

# SOUTH BEND LATHES



CATALOG 100A



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The South Bend Lathe Works, whose policy is one of continuous improvement, reserves the right to change specifications, design, or prices without incurring obligation.



## New Model Series "S" South Bend Precision Lathes

The South Bend Lathe Works was established in 1906, and for 34 years has manufactured South Bend Back-Geared Screw Cutting Precision Lathes exclusively.

The new Series "S" Lathes, shown in this catalog, are designed and built to meet the demands of modern industry. Spindle speeds have been increased for maximum efficiency when using high speed tungsten carbide cutting tools. Smooth vibration-free operation is achieved by using a back-geared headstock with direct belt drive to the spindle for high speeds. Superfinished headstock spindle bearing surfaces and large, integral type bearings assure rigidity and permanent accuracy.

The workmanship and materials entering into the construction of South Bend Lathes are the best it is possible to obtain. Special machinery, jigs and fixtures are used to assure precision accuracy and interchangeability of parts. Each lathe must pass rigid inspection tests and must actually machine work with extreme precision before shipment from our factory.



### DELIVERIES ON SOUTH BEND LATHES

Due to the National Defense Program, machine tools are being allotted to those industries that need them most under a priority system requested by the Office of Production Management, Washington, D. C. When you are in need of a South Bend Lathe keep in touch with our South Bend Lathe dealer in your territory. We will keep them posted on the latest information available covering priorities. Conditions are changing from day to day so we can not set any definite rules now.

SOUTH BEND LATHE WORKS,  
South Bend, Indiana.

July 14, 1941.

INDEX

16"  
LATHES

14½"  
LATHES

13"  
LATHES

10" 11-16"  
COLLET  
LATHES

10" 1-INCH  
COLLET  
LATHES

9" W'SHOP  
LATHES

16-24"  
LATHES

ATTACH-  
MENTS

CHUCKS,  
TOOLS

METRIC  
LATHES  
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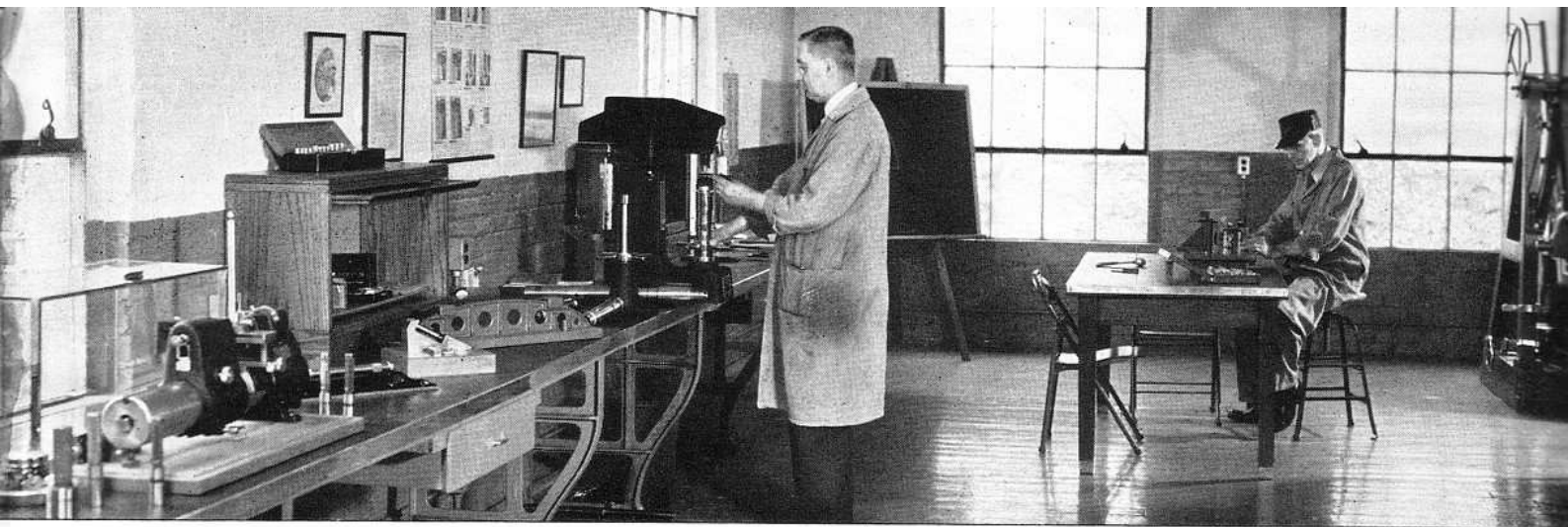


Fig. 1. Testing Laboratory and Research Department for Maintaining the Uniformly High Standards of Workmanship and Materials for South Bend Lathes

## Series "S" South Bend Lathes

### Modern

The Series "S" South Bend Lathe is a modern machine tool having many recently developed improvements and refinements. These include a new headstock with integral bearings and superfinished spindle, large diameter easy reading graduated collars, and an improved multiple disc friction feed clutch in the apron which will not stick or slip under heavy cuts. Ease of operation, secured by convenient arrangement of controls, reduces operator fatigue and assures maximum production.

### Accuracy

Throughout the process of manufacture, parts and units for South Bend Lathes are frequently inspected and tested. The headstock, tailstock, and carriage are aligned with instruments that will detect an error of one ten-thousandth of an inch. The lead screw thread is tested for accuracy of lead with optical measuring equipment which is guaranteed by the manufacturer to be accurate within .00005" in 30 inches. The lathe spindle and the lead screw are also tested for cam action.

In addition to hundreds of tests made on the various parts and units of the lathe during manufacture and assembly, the finished lathe is tested under power. The final tests are made with precision instruments, special test bars and fixtures, and also by actual cutting tests. Each lathe must machine work to extremely close tolerances before it is approved for shipment from our factory.

### Durability

South Bend Lathes are designed and built to give years of satisfactory service. Large bearing surfaces and excellent facilities for oiling reduce wear to a minimum. The lathe bed is made of hard close-grained semi-steel having long wearing qualities. The headstock spindle is of heat treated alloy steel with bearing surfaces having a hardness of 56 to 61 Rockwell C. Other important parts are made of similarly high quality materials selected for long service. Given the proper care, a South Bend Lathe will retain its accuracy indefinitely.

Fig. 2. Below—Checking the Accuracy of a Fixture with Precision Gauge Blocks Accurate to Five-Millionths of an Inch. Extreme Accuracy necessary for perfect interchangeability of parts is assured by frequent testing of jigs and fixtures

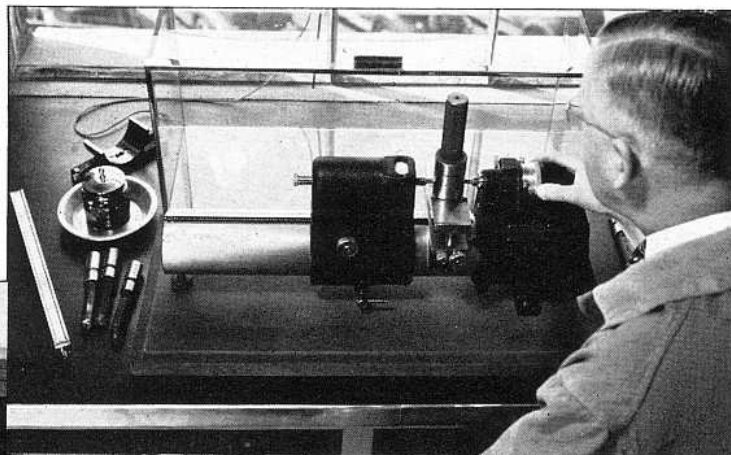
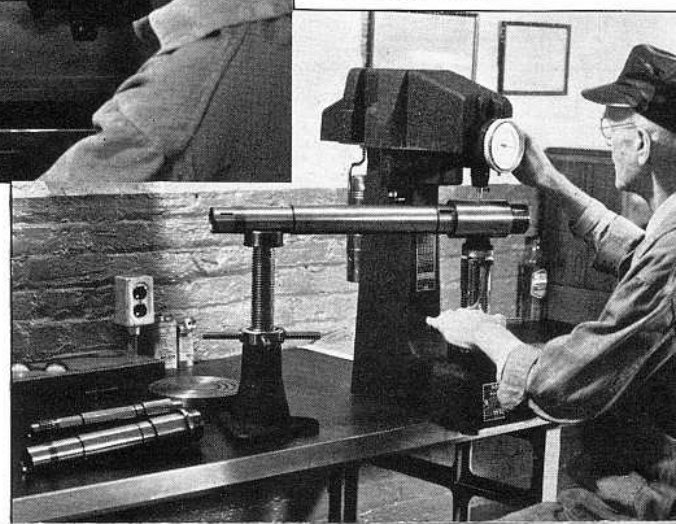


Fig. 3. Left—Checking the Diameter of a Plug Gauge with a Super Micrometer Having Vernier Scale Reading in Tenths of a Thousandth of an Inch

Fig. 4. Below—Testing Hardness of a Carburezied Headstock Spindle Bearing Surface





# Series "S" South Bend Lathes (Continued)

## Spindle Speeds

All South Bend Lathes have back-gear headstocks, providing an unusually wide range of spindle speeds. Standard speeds on some models range from 50 to 1357 R.P.M. Special drive equipment for higher spindle speeds is supplied to order. Super-finished spindle bearing surfaces and an efficient capillary oiling system assure satisfactory operation at the maximum spindle speed.

Smooth vibration-free operation at high speed is achieved in South Bend Lathes by using a direct belt drive to the carefully balanced cone pulley and spindle assembly. The belt drive is especially desirable for high speed precision turning and boring operations with carbide tipped and diamond tipped tools. When slow spindle speeds are required for machining large diameters, a wrenchless bull gear lock permits engaging the back-gears quickly.

## Power

South Bend Lathes have ample power for the type of work for which they are intended. The back-gear headstock provides the slow spindle speeds and power required for taking heavy cuts and for machining large diameter work. The headstock spindle bearings and the power transmission equipment are highly efficient so that a large percentage of the motor horsepower is transmitted to the work as useful energy for cutting.

## Rigidity

The well-balanced design of South Bend Lathes assures maximum rigidity. The integral type headstock spindle bearings permit using a large diameter spindle, providing an extremely rigid support for chuck work. Smooth operation is further assured by

the use of generous bearing surfaces throughout the construction of the lathe and by the direct belt drive to the spindle. These features reduce the possibility of chatter and assure a smooth finish on forming, cutting-off, and other difficult operations.

## Ease of Operation

Large diameter hand wheels, clear-cut easy reading graduations, and a convenient arrangement of controls contribute to the ease of operation of South Bend Lathes. This reduces operator fatigue, increases efficiency, and prevents mistakes, so that maximum production can be maintained on either tool room or manufacturing operations.

## Reasonable in Price

Quantity production of a standardized design makes it possible for us to manufacture a lathe of unquestionable quality at a comparatively low cost. Parts for South Bend Lathes are economically produced in our modern factory equipped with efficient production machinery. Hundreds of special machines, jigs, fixtures, and gauges are used to assure perfect interchangeability of parts. This simplifies assembly, lowers the cost of manufacture, and insures accuracy. South Bend Lathes are reasonable in price because the savings effected by quantity production are passed on to the consumer.

Fig. 5. Below—Testing Gears for Accuracy of Tooth Form, Pitch Diameter, and Concentricity

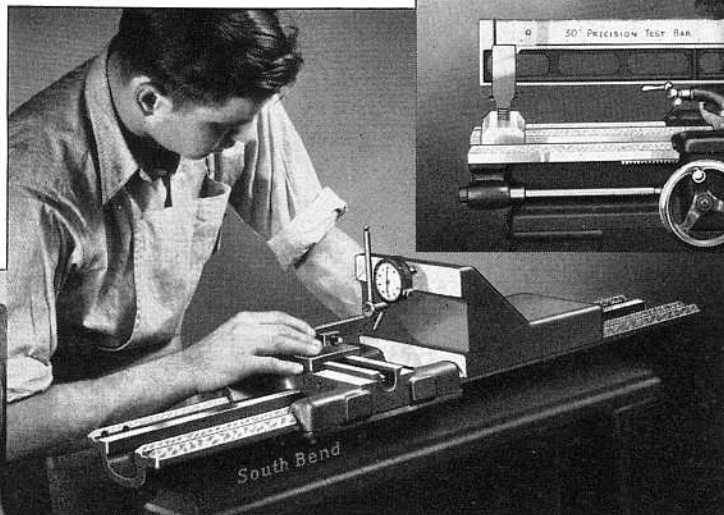


Fig. 6. Above—Testing the Saddle Cross Slide Dovetail for Squareness with V-ways of the Lathe Bed

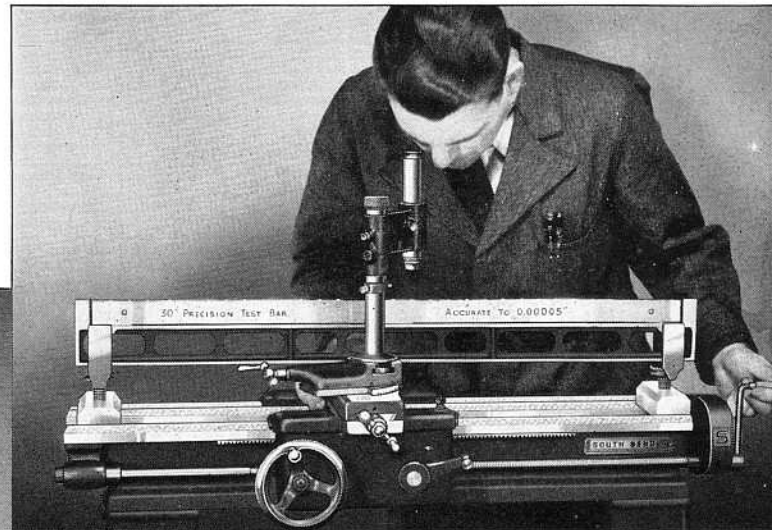


Fig. 7. Above—Testing a Lead Screw for Accuracy of Lead with Precision Optical Measuring Equipment

Each South Bend Lathe must pass hundreds of rigid inspection tests in addition to those illustrated in this catalog.





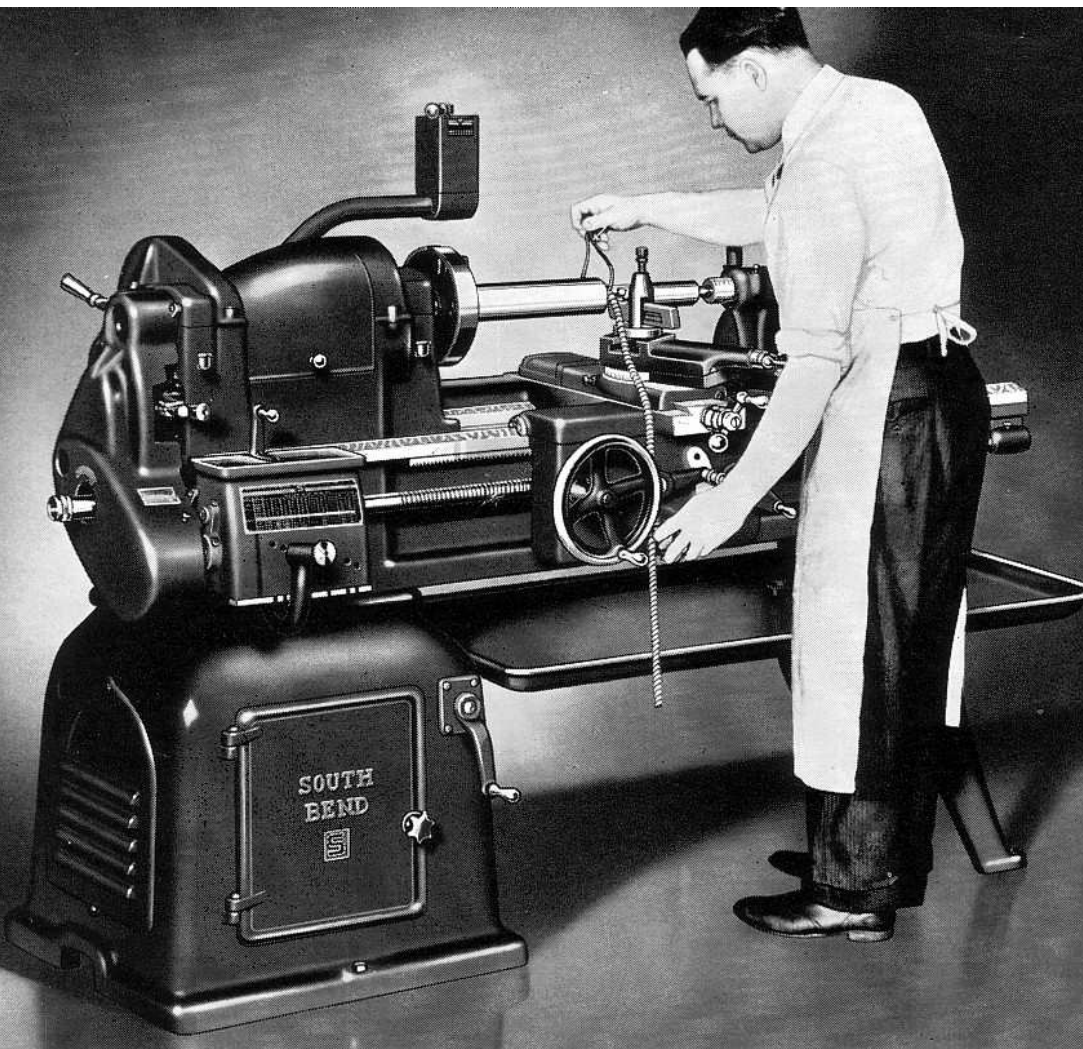


Fig. 8. Underneath Belt Motor Driven Lathe

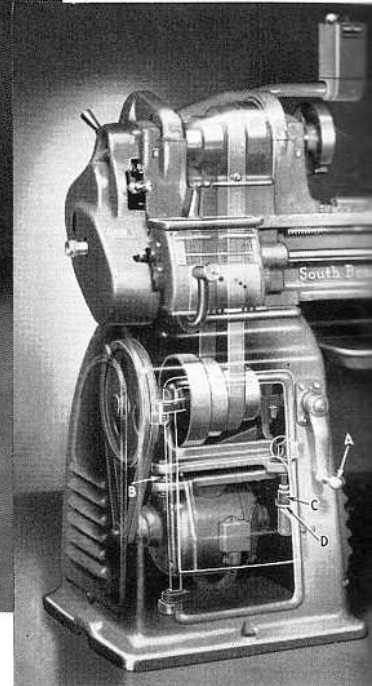


Fig. 9. Phantom View of Motor Drive

## Underneath Belt Motor Drive

### For All Sizes of Series "S" South Bend Lathes

The South Bend Underneath Belt Motor Drive is the most efficient and practical direct drive equipment for a back-geared screw cutting lathe. This fully enclosed drive is unusually compact and is silent in operation, powerful, and economical.

The belt drive to the spindle provides a smooth, steady pull, free from vibration and chatter. Power is transmitted from the motor to the countershaft by V-belt and from the countershaft up through the lathe bed to the headstock cone pulley by a flat leather belt. The pull of the belt is downward against the solid portion of the headstock.

Precision adjustments, "B" and "C," Figures 9 and 9A, provide for obtaining any desired tension on both the cone pulley belt and the motor belt. The adjusting screw "C" permits adjusting the cone pulley belt tension from one ounce to 1000 pounds or more. A belt tension release lever "A" permits releasing the cone pulley belt tension for easy shifting of the belt to change spindle speeds.

A conveniently located drum type reversing switch permits the operator to start, stop or reverse the rotation of the lathe spindle from an easy working position. Wiring between the motor and switch is enclosed in the metal arm, to which the switch is attached, and in flexible metal conduit. All connections between motor and switch are made at the factory so that the lathe is ready to operate as soon as the lead wires are connected to the electric line.

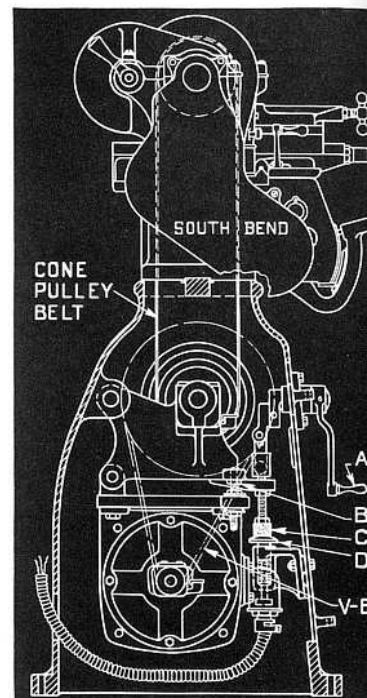


Fig. 9-A. Cross Section End View of Motor Drive

SOUTH BEND LATHE WORKS

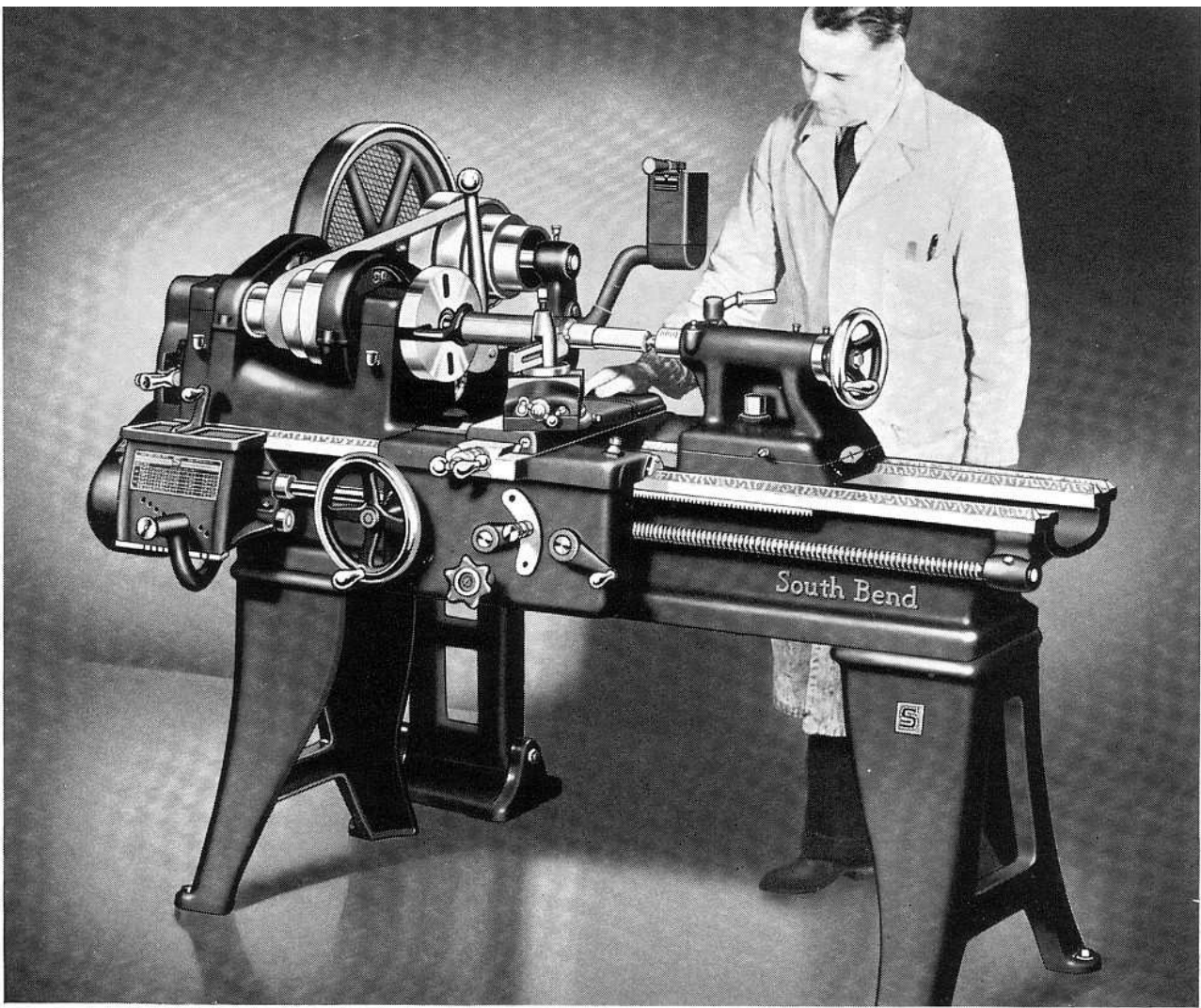


Fig. 10. Pedestal Motor Driven Lathe

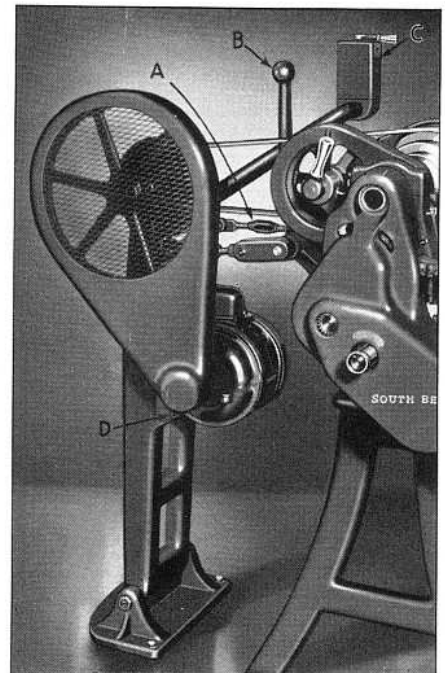
## Pedestal Adjustable Motor Drive For All Sizes of Series "S" South Bend Lathes

The new South Bend pedestal adjustable motor drive is convenient and efficient in operation and is reasonable in price. The motor and countershaft are mounted on a tilting pedestal back of the lathe. Power is transmitted from motor to countershaft by V-belts and from countershaft to the lathe spindle by a flat leather belt. This belted drive provides a smooth, steady pull, free from vibration and chatter.

