	4 in.	6½ in.	6½ in.	8 in.	8 in.	14 in.	14 in.
CARRIAGE, Length	27 in.	29½ in.	29½ in.	35 in.	35 in.	39½ in.	39½ in.
Carriage Bridge width	7¾ in.	8 in.	8 in.	10 in.	10 in.	12½ in.	12½ in.
Compound rest top slide travel	4 in.	4½ in.	4½ in.	5 in.	5 in.	9 in.	9 in.
Countershaft friction pulley size	12x3½ in.	14x4½ in.	14x4½ in.	16x5 in.	16x5 in.	20x6½ in.	20x6½ in.
Countershaft speed	260 RPM	240 RPM	240 RPM	220 RPM	220 RPM	200 RPM	190 RPM
Size of lathe tool	¾x1½ in.	¾x1½ in.	¾x1½ in.	⅞x1¾ in.	⅞x1¾ in.	1x2 in.	1x2 in.
Distance spindle center to floor	43½ in.	43 in.	44 in.	42 in.	42 in.	41 in.	44 in.
Head and countershaft conestep diameter	6, 8, 10 in.	8, 10, 12 in.	8, 10, 12 in.	11, 13½, 16 in.	11, 13½, 16 in.	12, 15½, 19 in.	12, 15½, 19 in.
Weight, 6-ft. bed	2550 lbs.	3550 lbs.	3650 lbs.				
Weight, 10-ft. bed				7000 lbs.	7500 lbs.		
Weight, 12-ft. bed						11200 lbs.	12000 lbs.
Weight, each 2 additional feet	200 lbs.	400 lbs.	400 lbs.	500 lbs.	500 lbs.	600 lbs.	600 lbs.