Precision turnbuckle adjustment "A," Fig. 11, permits adjusting cone pulley belt for any desired belt tension. Lever "B" permits releasing the cone pulley belt tension instantly for easy shifting of the belt to change spindle speeds. Adjustment "D" is also provided for adjusting the tension of the V-belts used between the motor and countershaft. The V-belts are enclosed in a substantial guard.

Reversing switch "C" is conveniently located near the lathe spindle and permits the operator to start, stop or reverse the rotation of the lathe from an easy working position. Wiring between the motor and switch is enclosed in the metal arm to which the switch is attached, and in flexible metal conduit. All connections between motor and switch are made at the factory so that the lathe is ready to operate as soon as the lead wires are connected to the electric line.

The lathe is relieved of all strain as the weight of the motor and driving mechanism are supported by the pedestal, as shown in Fig. 11. There is no side pull on the lathe as the two adjustable tension braces "A" equalize the pull of the belt between the countershaft and lathe.



(Patented)

Fig. 11. End View of Pedestal Drive



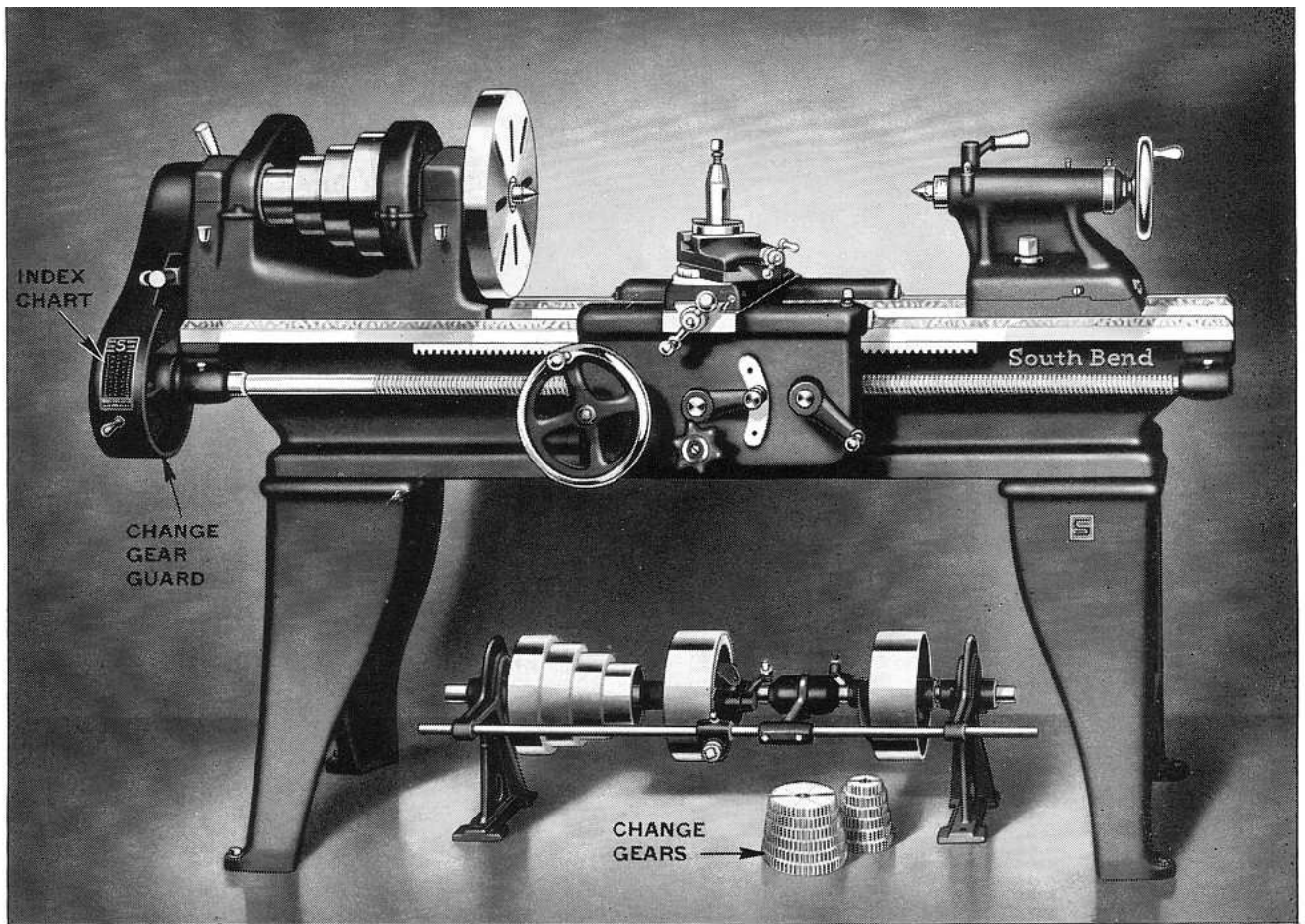


Fig. 12. Standard Change Gear Type South Bend Lathe

## Standard Change Gear Lathes—Series "S"

### Independent Change Gears Used For Various Threads and Feeds

South Bend Standard Change Gear Lathes have a set of independent change gears, as shown in Fig. 12 above, which are used to connect the lathe spindle with the lead screw for cutting various pitches of screw threads and also for obtaining a range of automatic power longitudinal carriage feeds and automatic power cross feeds through the friction clutch in the apron. Otherwise, the Standard Change Gear Lathes are exactly the same as the Quick Change Gear Lathes shown on page 7. All sizes of South Bend Lathes are made in both the Standard Change Gear Type and the Quick Change Gear Type.

A metal index chart (Fig. 13) is attached to each South Bend Standard Change Gear Lathe. This chart shows the arrangement of the change gears for various threads and for various power feeds. All Standard Change Gear Lathes cut right and left hand screw threads from 4 to 160 per inch. The automatic power cross feeds on all Series "S" Standard Change Gear Lathes range approximately from .0008" to .006". The automatic power longitudinal carriage feeds range approximately from .002" to .015" per revolution of the spindle, as indicated on the index chart.

Metric system Standard Change Gear Lathes have a corresponding range of metric threads and feeds. See page 97.

Standard Change Gear Lathes are popular in the small shop, as they are less expensive than the Quick Change Gear Type Lathes. They are also widely used in industrial plants for production operations which require few changes of threads and feeds.

SCREW THREADS AND POWER FEEDS					
10" SERIES "S" STANDARD CHANGE GEAR LATHE					
THREADS PER INCH	STUD GEAR	idler GEARS	SCREW GEAR	CROSS FEEDS	LONG. FEEDS
4	24	FIG. 1	48		
4 1/2	24	FIG. 1	54		
5	16	FIG. 1	40		
5 1/2	16	FIG. 1	44		
6	16	FIG. 1	48		
6 1/2	16	FIG. 1	52		
7	16	FIG. 1	56		
7 1/2	16	FIG. 1	60		
8	32	FIG. 2	32		
9	32	FIG. 2	36		
10	32	FIG. 2	40		
11	32	FIG. 2	44		
11 1/2	32	FIG. 2	46		
12	32	FIG. 2	48		
13	32	FIG. 2	52		
14	32	FIG. 2	56		
16	24	FIG. 2	48		
18	24	FIG. 2	54		
20	16	FIG. 2	40		
22	16	FIG. 2	44	.0056	.0152
24	16	FIG. 2	48	.0051	.0139
26	16	FIG. 2	52	.0048	.0129
27	16	FIG. 2	54	.0046	.0124
28	16	FIG. 2	56	.0044	.0119
30	16	FIG. 2	60	.0041	.0111
32	32	FIG. 3	32	.0039	.0105
36	32	FIG. 3	36	.0034	.0093
40	32	FIG. 3	40	.0031	.0084
44	32	FIG. 3	44	.0028	.0076
46	32	FIG. 3	46	.0027	.0073
48	32	FIG. 3	48	.0026	.0070
52	32	FIG. 3	52	.0024	.0064
54	32	FIG. 3	54	.0023	.0062
56	32	FIG. 3	56	.0022	.0060
60	32	FIG. 3	60	.0021	.0056
64	16	FIG. 3	32	.0019	.0052
72	16	FIG. 3	36	.0017	.0046
80	16	FIG. 3	40	.0015	.0042
88	16	FIG. 3	44	.0014	.0038
92	16	FIG. 3	46	.0013	.0036
96	16	FIG. 3	48	.0013	.0035
104	16	FIG. 3	52	.0012	.0032
112	16	FIG. 3	56	.0011	.0030
120	16	FIG. 3	60	.0010	.0028
160	16	FIG. 3	80	.0008	.0021

AUTOMATIC POWER FEEDS IN INCHES PER REVOLUTION OF HEADSTOCK SPINDLE

FIG. 1

FIG. 2

FIG. 3

Fig. 13. Index Chart Showing Threads and Feeds on 10-inch Standard Change Gear Lathe

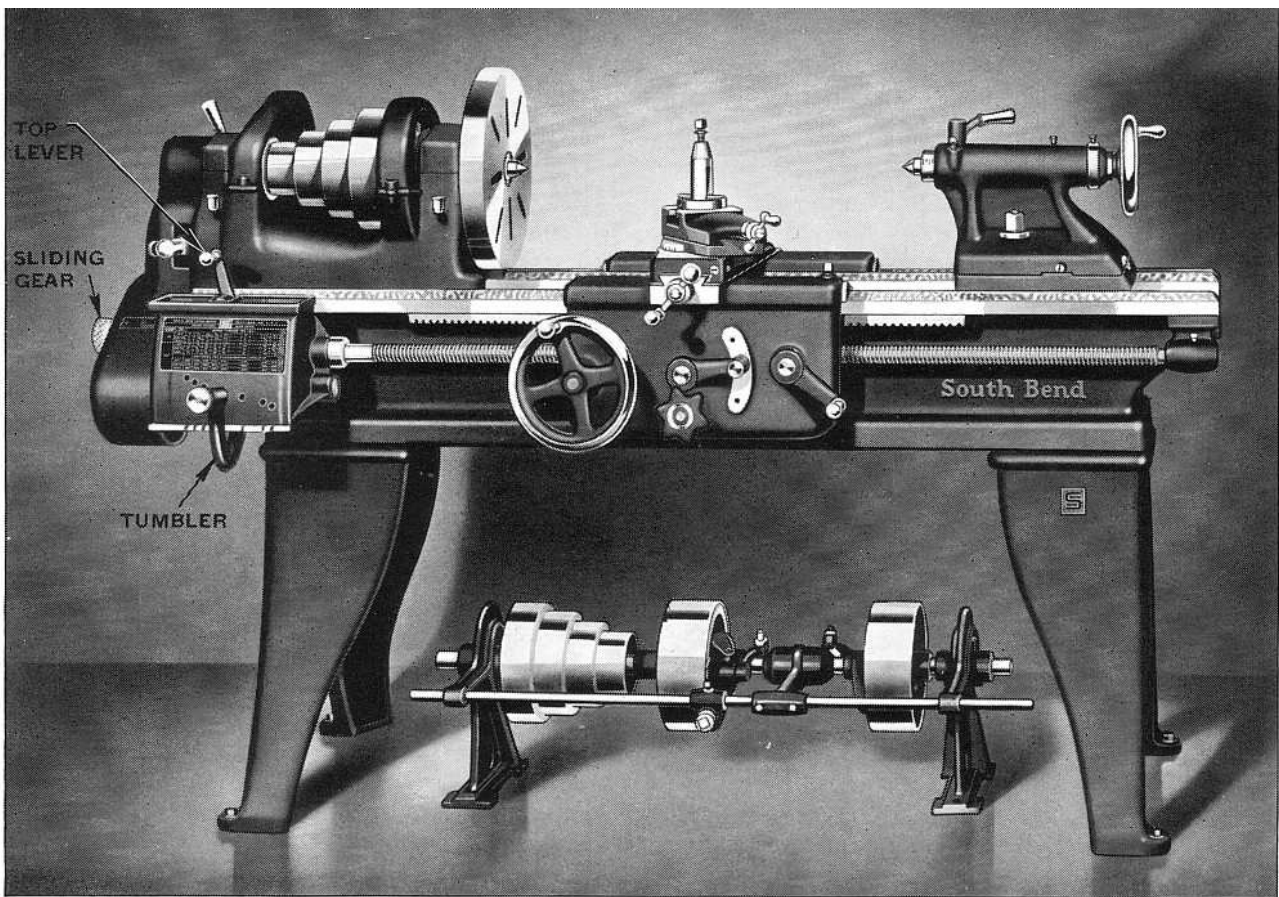


Fig. 14. Quick Change Gear Type South Bend Lathe

## Quick Change Gear Lathes—Series "S"

### Full Quick Change Gear Box Provides Various Threads and Feeds

A Quick Change Gear Lathe is one having quick change gear equipment, as illustrated above, for cutting the various pitches of screw threads and for automatic power longitudinal carriage feeds and automatic power cross feeds through the friction clutch in the apron. Otherwise, the Quick Change Gear Lathe is exactly the same as the Standard Change Gear Lathe. All sizes of South Bend Lathes are made in the Quick Change Gear Type, as well as in the Standard Change Gear Type.

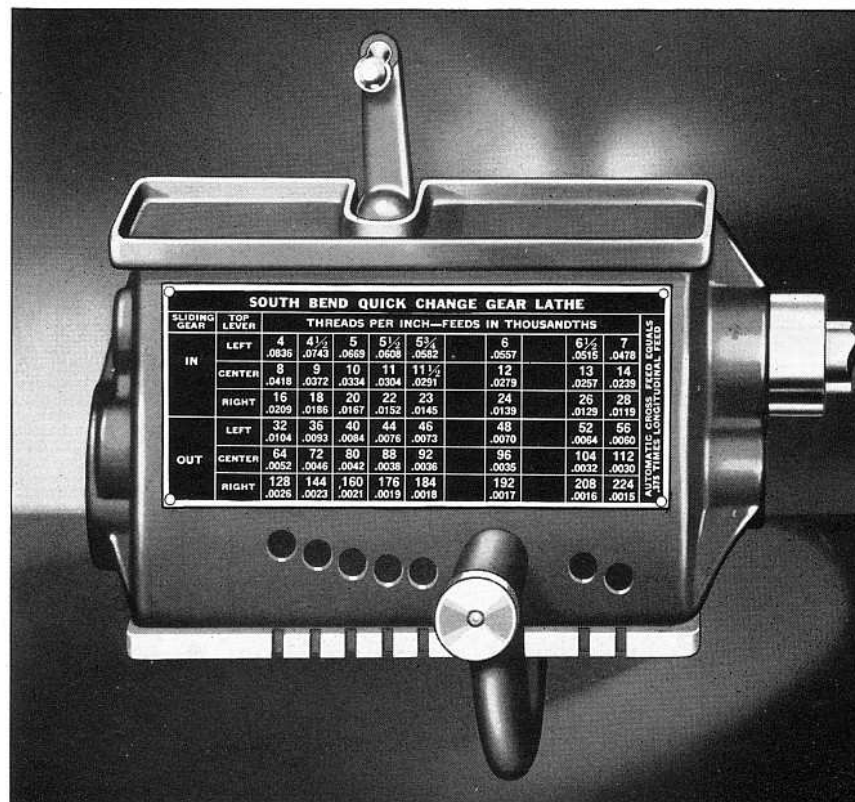
Changes for various pitches of screw threads and power feeds are made by shifting levers on the gear box and by sliding the primary gears on the end of the lathe, as indicated in Fig. 14 above.

The quick change gear box provides for cutting 48 right hand and left hand screw threads, ranging from 4 to 224 threads per inch. The threads per inch are shown in large figures on the direct reading index chart attached to gear box as shown in Fig. 15. The small figures, beneath the thread figures, on the chart indicate the power longitudinal turning feeds in thousandths of an inch.

Metric system Quick Change Gear Lathes have a corresponding range of metric screw threads and automatic feeds. See page 96.

Quick Change Gear Lathes are popular in shops where frequent changes of threads and feeds must be made, such as for tool and die work, general repair and maintenance, and for some production operations.

Fig. 15. Quick Change Gear Box used on a South Bend Lathe





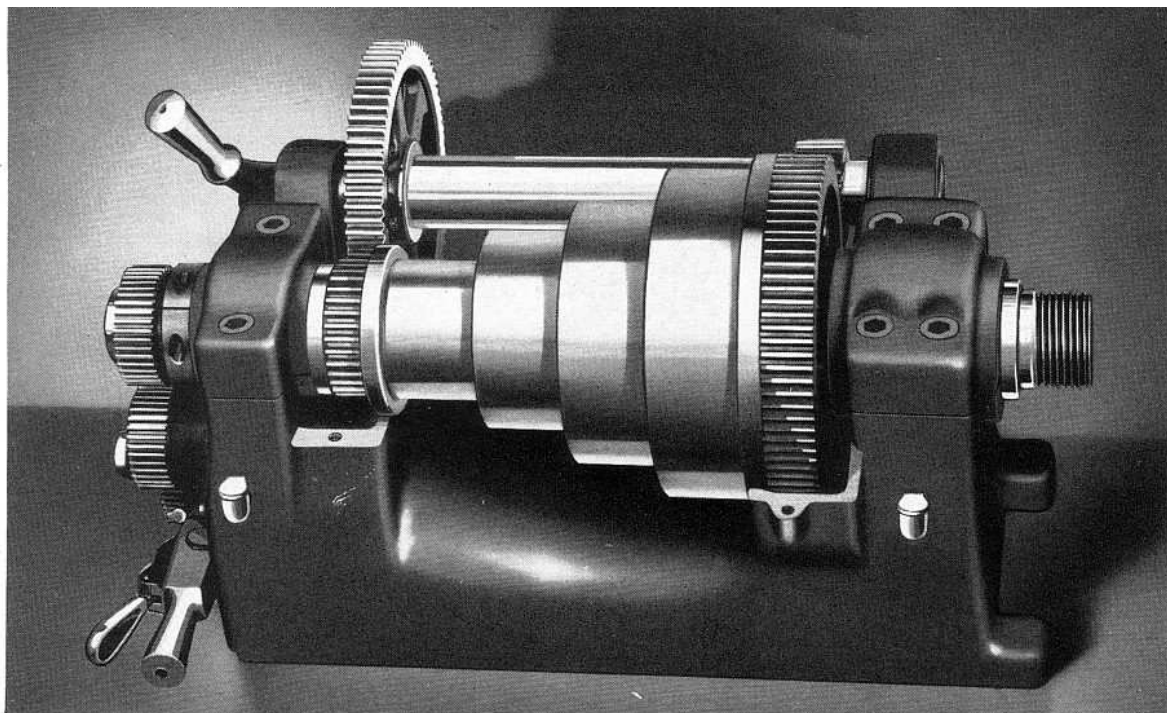


Fig. 16. Headstock with Gear Guards Removed to Show Back-Gears

## Headstock With Superfinished Spindle

Standard Equipment on All Series "S" South Bend Lathes

Headstock spindles for Series "S" South Bend Precision Lathes are made of alloy spindle steel, with all bearing surfaces carburized, hardened and ground. The journal bearing surfaces are superfinished to a smoothness of 5 microinches (.000005")\*, and have a hardness of 56 to 61 Rockwell C. The extreme smoothness and accuracy of the superfinished spindle bearing surface eliminates wear, reduces friction, permits higher spindle speeds, and assures precision.

The headstock bearings are unusually large, being of the integral type, and are precision bored and honed. This design permits using a large diameter spindle, providing extreme rigidity and reducing the possibility of chatter. The bearings are accurately adjusted at the factory and should require no further adjustment for years. Provision is made for take-up when required.

The superiority of the integral type bearing has been proved by seven years of research and experimental work and hundreds of tests conducted by our Engineering Department. More than 30,000 South Bend Lathes with this type of bearing construction are now in use.

Large oil reservoirs and an improved capillary oiling system provide a complete film of clean filtered oil which separates the rotating spindle from the bearing. As long as sufficient oil is supplied to maintain an adequate oil film, there can be no metal to metal contact in this bearing, no wear and no friction other than the fluid friction of the lubricant. An efficient oil return system retains the oil so that only an occasional replenishing is required.

\*Profilometer reading in microinches rms.

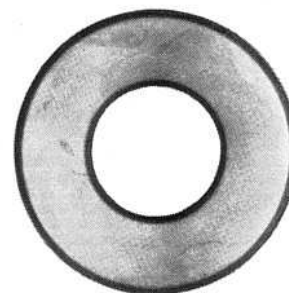


Fig. 17. Cross Section of Headstock Spindle. Bearing Surfaces are Carburized and Hardened to a Depth of  $\frac{3}{64}$ "

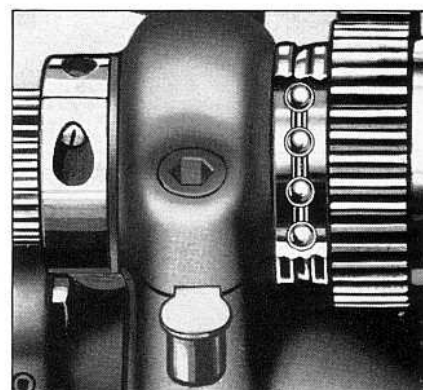


Fig. 18. Ball Thrust Bearing and Take-up Nut, Eliminate Spindle End Play



Fig. 19. Heat-treated Alloy Steel Spindle with Journal Bearing Surfaces Carburized, Hardened, Ground, and Superfinished.

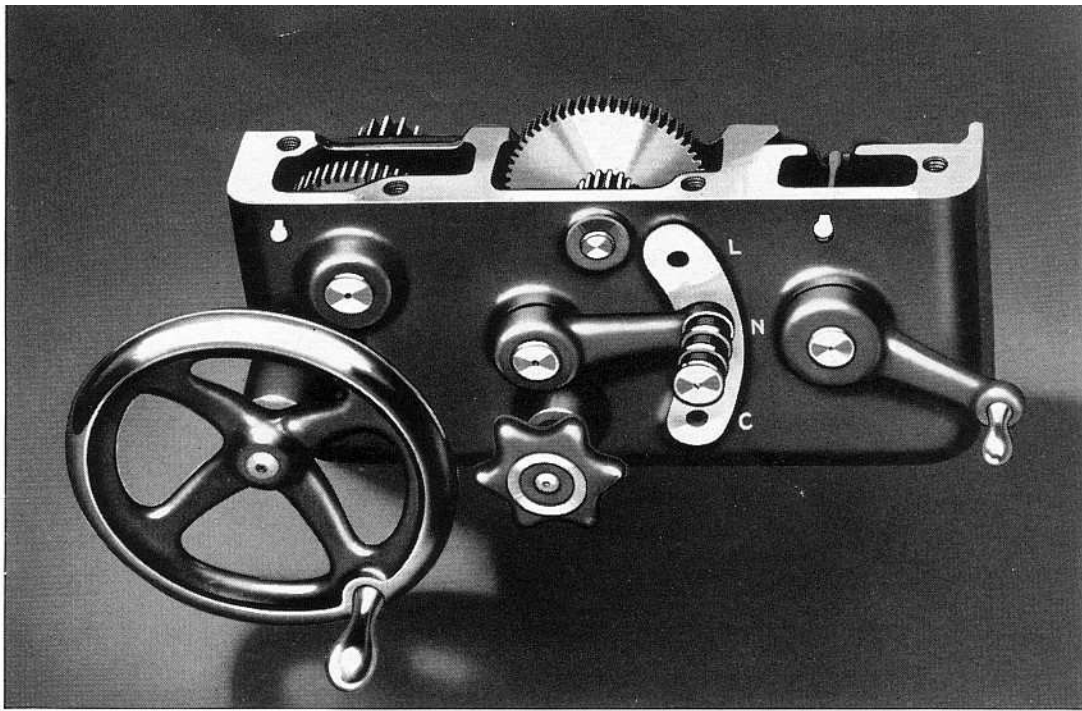


Fig. 20. Front View of Series "S" Double Wall Apron Showing Rigid Box Type Construction

## New Double Wall Apron

For All Sizes of Series "S" South Bend Lathes

The one-piece double wall apron shown above is rigidly constructed and provides substantial support for both ends of the gear shafts. A tumbler gear shift is used to change from automatic cross feed to automatic longitudinal feed.

The multiple disc friction clutch used for operating both the automatic cross feeds and the automatic longitudinal feeds is shown in Fig. 22. Alternate steel discs are keyed to the clutch shaft and worm wheel respectively. A slight turn of the clutch knob will engage or disengage the clutch, placing the automatic feeds in operation. This clutch will engage or release instantly. It is smooth in operation and will not stick or slip under heavy cuts.

The half-nuts for thread cutting are close coupled and are dovetailed into the back wall of the apron, as shown in Fig. 21 below. The half-nuts and threads of the lead screw are used only when cutting screw threads as a spline in the lead screw drives the worm which operates the automatic power carriage feeds. An automatic safety interlock prevents engaging either the half-nuts or the automatic feeds when the other is already engaged.

### Self Oiling Steel Gears in Apron

Gears in the apron are made of steel and have reservoir and felt wick oiling system. The rack pinion, shown at right end of apron (Fig. 21) is rigidly supported by substantial bearings in both the front wall and back wall of the apron.

Fig. 21. (Right) Back View of New Double Wall Apron

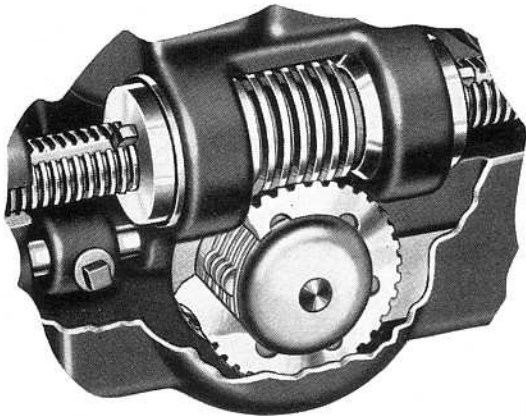
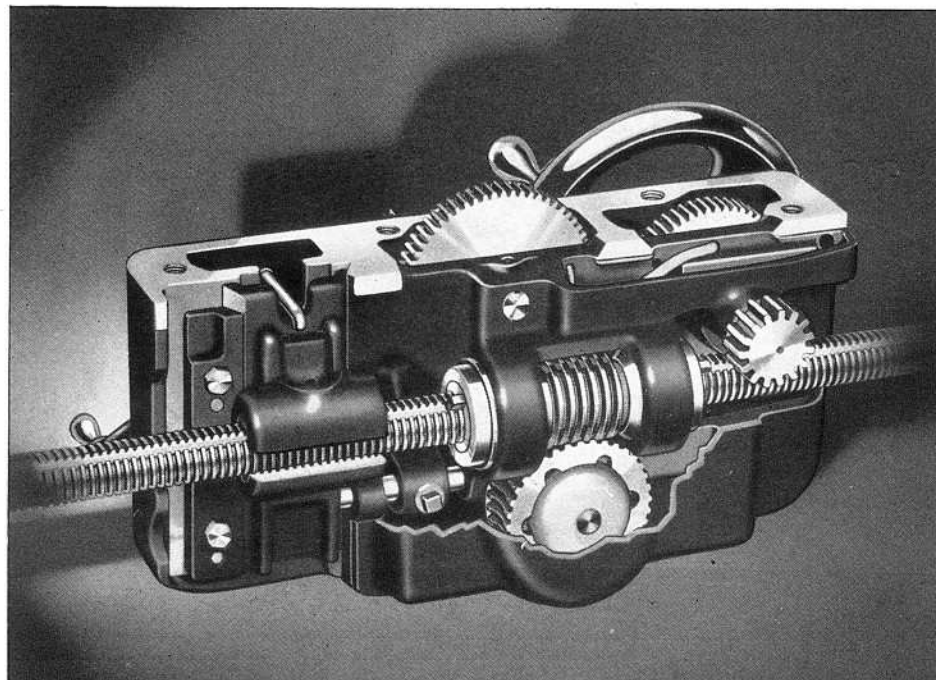


Fig. 22. (Above) Cut-away View Showing the Multiple Disc Friction Feed Clutch





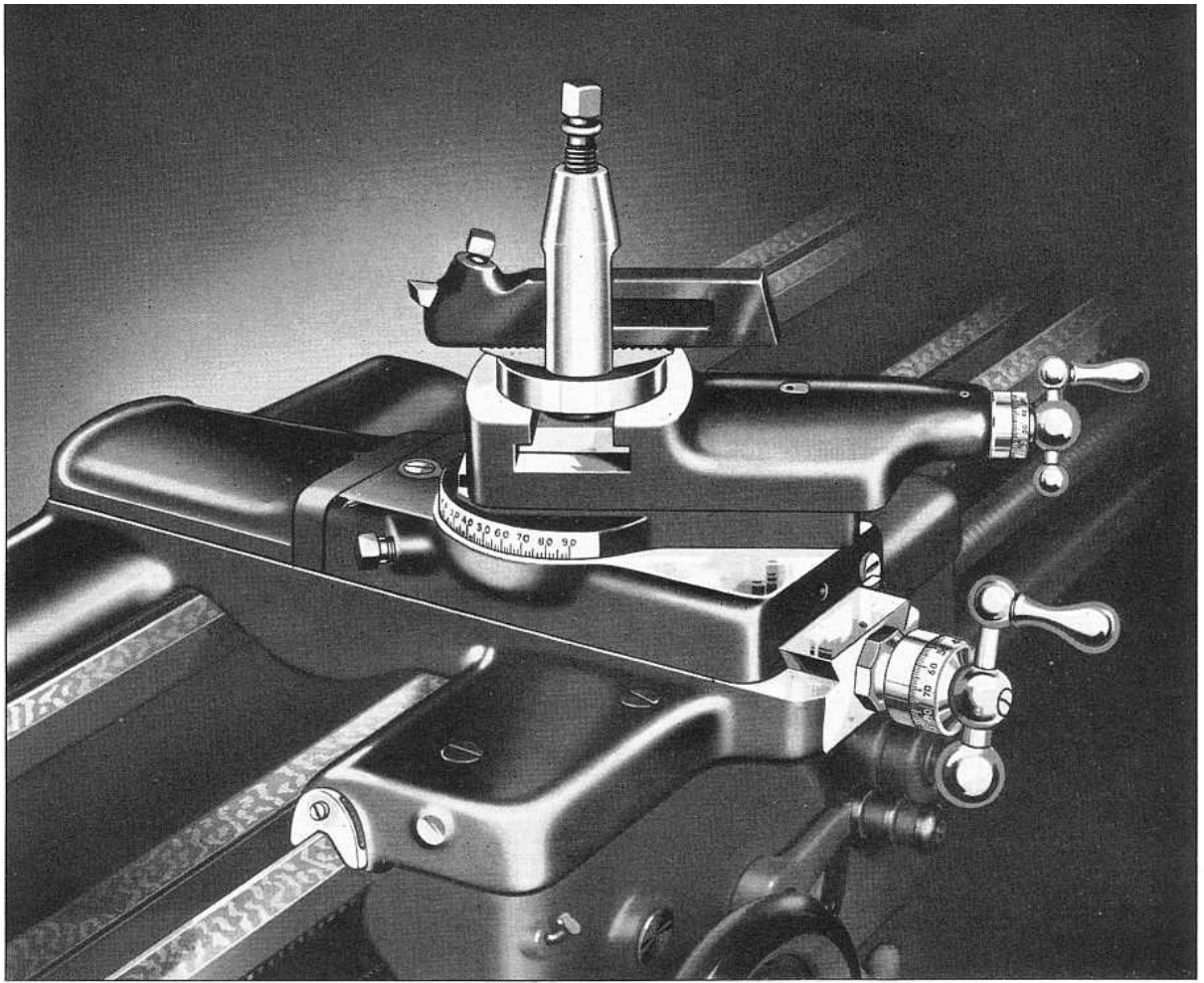


Fig. 23. Improved Saddle and Compound Rest for South Bend Lathes

## Improved Saddle and Compound Rest

For All Sizes of Series "S" South Bend Lathes

The saddle for Series "S" South Bend Lathes has unusually long bearings carefully hand-scraped to conform with the outer V-ways of the lathe bed. Felt pad wipers are attached to each end of the saddle to clean and oil the V-ways of the bed. The cross slide bridge is wide and deep, providing

a rigid support for the tool rest and the dovetail is hand-scraped square with the V-ways of the saddle.

Both the compound rest base and the compound rest top dovetails are hand-scraped and lapped and have adjustable tapered gibs. The compound rest base is drilled and tapped for the thread cutting stop screw. The compound rest swivel bearing is accurately hand-scraped and fitted. The swivel is graduated 180-degrees and may be set at any angle for turning and boring bevels and tapers.

The cross feed screw and compound rest screw have accurately graduated collars reading in thousandths of an inch. These collars are adjustable and may be set at zero whenever desired. Crank handles for both compound rest screw and cross feed screw are of polished steel.

The tool post, tool post ring, and tool post rocker are made of drop forged steel, heat-treated and hardened. Rocker adjustment is provided for adjusting the cutting edge of tool to desired height.

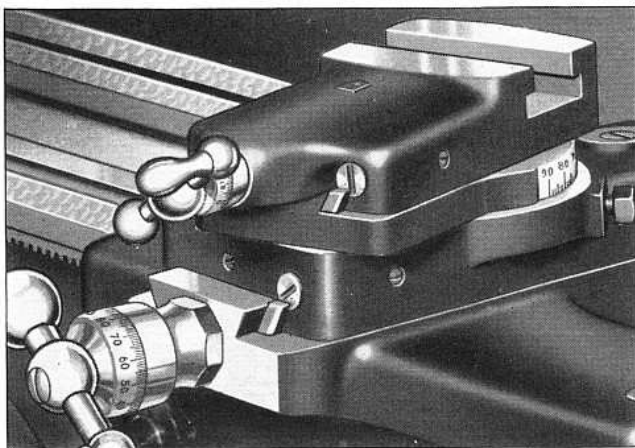


Fig. 24. Close-up Showing Adjustable Tapered Gibs Used on Compound Rest Base and Top Dovetails

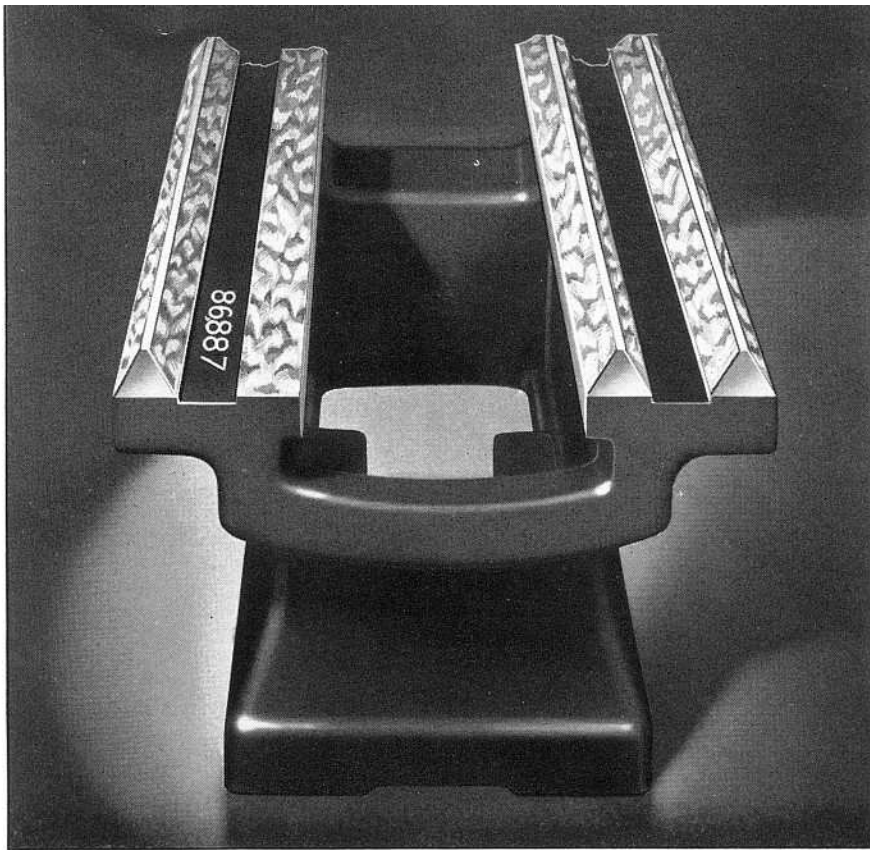


Fig. 25. End View of Lathe Bed

## Heavy Semi-Steel Lathe Bed

For All Sizes of Series "S" South Bend Lathes

Beds for Series "S" South Bend Lathes are heavily constructed with large box braces cast in at short intervals. The beds are made of a special grade of iron with 50 to 70 per cent steel which makes a hard close-grained casting having unusual strength and long wearing qualities.

Three large V-ways and one flat way align the headstock, carriage, and tailstock on the bed. The

carriage slides on the two outside V-ways and the headstock and tailstock are aligned by the inside V-way. The ways are carefully hand-scraped the entire length of the bed.

Careful inspection is made to be sure that a uniform bearing is obtained the full length of the bed and that all ways are straight and parallel. The serial number is stamped on the bed as shown.

## Tailstock Has Graduated and Ground Spindle

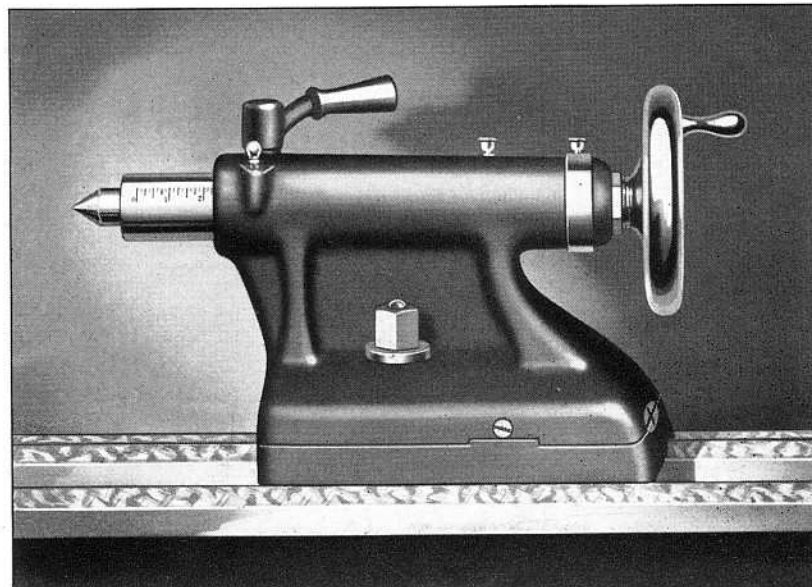
For All Sizes of Series "S" South Bend Lathes

The tailstock for all sizes and types of South Bend Lathes is offset to allow the compound rest to swivel parallel to the bed. A sensitive screw adjustment is provided to set over the tailstock top for taper turning.

The tailstock spindle for all Series "S" lathes is graduated in sixteenths of an inch for drilling to accurate depths. An improved double plug binder securely locks the spindle without altering the alignment of the centers.

The tailstock center is made of tool steel hardened and ground all over, and is self-ejecting. A brass quill and oil well are provided for oiling the center.

Fig. 26. Tailstock Used on South Bend Series "S" Lathes





# 16-inch South Bend Precision Lathes—Series "S"

Specifications Apply to all 16-inch Lathes Shown in this Catalog

All types of 16-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage, and bed. The only difference between the various models of lathes is in the type of drive, and the equipment supplied.

## Capacity of Lathe

Swing over bed and saddle wings.....	16 $\frac{1}{4}$ "
Swing over saddle with chip guard removed.....	11 $\frac{1}{8}$ "
Swing over saddle with chip guard.....	9 $\frac{5}{8}$ "

## Spindle Speeds

Standard spindle speeds (subject to 5% variation)	
R.P.M. of spindle, direct belt driven.....	725, 438, 277, 171
R.P.M. of spindle, back gears engaged.....	91, 55, 35, 21
Higher spindle speeds can be supplied to order. Price on request.	

## Threads and Feeds

Thread cutting range	
Quick Change gear lathe—48 threads R.H. or L.H.....	4 to 224 per inch
Standard Change gear lathe—45 threads R.H. or L.H.....	4 to 160 per inch
Longitudinal feeds through friction clutch	
Quick Change gear lathe—48 feeds R.H. or L.H.....	.0015" to .0841"
Standard change gear lathe—26 feeds R.H. or L.H.....	.0021" to .0153"
Cross feeds through friction clutch	
Quick change gear lathe—48 feeds.....	.0006" to .0312"
Standard change gear lathe—26 feeds.....	.0008" to .0057"
Lead screw, 29° Acme thread.....	1 $\frac{1}{8}$ " Diam.—6 Thrds.

## Headstock

Hole through spindle.....	1 $\frac{3}{8}$ "
Maximum collet capacity*.....	1"
Spindle nose diameter and threads per inch.....	2 $\frac{3}{8}$ "-6
Size of Center, Morse taper.....	No. 3
Width of cone pulley step for belt.....	2 $\frac{1}{4}$ "
Large face plate diameter.... 13 $\frac{1}{4}$ "	Small face plate diameter.... 8 $\frac{1}{16}$ "
Spindle bearings are cast integral with headstock.	
Front spindle bearing, diameter.....	2 $\frac{7}{8}$ "

## Compound Rest

Cross slide will travel.....	10 $\frac{1}{2}$ "
Angular hand feed of compound rest top slide.....	3 $\frac{3}{4}$ "

## Tool Post

Size of tool holder shank.....	5 $\frac{5}{8}$ " x 1 $\frac{3}{8}$ "
Size of cutter bits tool holder takes.....	3 $\frac{3}{8}$ " sq.

## Tailstock

Size of Morse taper centers.....	No. 3
Spindle travel.....	5 $\frac{3}{4}$ "
Each graduation on tailstock spindle advances spindle.....	1 $\frac{1}{16}$ "
Tailstock top will set over for taper turning.....	1"

## Motor

Standard size of motor supplied with each 16-inch motor driven lathe ..	1 $\frac{1}{2}$ H.P.
Standard motors as listed with lathes shown in this catalog: 1-phase, 50 or 60 cycle, 115 or 230 volt; 3-phase, 50/60 cycle, 220, 440, or 550 volt; D.C., 115 or 230 volt. Special motors supplied to order. Prices of lathes with special motors will be quoted on request.	

## Specifications of Lathes with Metric Lead Screws

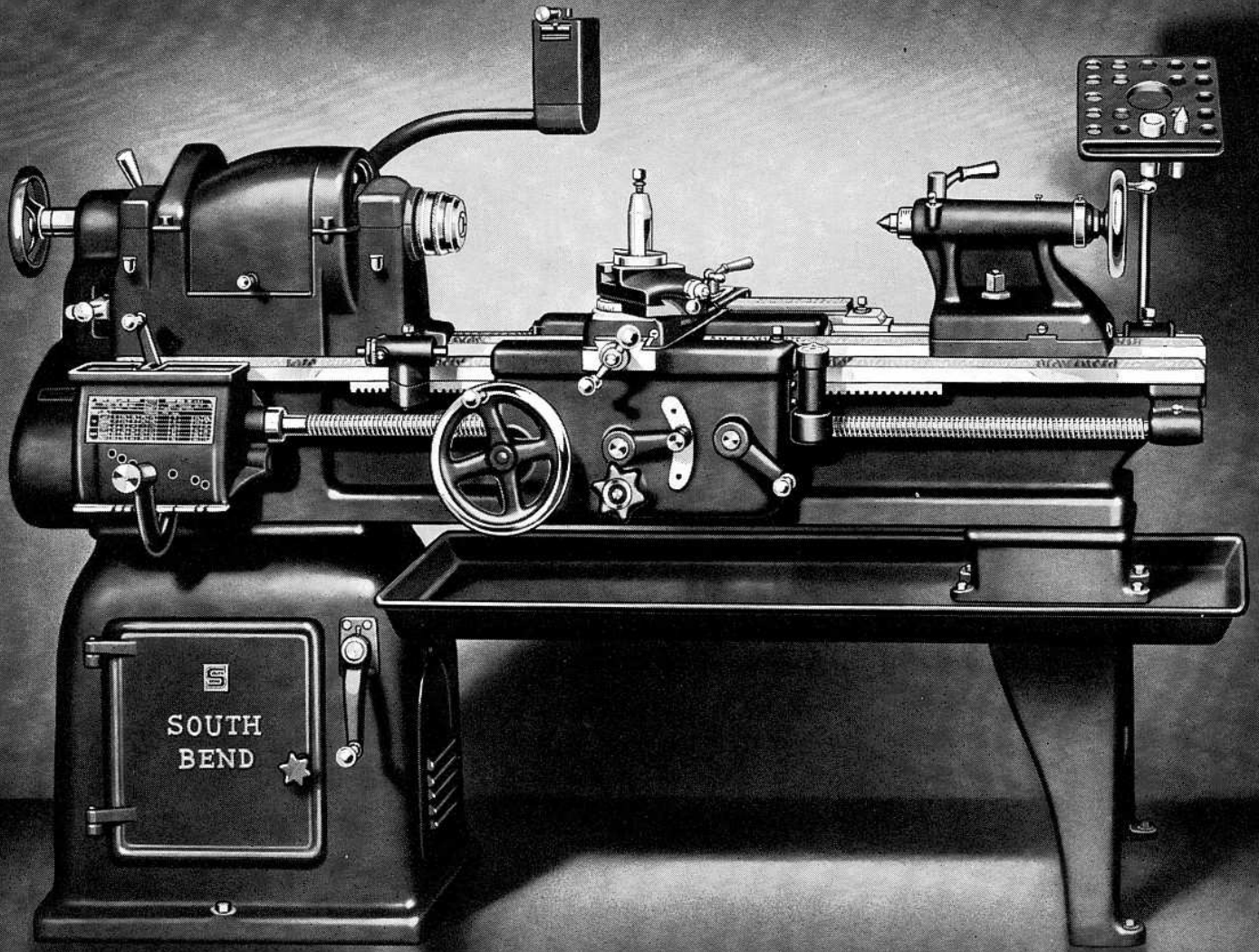
Applying only to lathes ordered with metric lead screw and metric graduations.

Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch..... 4.0 mm	Cross feed screw pitch..... 3.0 mm

\*Collets for 16" Lathes are interchangeable with Collets for 10"—1" Collet Capacity Lathes. Draw-in Collet Chuck Attachment is not interchangeable.

For description of lathe features see pages 6 to 11

16"  
LATHES



**16"**  
LATHES

## 16-inch Tool Room Precision Lathe—Series "S" Underneath Motor Drive—Back-Geared—Belt Drive to Spindle

The 16-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 12 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull, entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading mi-

rometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

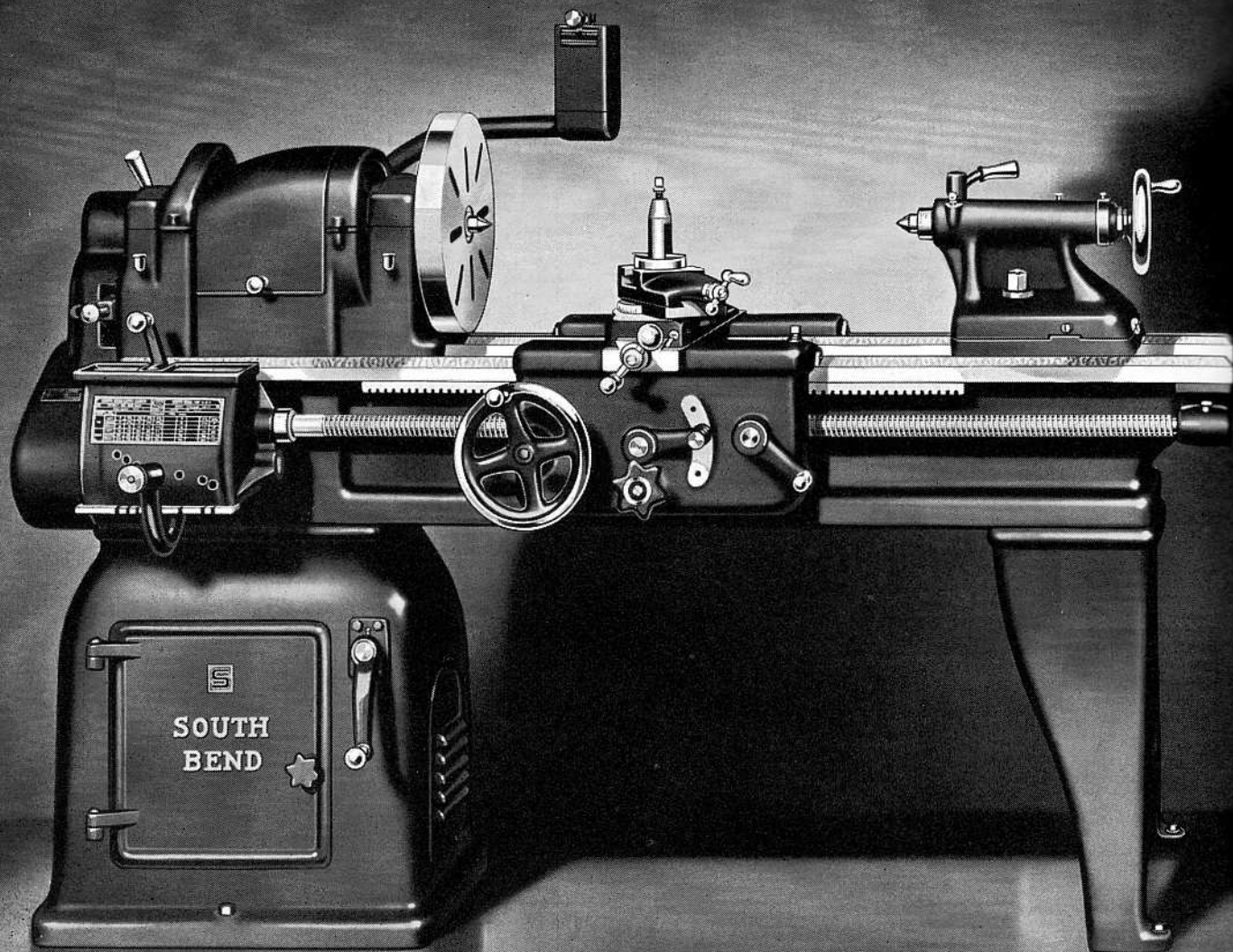
Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price of lathe consists of: 1½ H.P. instant reversing motor; reversing switch; wiring; 4 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

16-inch Underneath Motor Driven Tool Room Lathes

Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers.....	33½-in.	45¼-in.	57¼-in.
Catalog Number.....	8117-C	8117-D	8117-E
Shipping Weight, Crated.....	2525 lbs.	2605 lbs.	2685 lbs.
Code Word.....	Balha	Barso	Balib





**16"**  
LATHES

## 16-inch Underneath Motor Driven Precision Lathe—Series "S" Quick Change Gear Type—Back-Geared—Belt Drive to Spindle

The 16-inch Quick Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. The full quick change gear box provides an unusually wide range of screw threads and power feeds.

The Underneath Motor Drive is entirely self-contained and fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

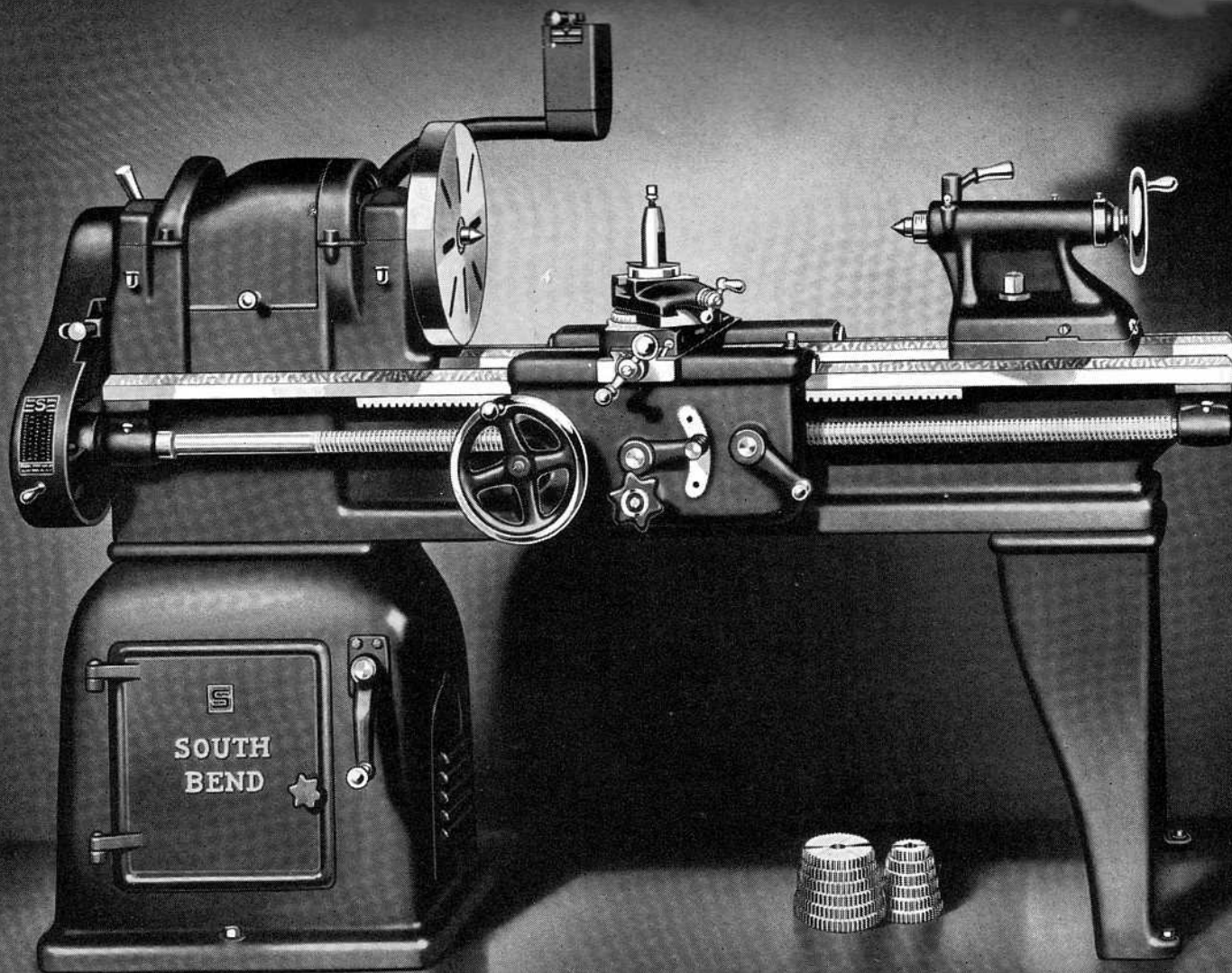
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 12 for complete specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1½ H.P. instant reversing motor; reversing switch; wiring for the switch and motor; 4 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

16-inch Quick Change Gear Underneath Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	33½-in.	45½-in.	57½-in.	81½-in.	105½-in.
Catalog Number.....	117-C	117-D	117-E	117-G	117-H
Shipping Weight, Crated.....	2300 lbs.	2380 lbs.	2460 lbs.	2620 lbs.	2850 lbs.
Code Word.....	Bapvo	Barve	Baryo	Basoz	Bavco



**16"**  
LATHES

## 16-inch Underneath Motor Driven Precision Lathe—Series "S" Standard Change Gear Type—Back-Geared—Belt Drive to Spindle

The 16-inch Standard Change Gear Lathe with underneath belt motor drive is recommended for production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 12 for complete specifications.

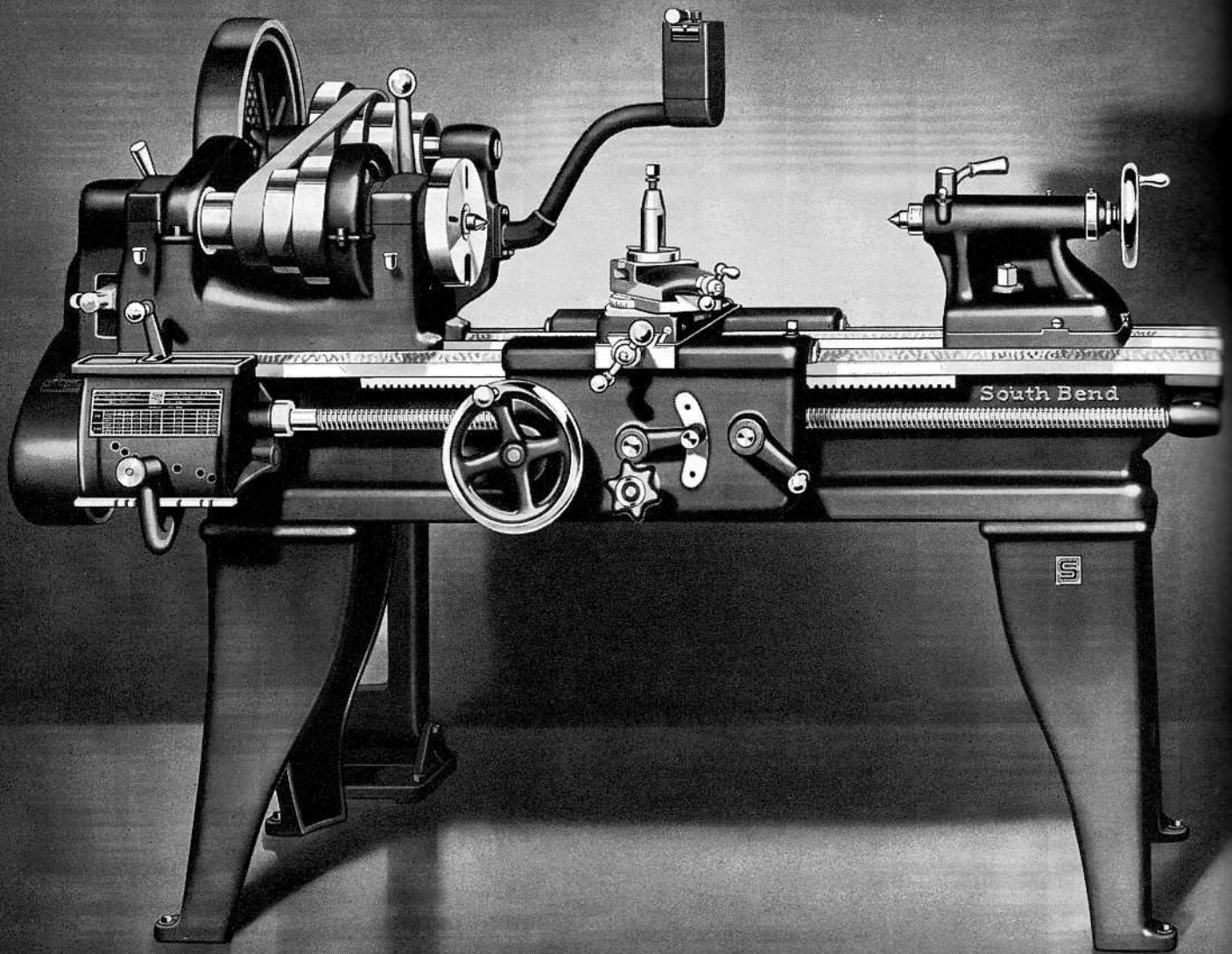
Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1½ H.P. instant reversing motor; reversing switch; wiring; 4 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel spindle centers; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and book "How to Run a Lathe."

16-inch Standard Change Gear Underneath Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	33¼-in.	45¼-in.	57¼-in.	81¼-in.	105¼-in.
Catalog Number.....	123-C	123-D	123-E	123-G	123-H
Shipping Weight, Crated.....	2268 lbs.	2345 lbs.	2425 lbs.	2585 lbs.	2815 lbs.
Code Word.....	Babes	Babgu	Babiw	Babma	Babob





16"  
LATHES

## 16-inch Pedestal Motor Driven Precision Lathe—Series "S" Quick Change Gear Type—Back-Geared—Belt Drive to Spindle

The 16-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient, and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

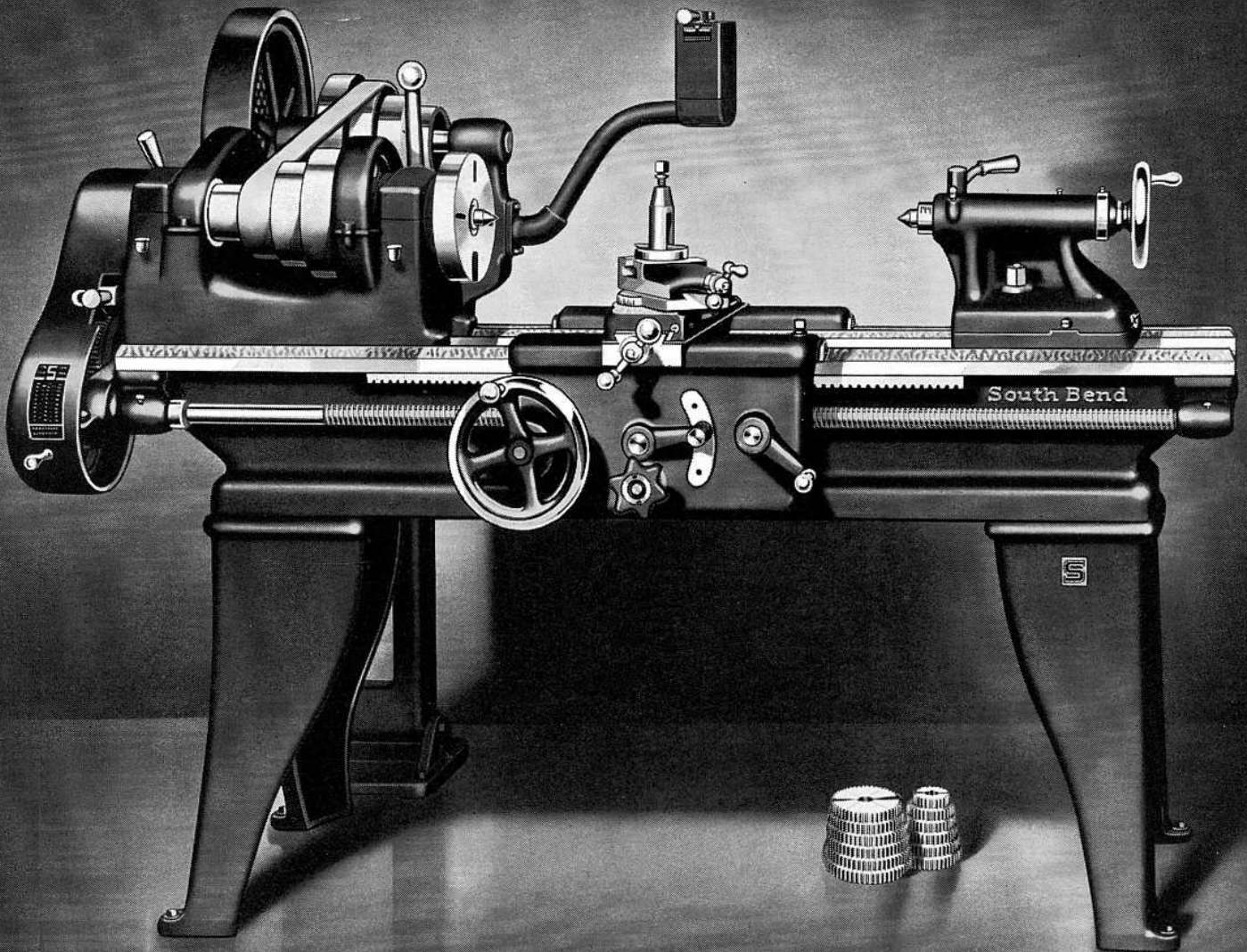
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 12 for specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1½ H.P. instant reversing motor; reversing switch; wiring; 4 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

16-inch Quick Change Gear Pedestal Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	33½-in.	45½-in.	57½-in.	81½-in.	105½-in.
Catalog Number.....	917-C	917-D	917-E	917-G	917-H
Shipping Weight, Crated.....	2165 lbs.	2245 lbs.	2325 lbs.	2485 lbs.	2715 lbs.
Code Word.....	Lapin	Lalos	Larag	Lamar	Lanos



16"  
LATHES

## 16-inch Pedestal Motor Driven Precision Lathe—Series "S" Standard Change Gear Type—Back-Geared—Belt Drive to Spindle

The 16-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. Independent change gears, supplied with lathe, provide a wide range of right and left hand screw threads and power feeds.

The Pedestal Motor Drive is exceptionally convenient, and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 12 for specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

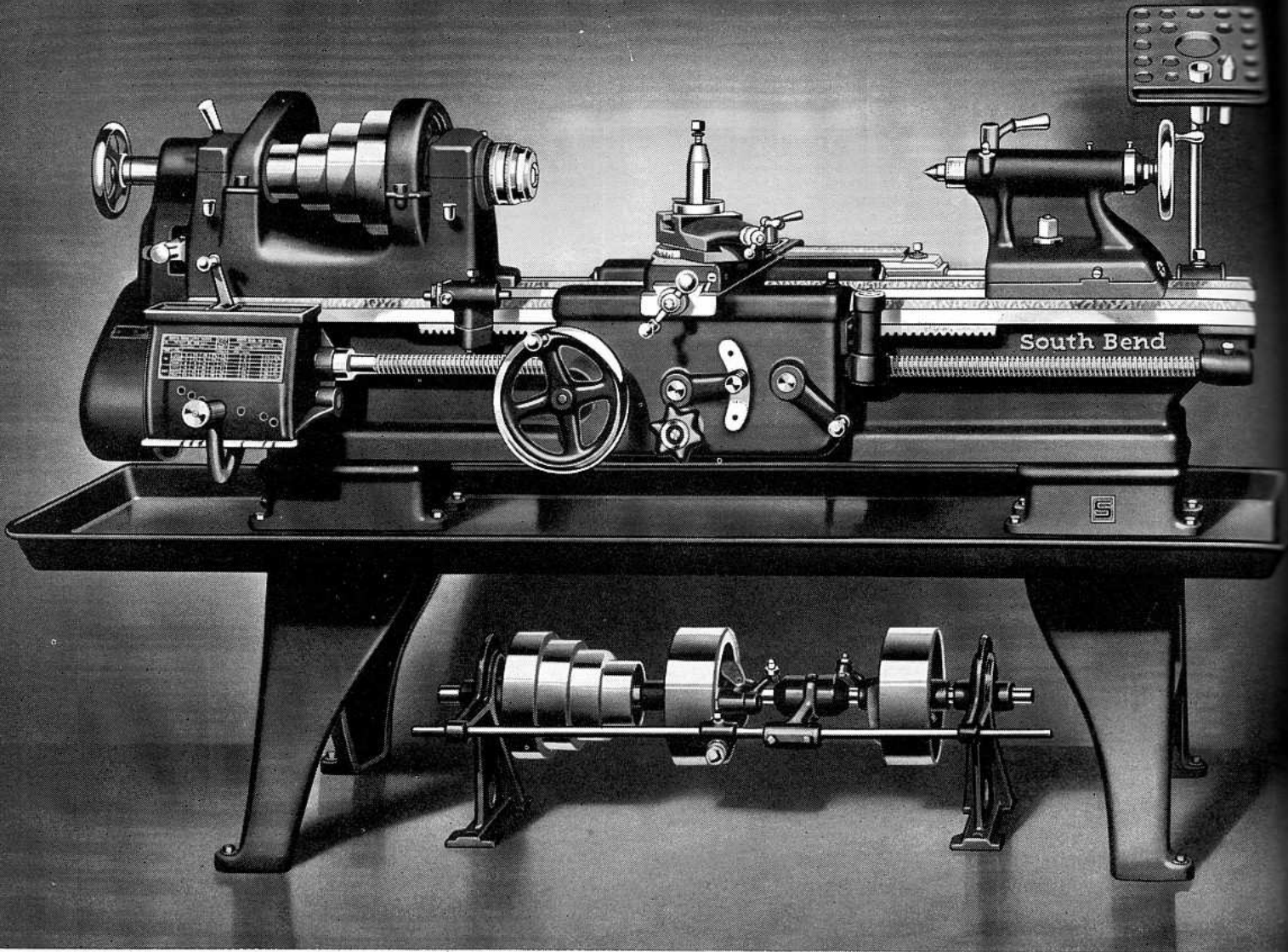
Regular Equipment included in price of lathe consists of: 1½ H.P. instant reversing motor; reversing switch; wiring; 4 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

16-inch Standard Change Gear Pedestal Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	33¼-in.	45¼-in.	57¼-in.	81¼-in.	105¼-in.
Catalog Number.....	923-C	923-D	923-E	923-G	923-H
Shipping Weight, Crated.....	2130 lbs.	2210 lbs.	2290 lbs.	2450 lbs.	2680 lbs.
Code Word.....	Pirel	Piren	Pabit	Pabog	Pacen

SOUTH BEND, INDIANA, U.S.A.





## 16-inch Tool Room Precision Lathe—Series "S"

Countershaft Drive—Back-Geared—Belt Drive to Spindle

The 16-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 12 for complete specifications of this lathe.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading mi-

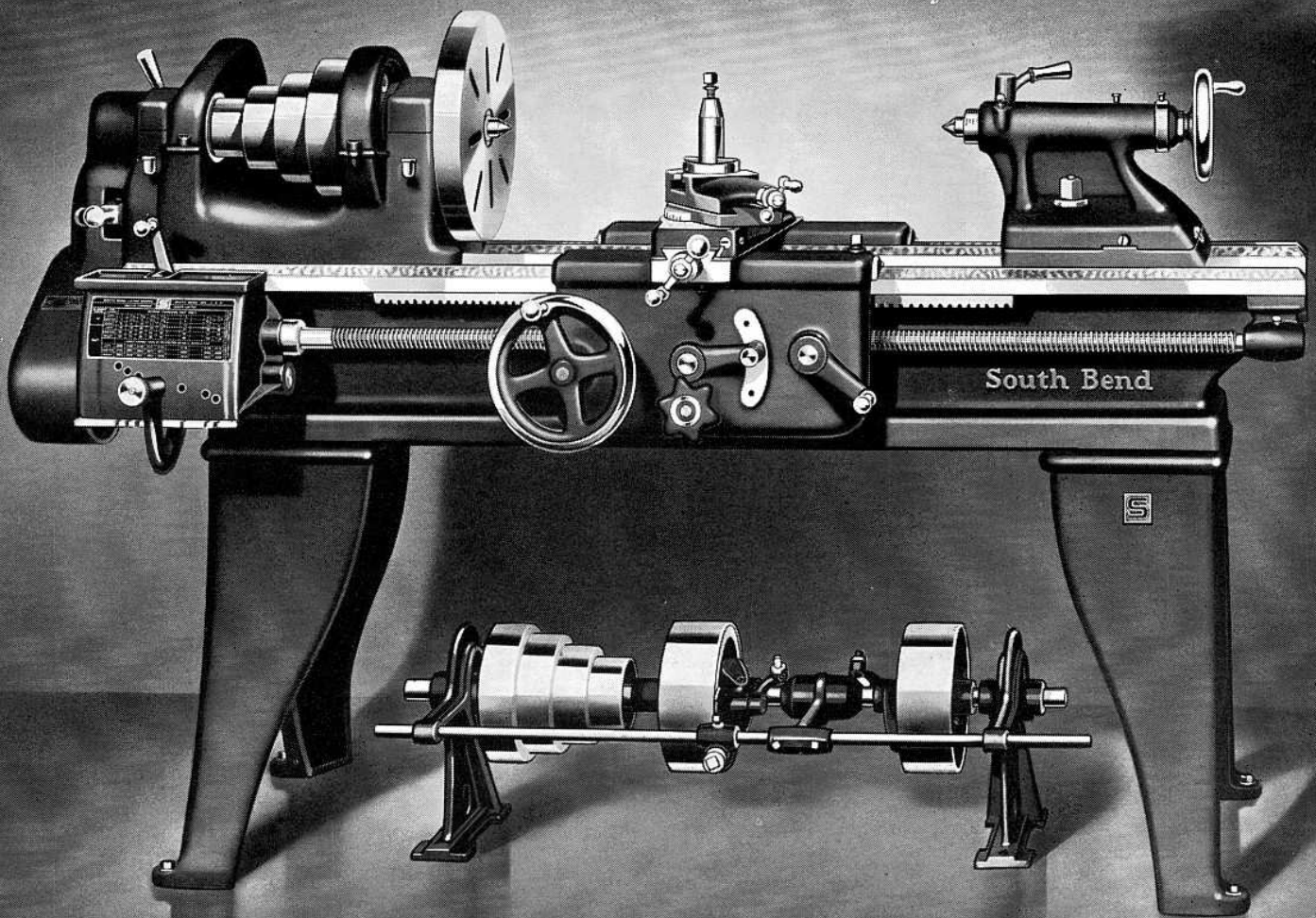
rometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

Tool Room Attachments included in price of this lathe consist of: hand wheel type collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; gear box; installation plan; and book "How to Run a Lathe."

16-inch Countershaft Driven Tool Room Lathes

Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers.....	33 $\frac{1}{2}$ in.	45 $\frac{1}{2}$ in.	57 $\frac{1}{2}$ in.
Catalog Number.....	8017-C	8017-D	8017-E
Shipping Weight, Crated.....	2125 lbs.	2205 lbs.	2285 lbs.
Code Word.....	Larel	Laboz	Lerem



16"  
LATHES

## 16-inch Countershaft Driven Precision Lathe—Series "S"

Quick Change and Standard Change Types—Back-Geared—Belt Drive to Spindle

The 16-inch Lathe with Countershaft Drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants. See page 12 for specifications.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Eight spindle speeds forward and eight in reverse are available.

Improved Features include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog.

SOUTH BEND, INDIANA, U.S.A.

Regular Equipment included in price consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; tool post; adjustable thread cutting stop; spindle centers; spindle sleeve; wrenches; gear box or set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

Quick Change Gear  
16-inch Countershaft Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers....	33½-in.	45½-in.	57½-in.	81½-in.	105½-in.
Catalog Number.....	17-C	17-D	17-E	17-G	17-H
Shipping Weight, Crated....	1875 lbs.	1955 lbs.	2035 lbs.	2195 lbs.	2425 lbs.
Code Word.....	Alcis	Alcot	Algat	Algoy	Alguz

Standard Change Gear  
16-inch Countershaft Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers....	33½-in.	45½-in.	57½-in.	81½-in.	105½-in.
Catalog Number.....	23-C	23-D	23-E	23-G	23-H
Shipping Weight, Crated....	1840 lbs.	1920 lbs.	2000 lbs.	2160 lbs.	2390 lbs.
Code Word.....	Amnuc	Ampay	Andun	Anler	Anlot



# 14½-inch South Bend Precision Lathes—Series "S"

*Specifications Apply to all 14½-inch Lathes Shown in this Catalog*

All types of 14½-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage, and bed. The only difference between the various models of lathes is in the type of drive, and the equipment supplied.

## Capacity of Lathe

Swing over bed and saddle wings . . . . .	14½"
Swing over saddle with chip guard removed . . . . .	10½"
Swing over saddle with chip guard . . . . .	8½"

## Spindle Speeds

Standard spindle speeds (subject to 5% variation)	
R.P.M. of spindle, direct belt driven . . . . .	800, 482, 300, 181
R.P.M. of spindle, back gears engaged . . . . .	121, 72, 45, 27

Higher spindle speeds can be supplied to order. Price on request.

## Threads and Feeds

Thread cutting range	
Quick Change gear lathe—48 threads R.H. or L.H. . . . .	4 to 224 per inch
Standard Change gear lathe—45 threads R.H. or L.H. . . . .	4 to 160 per inch
Longitudinal feeds through friction clutch	
Quick Change gear lathe—48 feeds R.H. or L.H. . . . .	.0015" to .0841"
Standard Change gear lathe—26 feeds R.H. or L.H. . . . .	.0021" to .0153"
Cross feeds through friction clutch	
Quick Change gear lathe—48 feeds . . . . .	.0006" to .0312"
Standard Change gear lathe—26 feeds . . . . .	.0008" to .0057"
Lead screw, 29° Acme thread . . . . .	1½" Diam., 6 Threads

## Headstock

Hole through spindle . . . . .	1½"
Maximum collet capacity . . . . .	1"
Spindle nose diameter and threads per inch . . . . .	2¼"-6
Size of Center, Morse taper . . . . .	No. 3
Width of cone pulley step for belt . . . . .	2½"
Large face plate diameter . . . . . 12" Small face plate diameter . . . . .	7½"
Spindle bearings are cast integral with headstock.	
Front spindle bearing, diameter . . . . .	2½"

## Compound Rest

Cross slide will travel . . . . .	10"
Angular hand feed of compound rest top slide . . . . .	3½"

## Tool Post

Size of tool holder shank . . . . .	5/8" x 1½"
Size of cutter bits tool holder takes . . . . .	3/8" sq.

## Tailstock

Size of Morse taper centers . . . . .	No. 3
Spindle travel . . . . .	5½"
Each graduation on tailstock spindle advances spindle . . . . .	1/16"
Tailstock top will set over for taper turning . . . . .	1½"

## Motor

Standard size of motor supplied with each 14½-inch motor driven lathe . . . . .	1½ H.P.
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Standard motors as listed with lathes shown in this catalog: 1-phase, 50 or 60 cycle, 115 or 230 volt; 3-phase, 50/60 cycle, 220, 440, or 550 volt; D.C., 115 or 230 volt. Special motors supplied to order. Prices of lathes with special motors will be quoted on request.

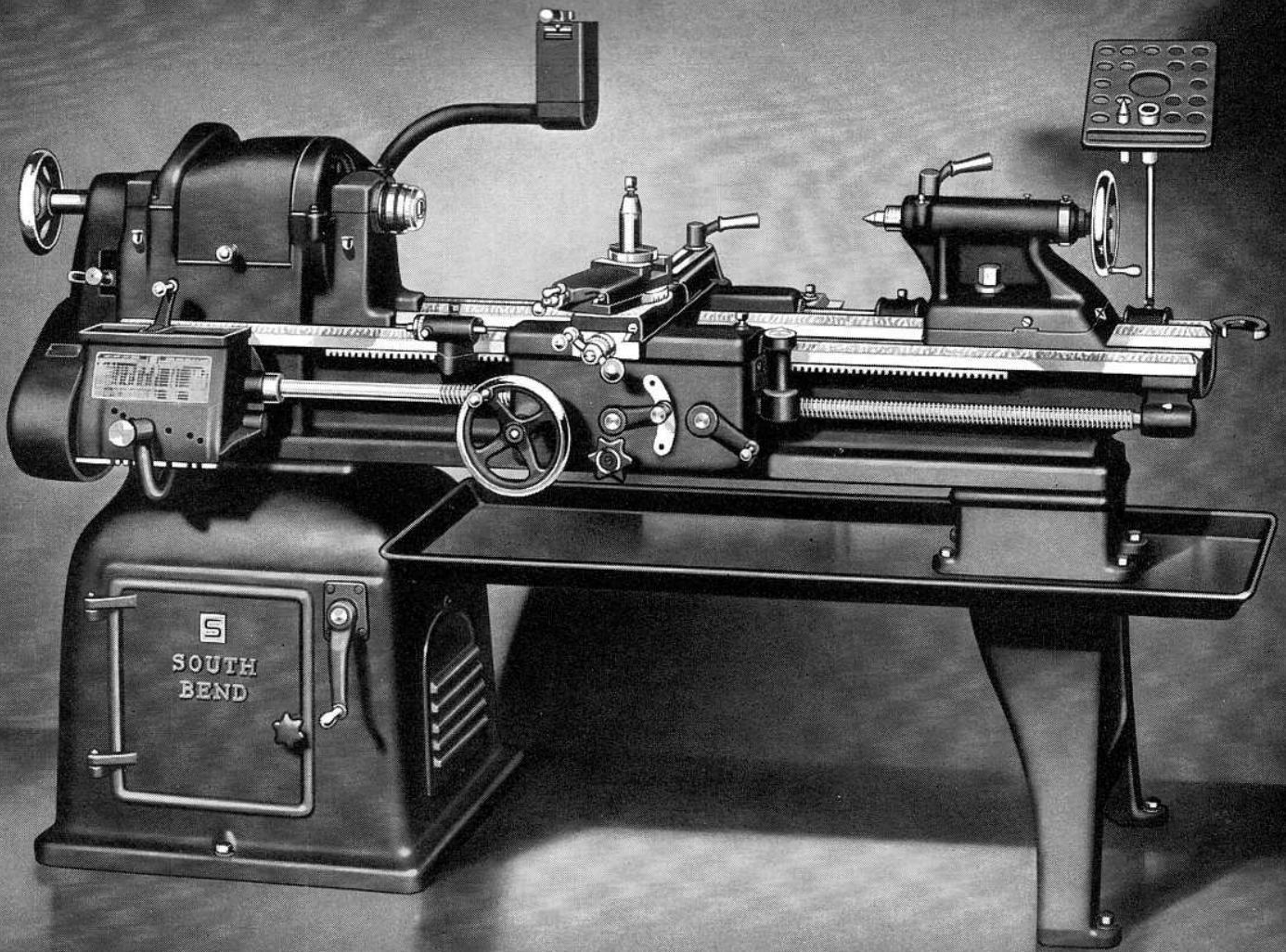
### Specifications of Lathes with Metric Lead Screws

Applying only to lathes ordered with metric lead screw and metric graduations.

Quick change gear lathe cuts 46 threads R.H. or L.H. . . . .	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H. . . . .	7.0 mm to 0.2 mm
Lead screw pitch . . . . .	4.0 mm
Cross feed screw pitch . . . . .	3.0 mm

For description of lathe features see pages 6 to 11

**14½"**  
LATHES



## 14 $\frac{1}{2}$ -inch Tool Room Precision Lathe—Series "S" Underneath Motor Drive—Back-Geared—Belt Drive to Spindle

14 $\frac{1}{2}$ "  
LATHES

The 14 $\frac{1}{2}$ -inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. Workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 20 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull, entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading mi-

rometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

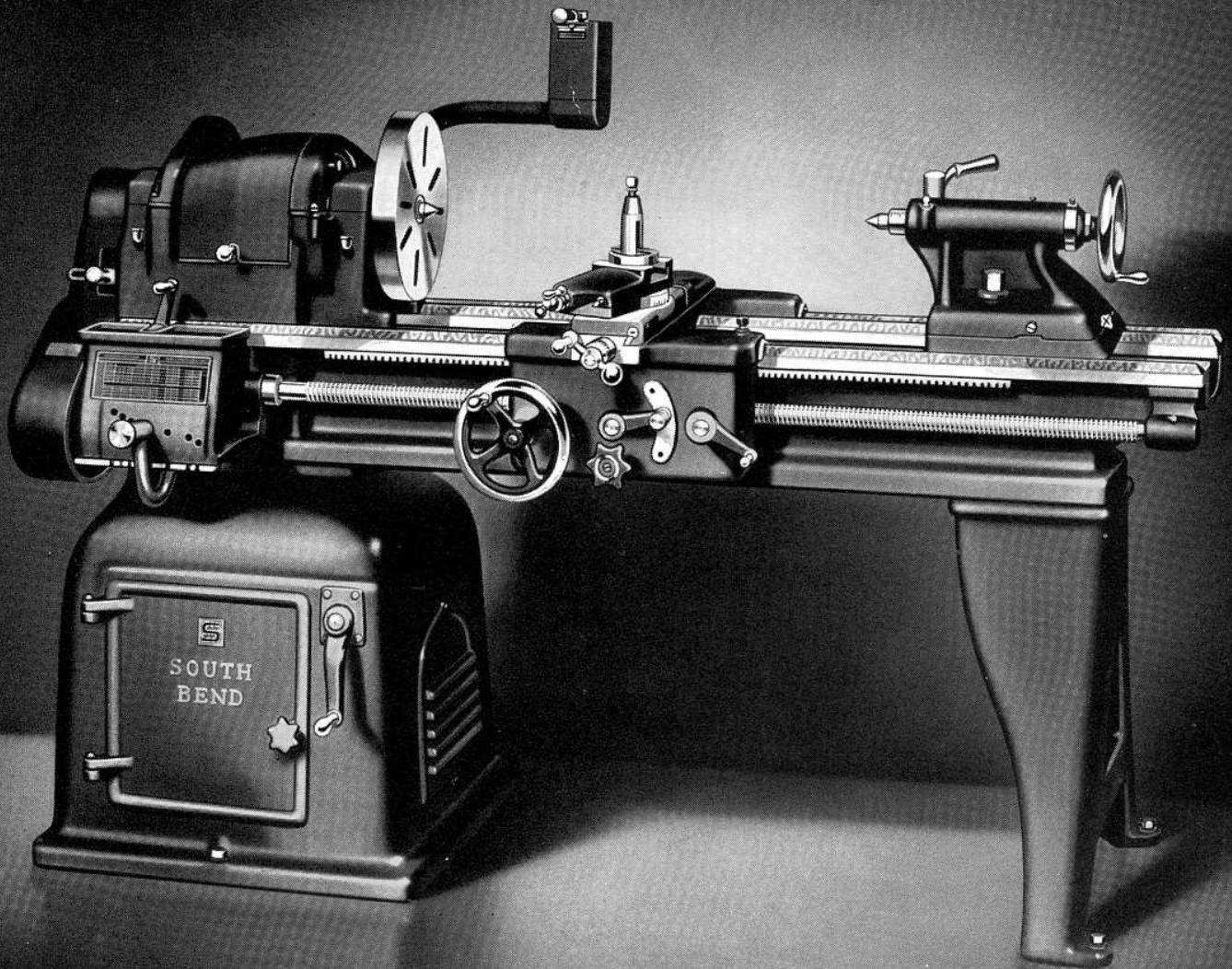
Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price of lathe consists of: 1 $\frac{1}{2}$  H.P. instant reversing motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

14 $\frac{1}{2}$ -inch Underneath Motor Driven Tool Room Lathes

Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers . . . . .	36 $\frac{1}{2}$ -in.	48 $\frac{1}{2}$ -in.	60 $\frac{1}{2}$ -in.
Catalog Number . . . . .	8183-C	8183-D	8183-E
Shipping Weight, Crated . . . . .	2255 lbs.	2330 lbs.	2405 lbs.
Code Word . . . . .	Boces	Bociw	Bocuh





## 14 1/2-in. Underneath Motor Driven Precision Lathe—Series "S"

Quick Change Gear Type—Back-Geared—Belt Drive to Spindle

14 1/2"  
LATHES

The 14 1/2-inch Quick Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. The full quick change gear box provides an unusually wide range of screw threads and power feeds.

The Underneath Motor Drive is entirely self-contained and fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

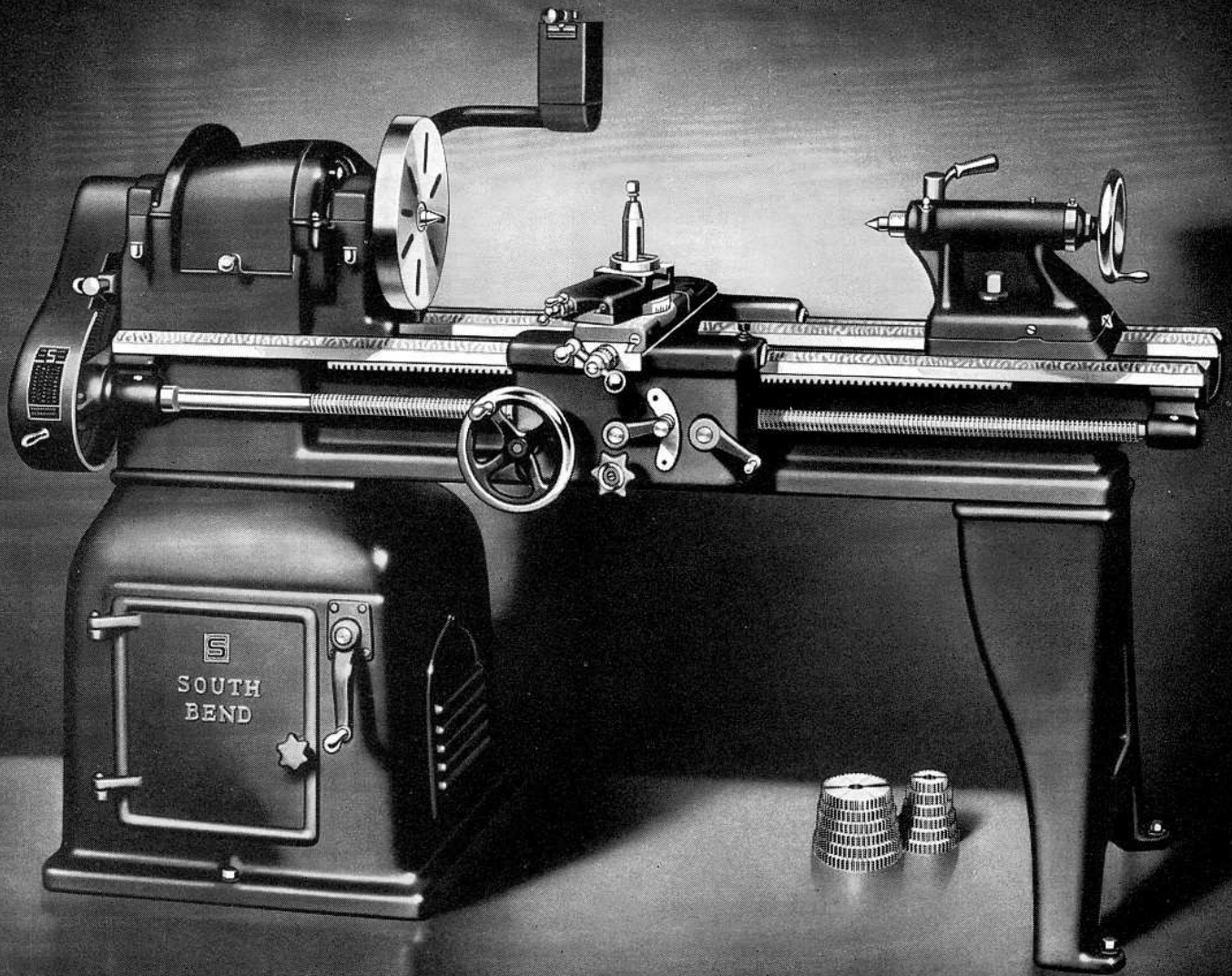
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 20 for complete specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 1/2 H.P. instant reversing motor; reversing switch; wiring for the switch, and motor; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

14 1/2-inch Quick Change Gear Underneath Motor Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers....	24 1/2-in.	36 1/2-in.	48 1/2-in.	60 1/2-in.	84 1/2-in.
Catalog Number.....	183-B	183-C	183-D	183-E	183-G
Shipping Weight, Crated.....	1995 lbs.	2070 lbs.	2145 lbs.	2225 lbs.	2390 lbs.
Code Word.....	Bediv	Bedom	Bulut	Buman	Bumer



## 14 1/2-in. Underneath Motor Driven Precision Lathe—Series "S"

Standard Change Gear Type—Back-Geared—Belt Drive to Spindle

14 1/2"  
LATHES

The 14 1/2-inch Standard Change Gear Lathe with underneath belt motor drive is recommended for production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 20 for complete specifications.

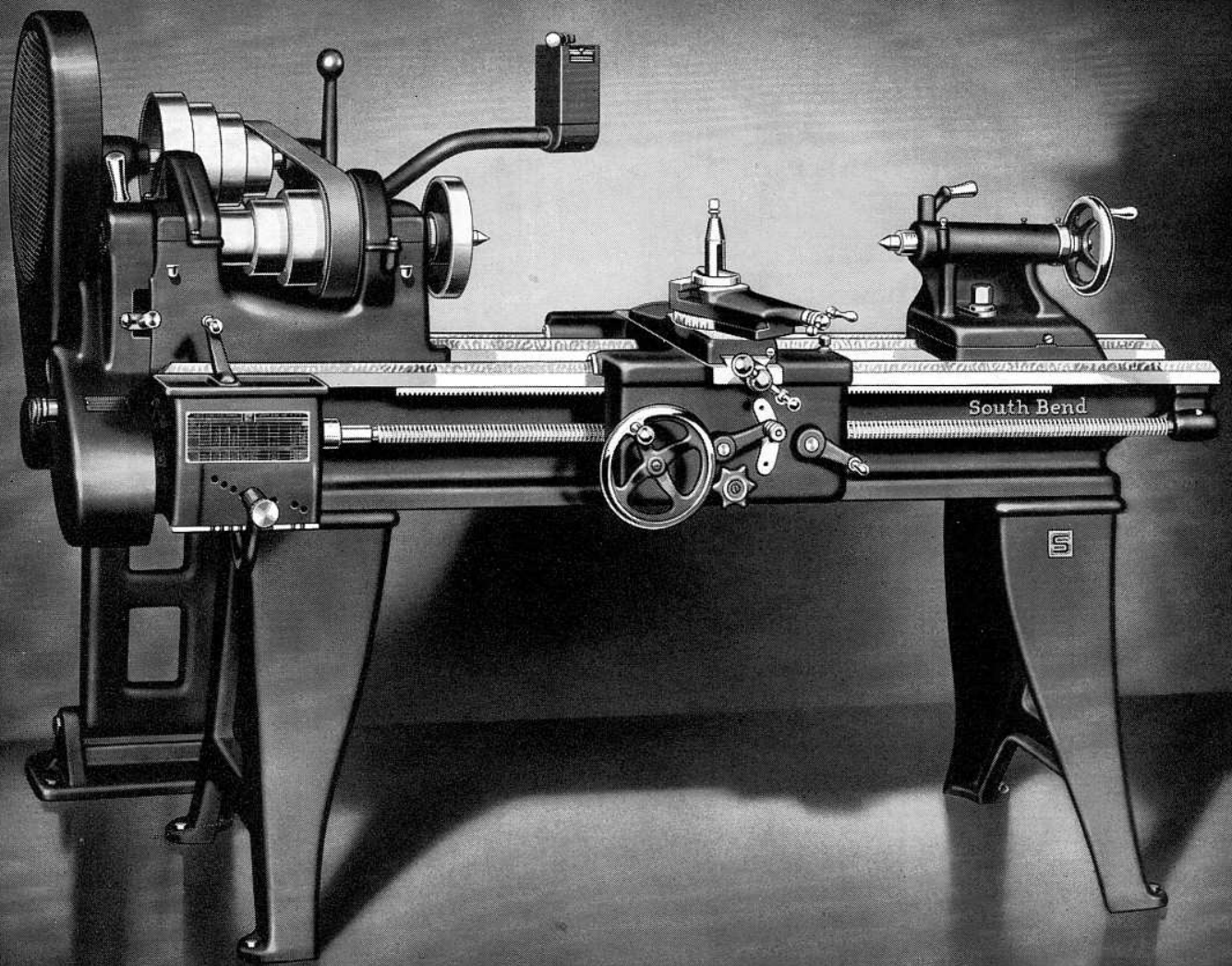
Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 1/2 H.P. instant reversing motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel spindle centers; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and book "How to Run a Lathe."

14 1/2-inch Standard Change Gear Underneath Motor Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers.....	24 1/4-in.	36 1/4-in.	48 1/4-in.	60 1/4-in.	84 1/4-in.
Catalog Number.....	178-B	178-C	178-D	178-E	178-G
Shipping Weight, Crated.....	1970 lbs.	2045 lbs.	2120 lbs.	2200 lbs.	2365 lbs.
Code Word.....	Bilal	Bilit	Biluf	Bizof	Bizas





## 14 1/2-inch Pedestal Motor Driven Precision Lathe—Series "S"

Quick Change Gear Type—Back-Geared—Belt Drive to Spindle

14 1/2"  
LATHES

The 14 1/2-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient, and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

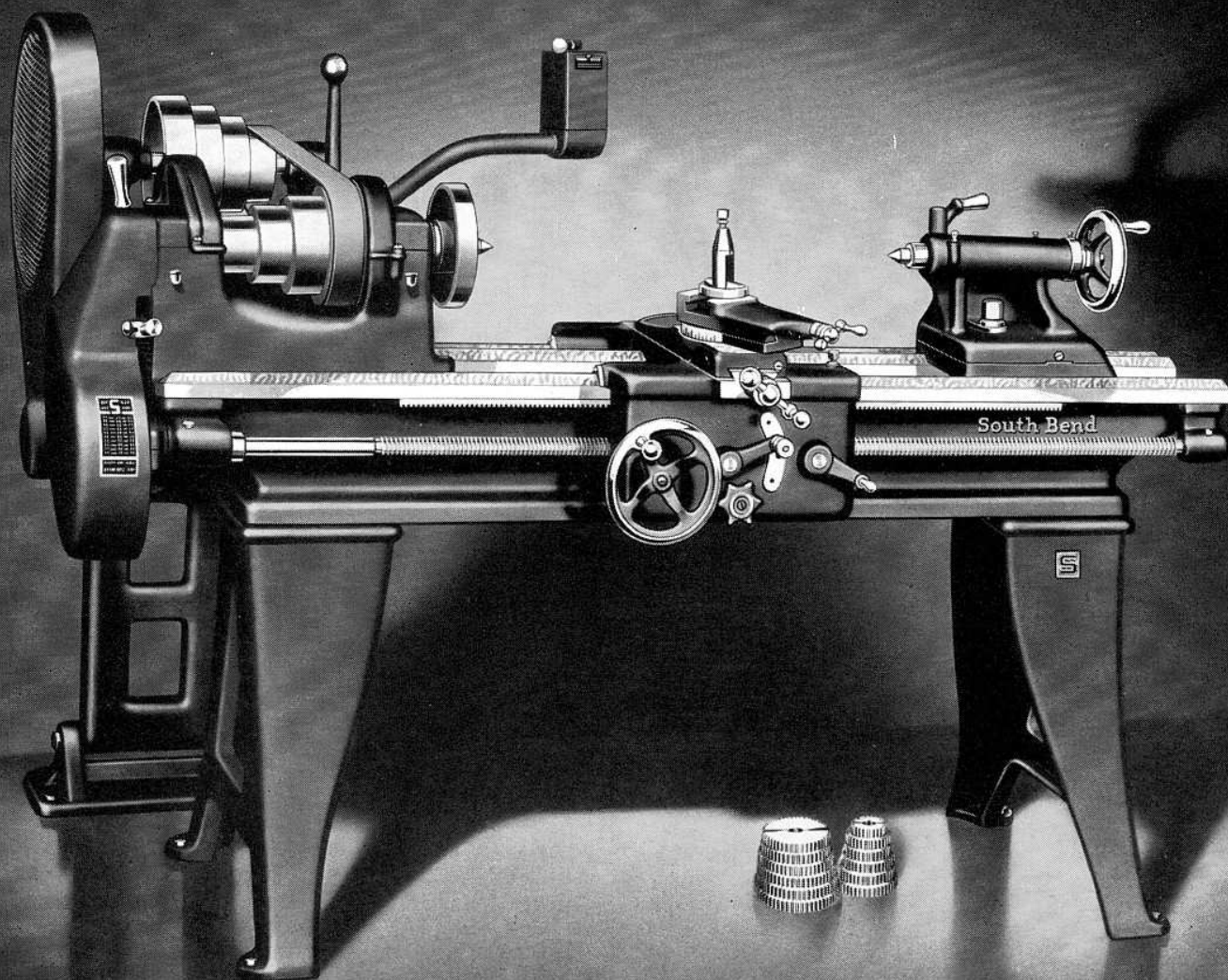
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 20 for specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 1/2 H.P. instant reversing motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

14 1/2-inch Quick Change Gear Pedestal Motor Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers . . .	24 1/4-in.	36 1/4-in.	48 1/4-in.	60 1/4-in.	84 1/4-in.
Catalog Number . . . . .	983-B	983-C	983-D	983-E	983-G
Shipping Weight, Crated . . . .	1735 lbs.	1810 lbs.	1885 lbs.	1965 lbs.	2130 lbs.
Code Word . . . . .	Golis	Goley	Goxuk	Gozar	Gozev



## 14 1/2-inch Pedestal Motor Driven Precision Lathe—Series "S" Standard Change Gear Type—Back-Geared—Belt Drive to Spindle

14 1/2"  
LATHES

The 14 1/2-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. Independent change gears, supplied with lathe, provide a wide range of right and left hand screw threads and power feeds.

The Pedestal Motor Drive is exceptionally convenient, and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 20 for specifications.

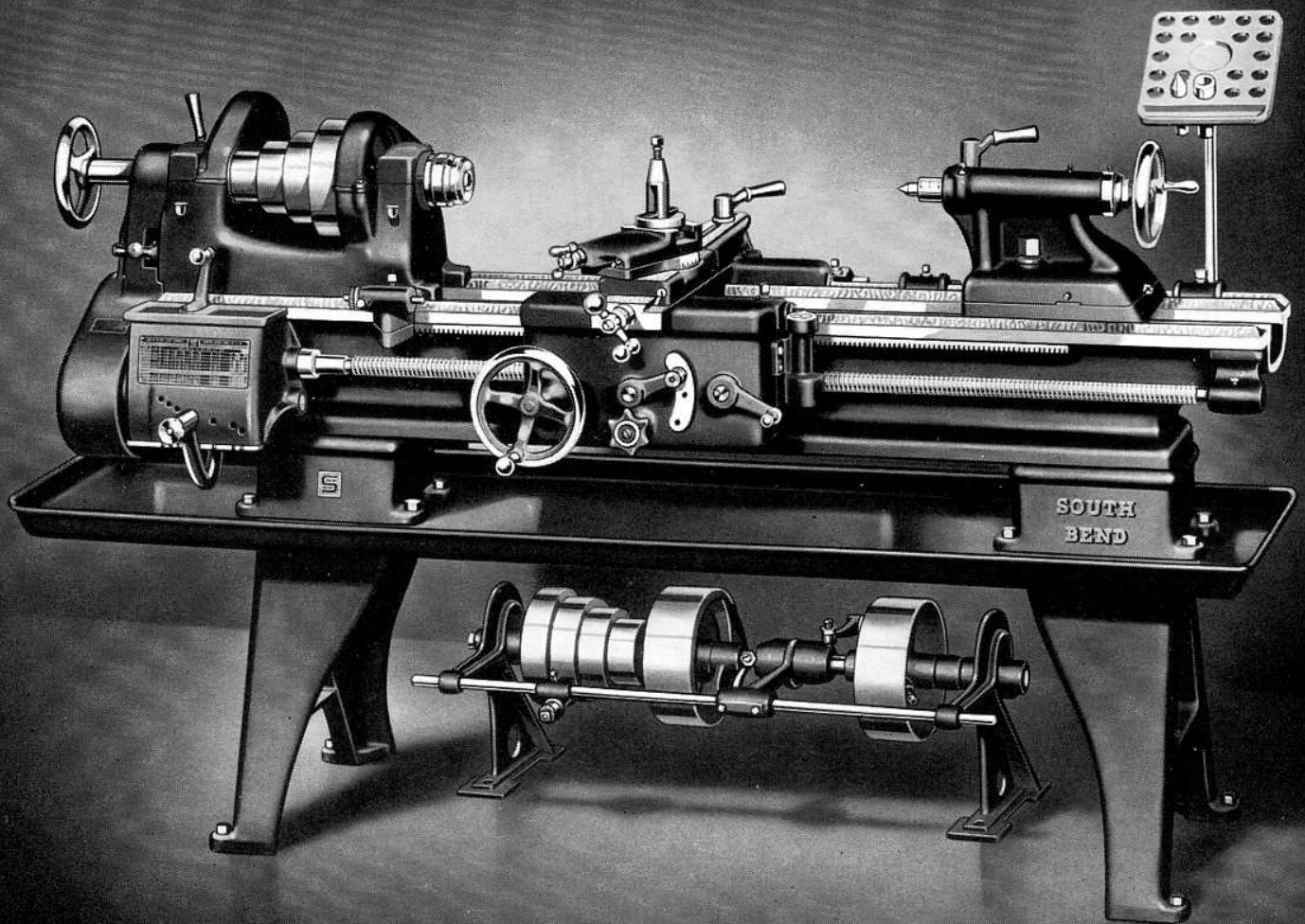
Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 1/2 H.P. instant reversing motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

14 1/2-inch Standard Change Gear Pedestal Motor Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers....	24 1/2-in.	36 1/2-in.	48 1/2-in.	60 1/2-in.	84 1/2-in.
Catalog Number.....	978-B	978-C	978-D	978-E	978-G
Shipping Weight, Crated.....	1710 lbs.	1785 lbs.	1860 lbs.	1940 lbs.	2105 lbs.
Code Word.....	Gigop	Gofah	Gokol	Gokur	Golak





## 14½-inch Tool Room Precision Lathe—Series "S" Countershaft Drive—Back-Geared—Belt Drive to Spindle

14½"  
LATHES

The 14½-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 20 for complete specifications of this lathe.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

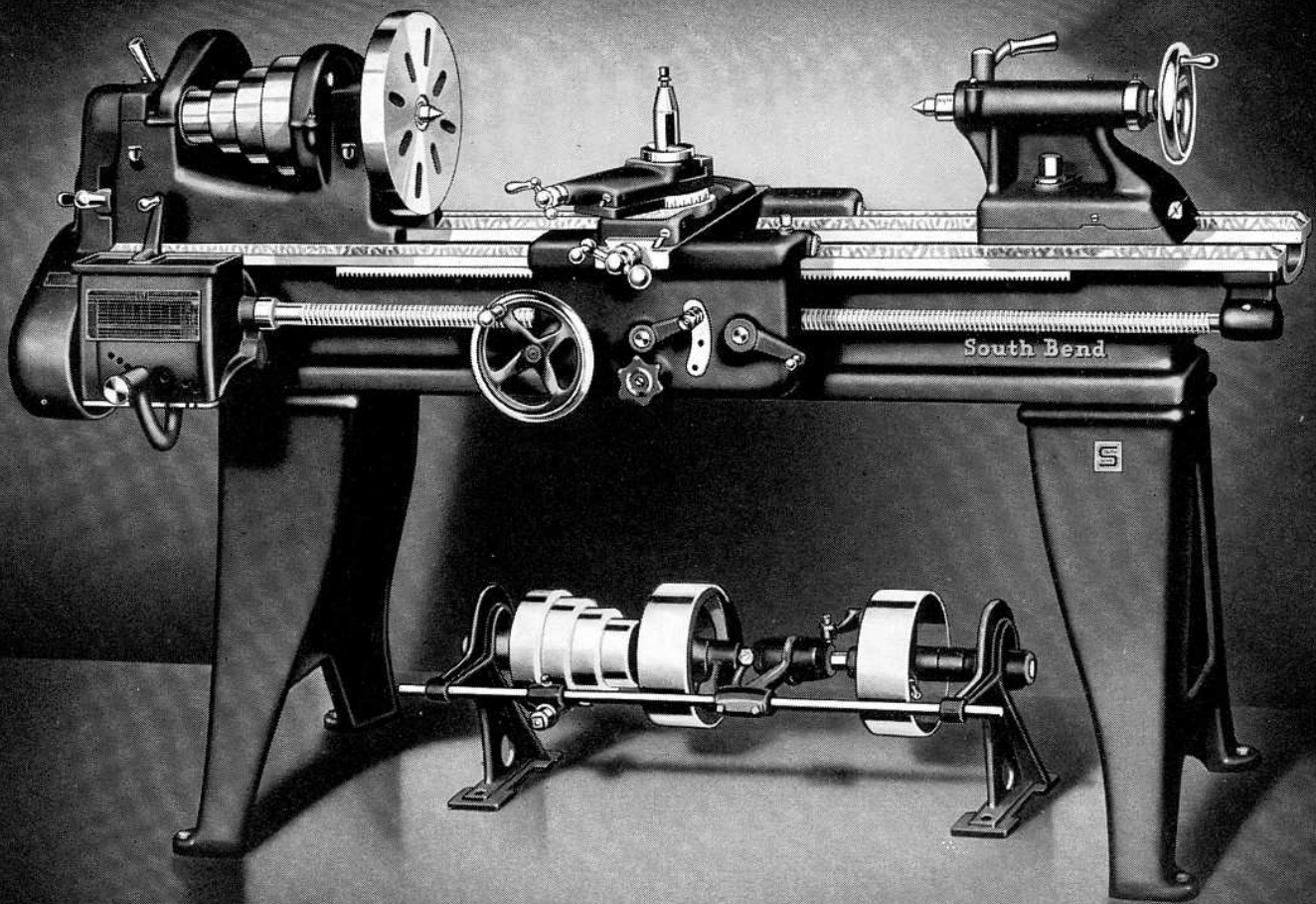
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading mi-

rometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

Tool Room Attachments included in price of this lathe consist of: hand wheel type collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; gear box; installation plan; and book "How to Run a Lathe."

14½-inch Countershaft Driven Tool Room Lathes			
Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers . . . . .	36½-in.	48½-in.	60½-in.
Catalog Number . . . . .	8083-C	8083-D	8083-E
Shipping Weight, Crated . . . . .	1900 lbs.	1980 lbs.	2060 lbs.
Code Word . . . . .	Tekoz	Tekub	Teluc



## 14 1/2-inch Countershaft Driven Precision Lathe—Series "S"

Quick Change and Standard Change Types—Back-Geared—Belt Drive to Spindle

**14 1/2"**  
LATHES

The 14 1/2-inch Lathe with Countershaft Drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants. See page 20 for specifications.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Eight spindle speeds forward and eight in reverse are available.

Improved Features include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog.

SOUTH BEND, INDIANA, U.S.A.

Regular Equipment included in price consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; spindle centers; spindle sleeve; wrenches; gear box or set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

### Quick Change Gear 14 1/2-inch Countershaft Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers.....	24 1/4-in.	36 1/4-in.	48 1/4-in.	60 1/4-in.	84 1/4-in.
Catalog Number.....	83-B	83-C	83-D	83-E	83-G
Shipping Weight, Crated.....	1575 lbs.	1650 lbs.	1725 lbs.	1805 lbs.	1970 lbs.
Code Word.....	Tapub	Tatec	Tatog	Tavac	Tawad

### Standard Change Gear 14 1/2-inch Countershaft Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers.....	24 1/4-in.	36 1/4-in.	48 1/4-in.	60 1/4-in.	84 1/4-in.
Catalog Number.....	78-B	78-C	78-D	78-E	78-G
Shipping Weight, Crated.....	1550 lbs.	1625 lbs.	1700 lbs.	1780 lbs.	1945 lbs.
Code Word.....	Tajos	Tamiv	Tamux	Tanoy	Tapoz



# 13-inch South Bend Precision Lathes—Series "S"

*Specifications Apply to all 13-inch Lathes Shown in This Catalog*

All types of 13-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage, and bed. The only difference between the various models of lathes is in the type of drive, and the equipment supplied.

## Capacity of Lathe

Swing over bed and saddle wings . . . . .	13 $\frac{1}{8}$ "
Swing over saddle with chip guard removed . . . . .	8 $\frac{3}{4}$ "
Swing over saddle with chip guard . . . . .	7 $\frac{3}{4}$ "

## Spindle Speeds

Standard spindle speeds (subject to 5% variation)	
R.P.M. of spindle, direct belt driven . . . . .	875, 567, 373, 239
R.P.M. of spindle, back gears engaged . . . . .	128, 81, 54, 34
Higher spindle speeds can be supplied to order. Price on request.	

## Threads and Feeds

Thread cutting range	
Quick Change gear lathe—48 threads R.H. or L.H. . . . .	4 to 224 per inch
Standard Change gear lathe—45 threads R.H. or L.H. . . . .	4 to 160 per inch
Longitudinal feeds through friction clutch	
Quick Change gear lathe—48 feeds R.H. or L.H. . . . .	.0015" to .0841"
Standard Change gear lathe—26 feeds R.H. or L.H. . . . .	.0021" to .0153"
Cross feeds through friction clutch	
Quick Change gear lathe—48 feeds . . . . .	.0006" to .0312"
Standard Change gear lathe—26 feeds . . . . .	.0008" to .0057"
Lead screw, 29° Acme thread . . . . .	1" Diam.—6 Thrds.

## Headstock

Hole through spindle . . . . .	1"
Maximum collet capacity* . . . . .	1 $\frac{11}{16}$ "
Spindle nose diameter and threads per inch . . . . .	1 $\frac{7}{8}$ "-8
Size of Center, Morse taper . . . . .	No. 3
Width of cone pulley step for belt . . . . .	1 $\frac{3}{4}$ "
Large face plate diameter . . . . .	10 $\frac{3}{4}$ "
Small face plate diameter . . . . .	6 $\frac{5}{8}$ "
Spindle bearings are cast integral with headstock.	
Front spindle bearing, diameter . . . . .	2 $\frac{1}{4}$ "

## Compound Rest

Cross slide will travel . . . . .	8 $\frac{1}{8}$ "
Angular hand feed of compound rest top slide . . . . .	3 $\frac{1}{8}$ "

## Tool Post

Size of tool holder shank . . . . .	1/2" x 1 1/8"
Size of cutter bits tool holder takes . . . . .	5/16" sq.

## Tailstock

Size of Morse taper centers . . . . .	No. 3
Spindle travel . . . . .	4 $\frac{1}{4}$ "
Each graduation on tailstock spindle advances spindle . . . . .	1/16"
Tailstock top will set over for taper turning . . . . .	15/16"

## Motor

Standard size of motor supplied with each 13-inch motor driven lathe . . . . .	1 H.P.
Standard motors as listed with lathes shown in this catalog: 1-phase, 50 or 60 cycle, 115 or 230 volt; 3-phase, 50/60 cycle, 220, 440, or 550 volt; D.C., 115 or 230 volt. Special motors supplied to order. Prices of lathes with special motors will be quoted on request.	

### Specifications of Lathes with Metric Lead Screws

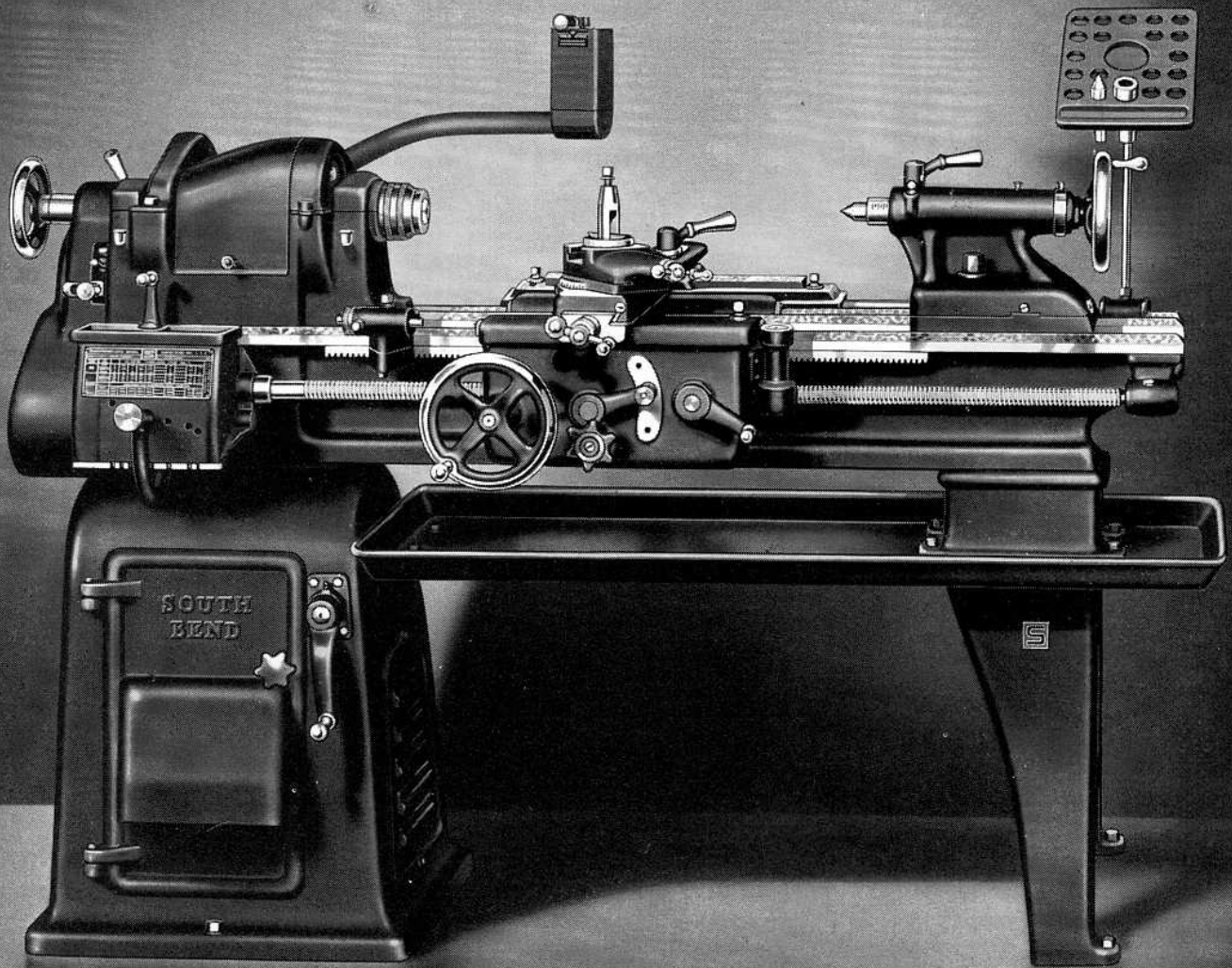
Applying only to lathes ordered with metric lead screw and metric graduations.

Quick change gear lathe cuts 46 threads R.H. or L.H. . . . .	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H. . . . .	7.0 mm to 0.2 mm
Lead screw pitch . . . . .	4.0 mm
Cross feed screw pitch . . . . .	3.0 mm

\*Collets for 13" Lathes are interchangeable with collets for 10"—1 $\frac{11}{16}$ " Collet Capacity Lathes. Draw-in Collet Chuck Attachment is not interchangeable.

For description of lathe features see pages 6 to 11

**13"**  
LATHES



## 13-inch Tool Room Precision Lathe—Series "S"

Underneath Motor Drive—Back-Geared—Belt Drive to Spindle

The 13-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 28 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull, entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading mi-

chrometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

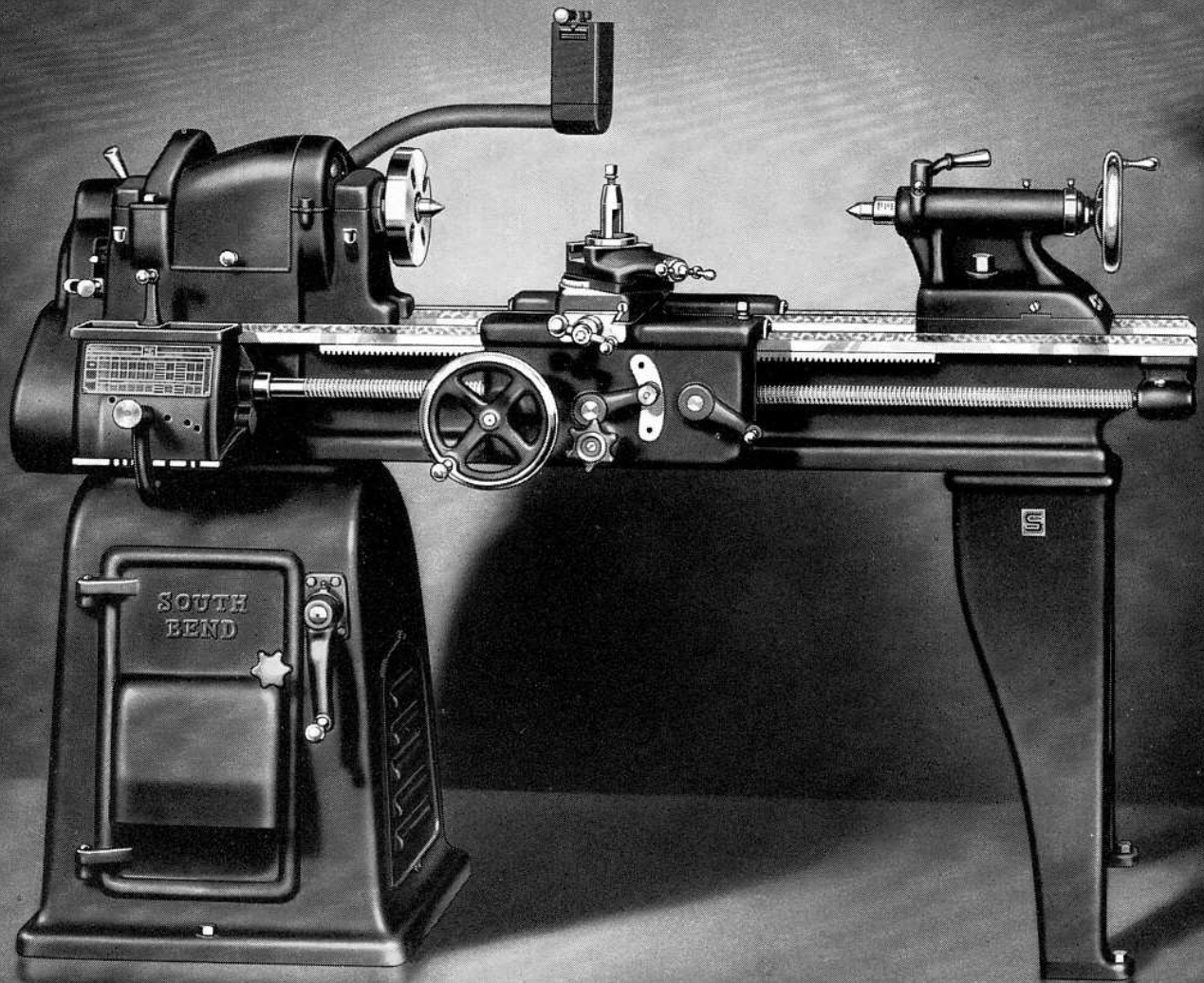
Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price consists of: 1 H. P. instant reversing motor; reversing switch; wiring; 2 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

13-inch Underneath Motor Driven Tool Room Lathes

Bed Length	5-ft.	6-ft.	7-ft.
Distance Between Centers.....	28-in.	40-in.	52-in.
Catalog Number.....	8113-B	8113-C	8113-D
Shipping Weight, Crated.....	1665 lbs.	1715 lbs.	1770 lbs.
Code Word.....	Balbu	Balex	Bapid





## 13-inch Underneath Motor Driven Precision Lathe—Series "S" Quick Change Gear Type—Back-Geared—Belt Drive to Spindle

13"  
LATHES

The 13-inch Quick Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. The full quick change gear box provides an unusually wide range of screw threads and power feeds.

The Underneath Motor Drive is entirely self-contained and fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

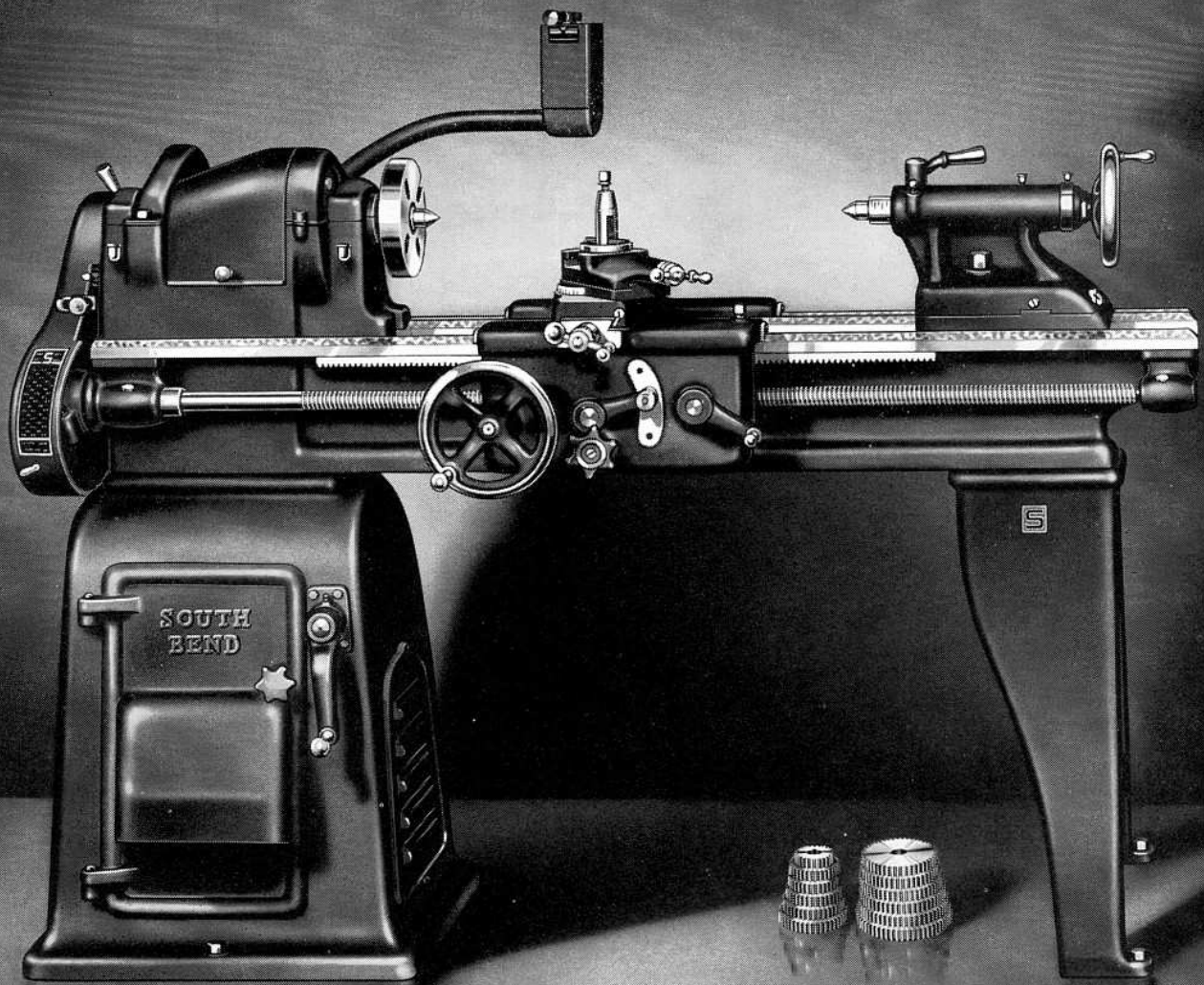
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 28 for complete specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 H.P. instant reversing motor; reversing switch; wiring for the switch, and motor; 2 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

13-inch Quick Change Gear Underneath Motor Driven Lathes

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers . . . . .	16-in.	28-in.	40-in.	52-in.
Catalog Number . . . . .	113-A	113-B	113-C	113-D
Shipping Weight, Crated . . . . .	1460 lbs.	1510 lbs.	1560 lbs.	1615 lbs.
Code Word . . . . .	Becka	Becono	Bedme	Besec



## 13-inch Underneath Motor Driven Precision Lathe—Series "S" Standard Change Gear Type—Back-Geared—Belt Drive to Spindle

The 13-inch Standard Change Gear Lathe with underneath belt motor drive is recommended for production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 28 for complete specifications.

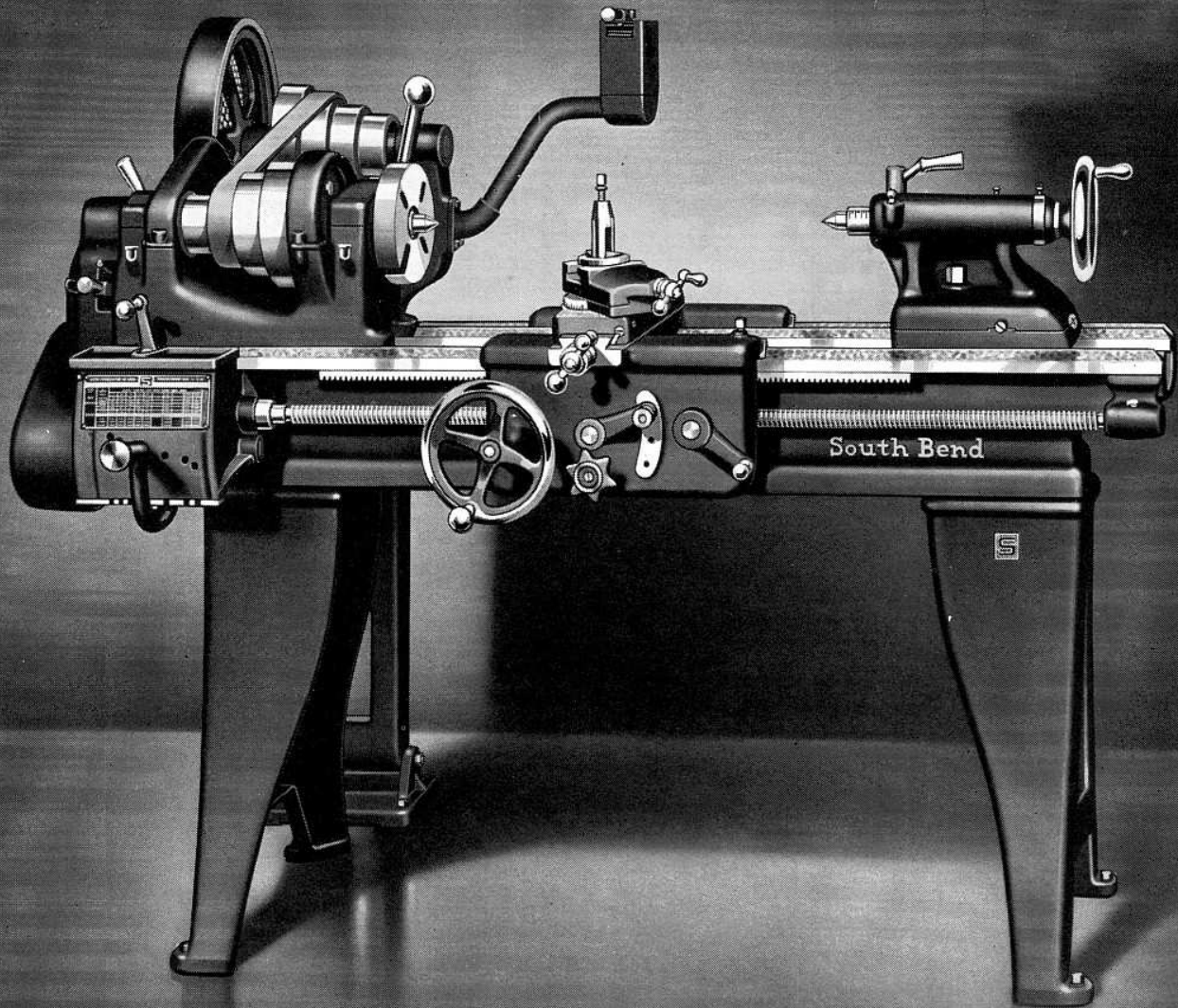
Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 H.P. instant reversing motor; reversing switch; wiring; 2 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel spindle centers; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and book "How to Run a Lathe."

13-inch Standard Change Gear Underneath Motor Driven Lathes

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers . . . . .	16-in.	28-in.	40-in.	52-in.
Catalog Number . . . . .	112-A	112-B	112-C	112-D
Shipping Weight, Crated . . . . .	1440 lbs.	1490 lbs.	1540 lbs.	1595 lbs.
Code Word . . . . .	Betat	Bacik	Bacmo	Badap





## 13-inch Pedestal Motor Driven Precision Lathe—Series "S" Quick Change Gear Type—Back-Geared—Belt Drive to Spindle

The 13-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient, and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

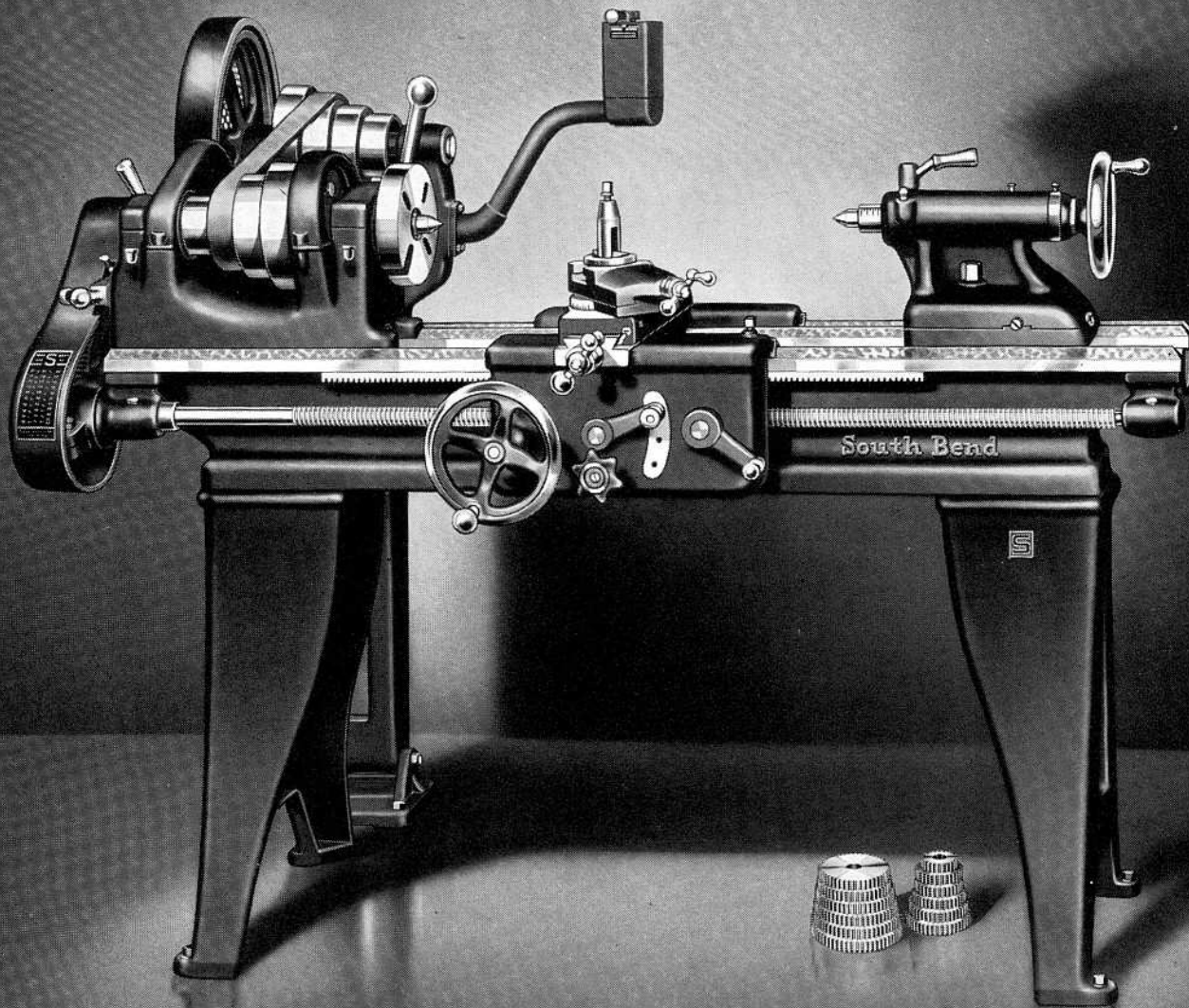
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 28 for specifications.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 H.P. instant reversing motor; reversing switch; wiring; 2 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

13-inch Quick Change Gear Pedestal Motor Driven Lathes

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers.....	16-in.	28-in.	40-in.	52-in.
Catalog Number.....	913-A	913-B	913-C	913-D
Shipping Weight, Crated.....	1205 lbs.	1255 lbs.	1305 lbs.	1360 lbs.
Code Word.....	Repec	Ravel	Roser	Robog



## 13-inch Pedestal Motor Driven Precision Lathe—Series "S" Standard Change Gear Type—Back-Geared—Belt Drive to Spindle

The 13-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. Independent change gears, supplied with lathe, provide a wide range of right and left hand screw threads and power feeds.

The Pedestal Motor Drive is exceptionally convenient, and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed. See page 28 for specifications.

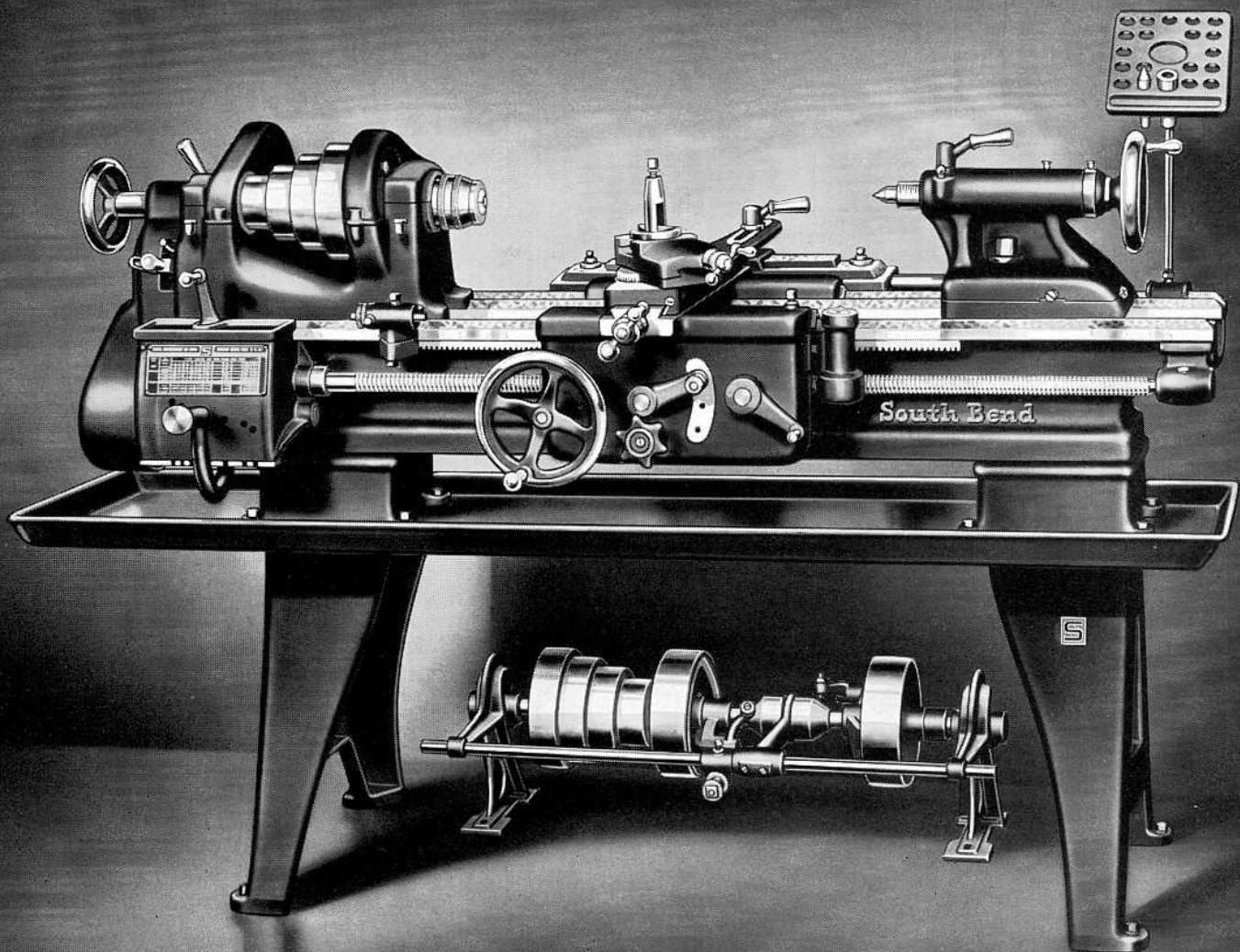
Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 1 H.P. instant reversing motor; reversing switch; wiring; 2 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 3 Morse taper tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

13-inch Standard Change Gear Pedestal Motor Driven Lathes

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers .....	16-in.	28-in.	40-in.	52-in.
Catalog Number .....	912-A	912-B	912-C	912-D
Shipping Weight, Crated .....	1185 lbs.	1235 lbs.	1285 lbs.	1340 lbs.
Code Word .....	Raxib	Rolex	Rezob	Rimoy





## 13-inch Tool Room Precision Lathe—Series "S" Countershaft Drive—Back-Geared—Belt Drive to Spindle

13"  
LATHES

The 13-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 28 for complete specifications of this lathe.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading mi-

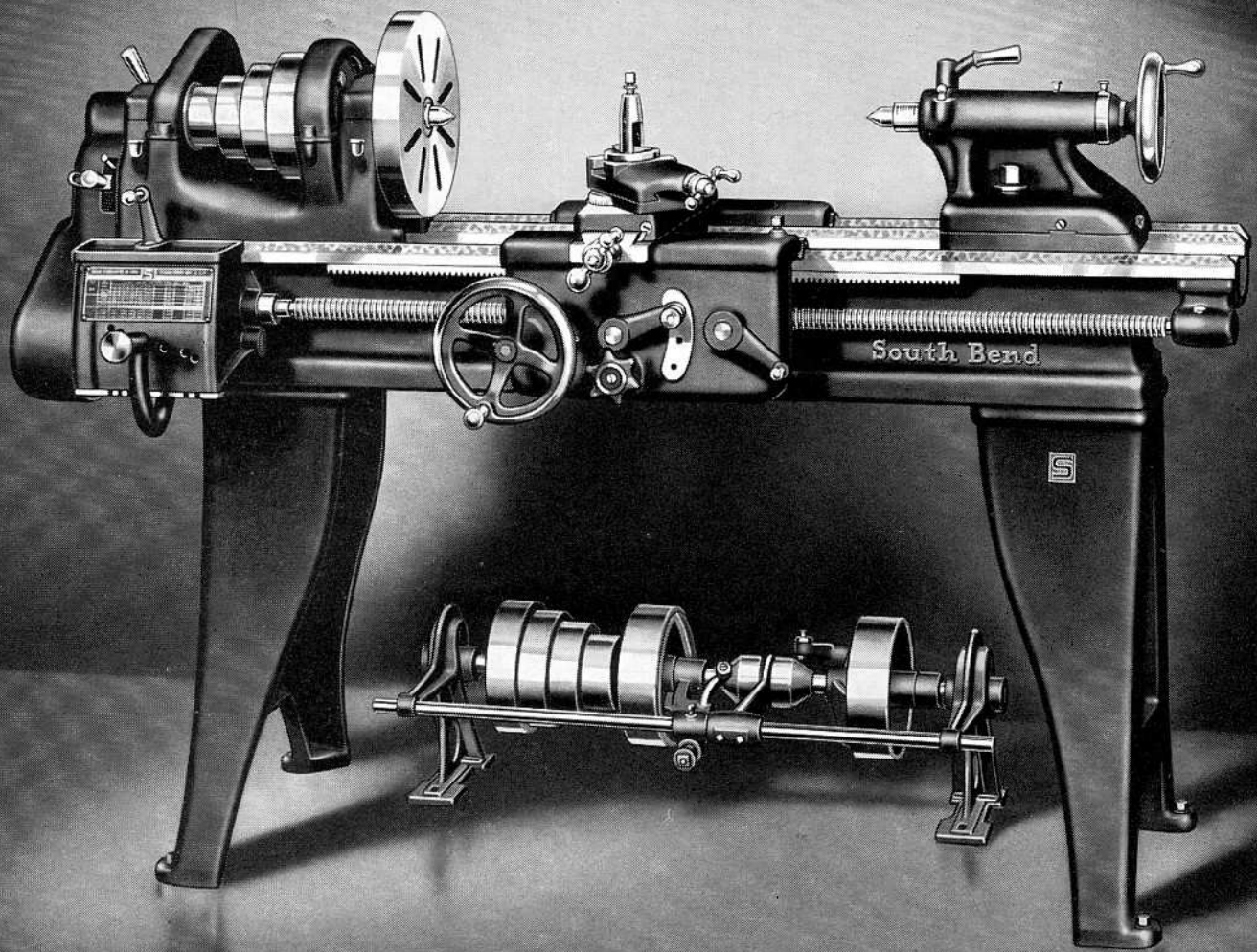
rometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

Tool Room Attachments included in price of this lathe consist of: hand wheel type collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; gear box; installation plan; and book "How to Run a Lathe."

13-inch Countershaft Driven Tool Room Lathes

Bed Length	5-ft.	6-ft.	7-ft.
Distance Between Centers . . . . .	28-in.	40-in.	52-in.
Catalog Number . . . . .	8013-B	8013-C	8013-D
Shipping Weight, Crated . . . . .	1290 lbs.	1340 lbs.	1395 lbs.
Code Word . . . . .	Arnun	Artut	Asynh



## 13-inch Countershaft Driven Precision Lathe—Series "S"

Quick Change and Standard Change Types—Back-Geared—Belt Drive to Spindle

The 13-inch Lathe with Countershaft Drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants. See page 28 for specifications.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Eight spindle speeds forward and eight in reverse are available.

Improved Features include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog.

SOUTH BEND, INDIANA, U.S.A.

Regular Equipment included in price consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; spindle centers; spindle sleeve; wrenches; gear box or set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

13"  
LATHES

### Quick Change Gear 13-inch Countershaft Driven Lathes

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers . . . . .	16-in.	28-in.	40-in.	52-in.
Catalog Number . . . . .	13-A	13-B	13-C	13-D
Shipping Weight, Crated . . . . .	1060 lbs.	1110 lbs.	1160 lbs.	1215 lbs.
Code Word . . . . .	Altek	Altil	Altom	Alvak

### Standard Change Gear 13-inch Countershaft Driven Lathes

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers . . . . .	16-in.	28-in.	40-in.	52-in.
Catalog Number . . . . .	12-A	12-B	12-C	12-D
Shipping Weight, Crated . . . . .	1040 lbs.	1090 lbs.	1140 lbs.	1195 lbs.
Code Word . . . . .	Anvid	Anwif	Anwog	Apcog



# 10-11/16" Collet Capacity Precision Lathes-Series "S"

Specifications Apply to all 10-inch 11/16" Collet Lathes in this Catalog

All types of 10-inch 11/16" Collet lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage, and bed. The only difference between the various models of lathes is in the type of drive, and the equipment supplied.

## Capacity of Lathe

Swing over bed and saddle wings . . . . .	10 1/8"
Swing over saddle with chip guard removed . . . . .	6 3/4"
Swing over saddle with chip guard . . . . .	5 7/8"

## Spindle Speeds (subject to 5% variation)

Standard spindle speeds	
R.P.M. of spindle, direct belt driven . . . . .	700, 434, 277
R.P.M. of spindle, back gears engaged . . . . .	129, 79, 50
High spindle speeds in addition to standard spindle speeds (using two step pulley on motor, optional at extra cost)	
R.P.M. of spindle, direct belt driven . . . . .	1357, 837, 535
R.P.M. of spindle, back gears engaged . . . . .	248, 153, 97

## Threads and Feeds

Thread cutting range	
Quick Change gear lathe—48 threads R.H. or L.H. . . . .	4 to 224 per inch
Standard Change gear lathe—45 threads R.H. or L.H. . . . .	4 to 160 per inch
Longitudinal feeds through friction clutch	
Quick Change gear lathe—48 feeds R.H. or L.H. . . . .	.0015" to .0836"
Standard Change gear lathe—26 feeds R.H. or L.H. . . . .	.0021" to .0152"
Cross feeds through friction clutch	
Quick Change gear lathe—48 feeds . . . . .	.0006" to .0309"
Standard Change gear lathe—26 feeds . . . . .	.0008" to .0056"
Lead screw, 29° Acme thread . . . . .	3/4" Diam., 8 Threads

## Headstock

Hole through spindle . . . . .	1"
Maximum collet capacity* . . . . .	1 1/16"
Size of center, Morse taper . . . . .	No. 2
Spindle nose diameter and threads per inch . . . . .	1 7/8"-8
Width of cone pulley step for belt . . . . .	1 5/16"
Large face plate diameter . . . . .	8 3/8" Small face plate diameter . . . . .
Large bearing, diameter and length . . . . .	2 1/4" x 2 3/16"
Small bearing, diameter and length . . . . .	1 7/8" x 1 1/4"
Spindle bearings are cast integral with headstock.	

## Compound Rest

Cross slide will travel . . . . .	5 7/8"
Angular hand feed of compound rest top slide . . . . .	2"

## Tool Post

Opening to receive tool holder shank, size . . . . .	3/8" x 1 3/16"
Size of cutter bits tool holder takes . . . . .	1/4" sq.

## Tailstock

Size of Morse taper centers . . . . .	No. 2
Spindle travel . . . . .	2 1/8"
Each graduation on tailstock spindle advances spindle . . . . .	1/16"
Tailstock top will set over for taper turning . . . . .	3/4"

## Motor

Standard size of motor supplied with 10-inch 1 1/16" collet motor driven lathes . . . . .	1/2 H.P.
Standard motors as listed with lathes shown in this catalog: 1-phase, 50 or 60 cycle, 115 or 230 volt; 3-phase, 50/60 cycle, 220, 440, or 550 volt; D.C., 115 or 230 volt. Special motors supplied to order. Prices of lathes with special motors will be quoted on request.	

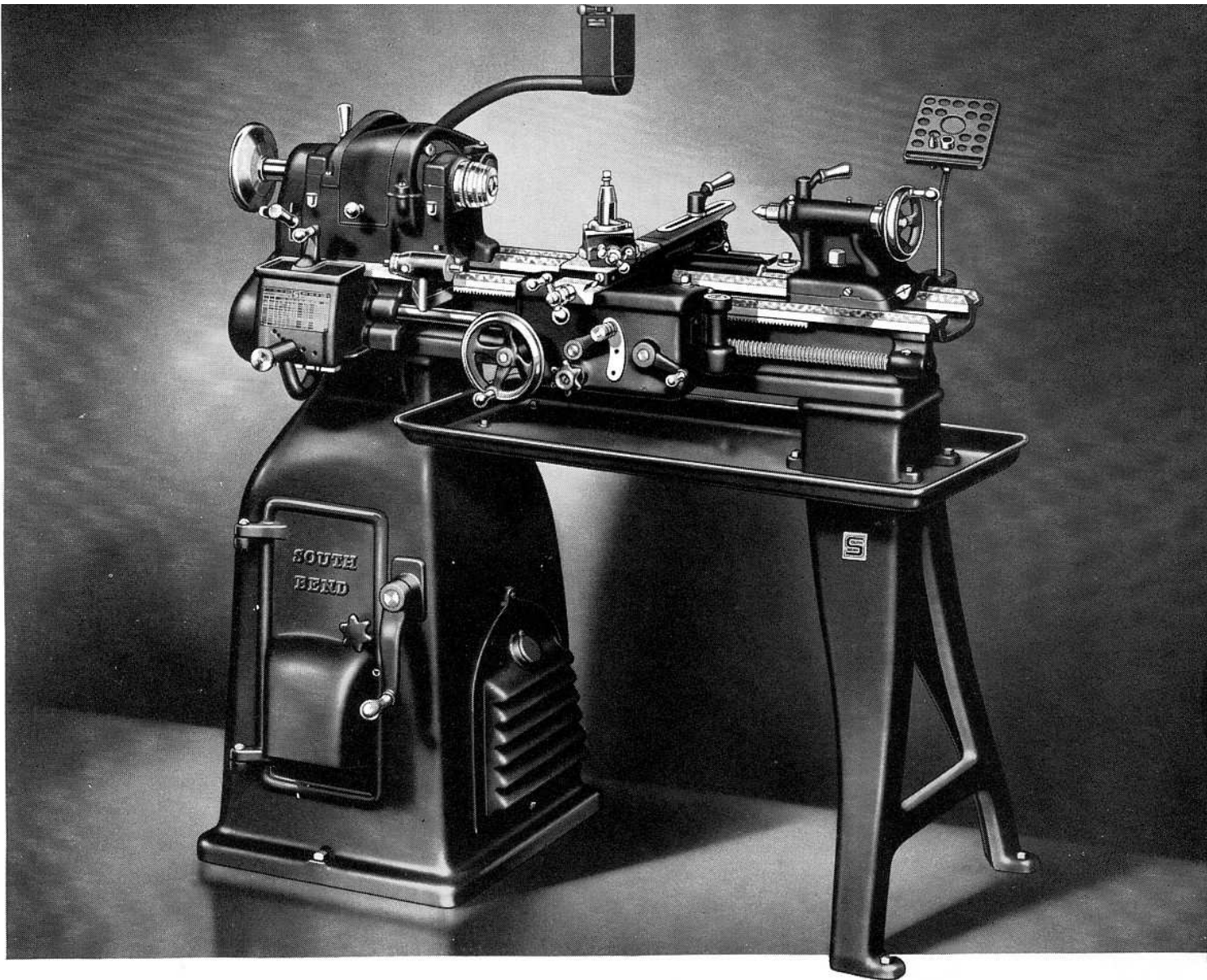
## Specifications of Lathes with Metric Lead Screws

Applying only to lathes ordered with metric lead screw and metric graduations.

Quick change gear lathe cuts 46 threads R.H. or L.H. . . . .	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H. . . . .	7.0 mm to 0.2 mm
Lead screw pitch . . . . .	3.0 mm Cross feed screw pitch . . . . .
	2.5 mm

\*Collets for 10-inch 1 1/16" Collet Lathes are interchangeable with collets for 13-inch Lathes. Draw-in Collet Chuck Attachment is not interchangeable.

For description of lathe features see pages 6 to 11



## 10-inch $1\frac{1}{16}$ " Collet Tool Room Precision Lathe

Series "S"—Underneath Motor Driven—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $1\frac{1}{16}$ " Collet Capacity Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 36 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating

automatic feeds; easy reading micrometer graduated collars; quick change gear box; semi-steel lathe bed.

Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

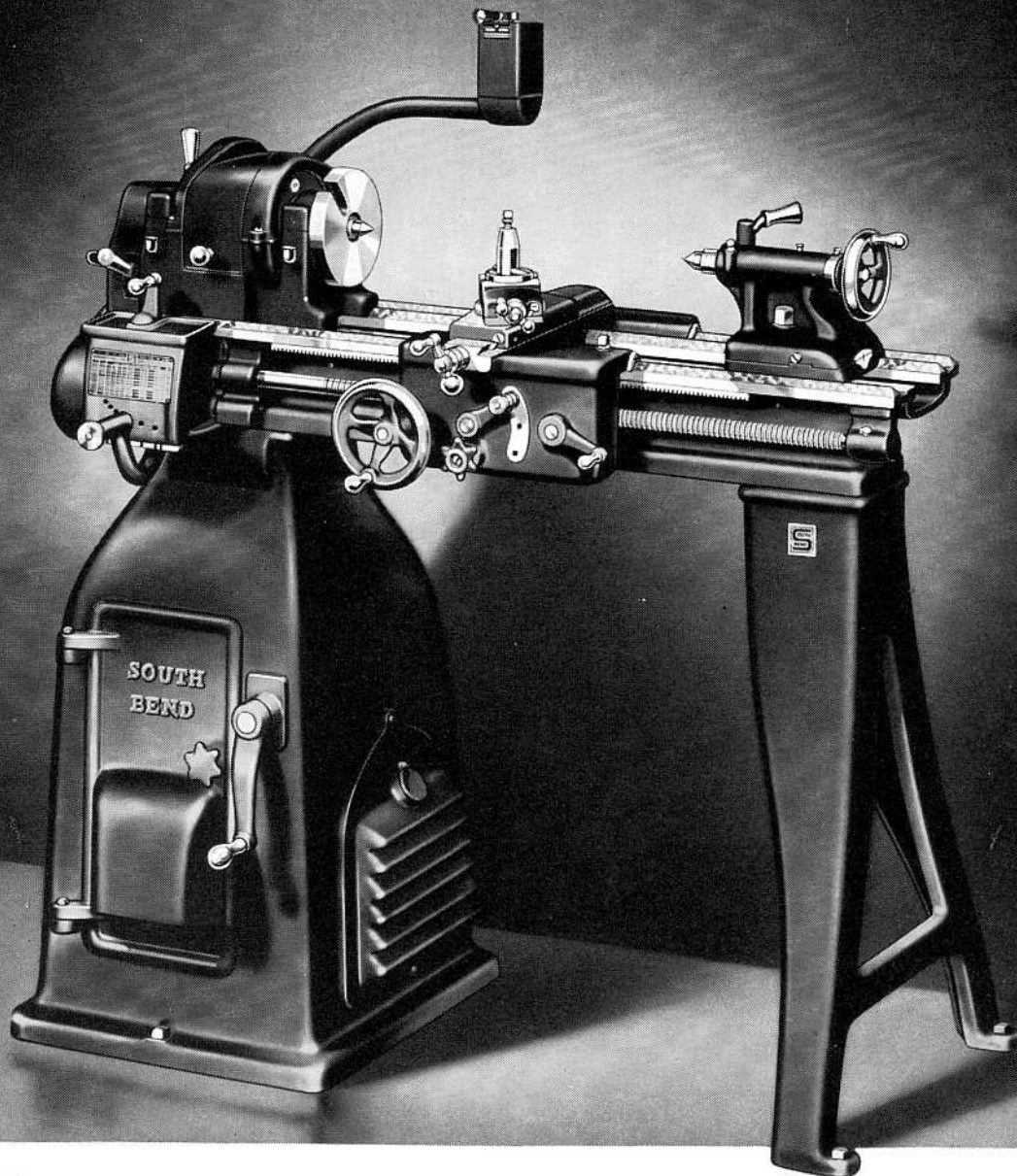
Regular Equipment included in price of lathe consists of:  $\frac{1}{2}$  H.P. instant reversing motor; reversing switch; wiring; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

10-inch  $1\frac{1}{16}$ " Collet Tool Room Lathes  
Underneath Motor Driven—with Floor Legs

Bed Length	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.
Distance Between Centers.....	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.
Catalog Number.....	8199-Y	8199-Z	8199-A
Shipping Weight, Crated.....	915 lbs.	940 lbs.	965 lbs.
Code Word.....	Bidah	Bidek	Bidon

10"  $1\frac{1}{16}$ " COLLET LATHES





## 10"-11<sup>1</sup>/<sub>16</sub>" Collet Underneath Motor Driven Precision Lathe Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1<sup>1</sup>/<sub>16</sub>" Collet Capacity Quick Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. The quick change gear box provides an unusually wide range of right and left hand screw threads and power feeds. See page 36.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars;

quick change gear box for threads and feeds; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of this catalog.

Regular Equipment included in price of lathe consists of: 1/2 H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindle; spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

10-inch 1<sup>1</sup>/<sub>16</sub>" Collet Underneath Motor Driven Lathes  
Quick Change Gear—with Floor Legs

Bed Length	3-ft.	3 <sup>1</sup> / <sub>2</sub> -ft.	4-ft.	4 <sup>1</sup> / <sub>2</sub> -ft.
Distance Between Centers . . .	15 <sup>3</sup> / <sub>4</sub> -in.	20 <sup>3</sup> / <sub>4</sub> -in.	26 <sup>3</sup> / <sub>4</sub> -in.	33 <sup>3</sup> / <sub>4</sub> -in.
Catalog Number . . . . .	199-Y	199-Z	199-A	199-R
Shipping Weight, Crated . . . .	790 lbs.	815 lbs.	840 lbs.	865 lbs.
Code Word . . . . .	Binam	Binec	Bixeg	Bixuk

10" 1<sup>1</sup>/<sub>16</sub>" COLLET LATHES



## 10"-11/16" Collet Underneath Motor Driven Precision Lathe

### Series "S"—Standard Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 11/16" Collet Capacity Standard Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 36 for specifications.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. Belt drive to spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal

feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

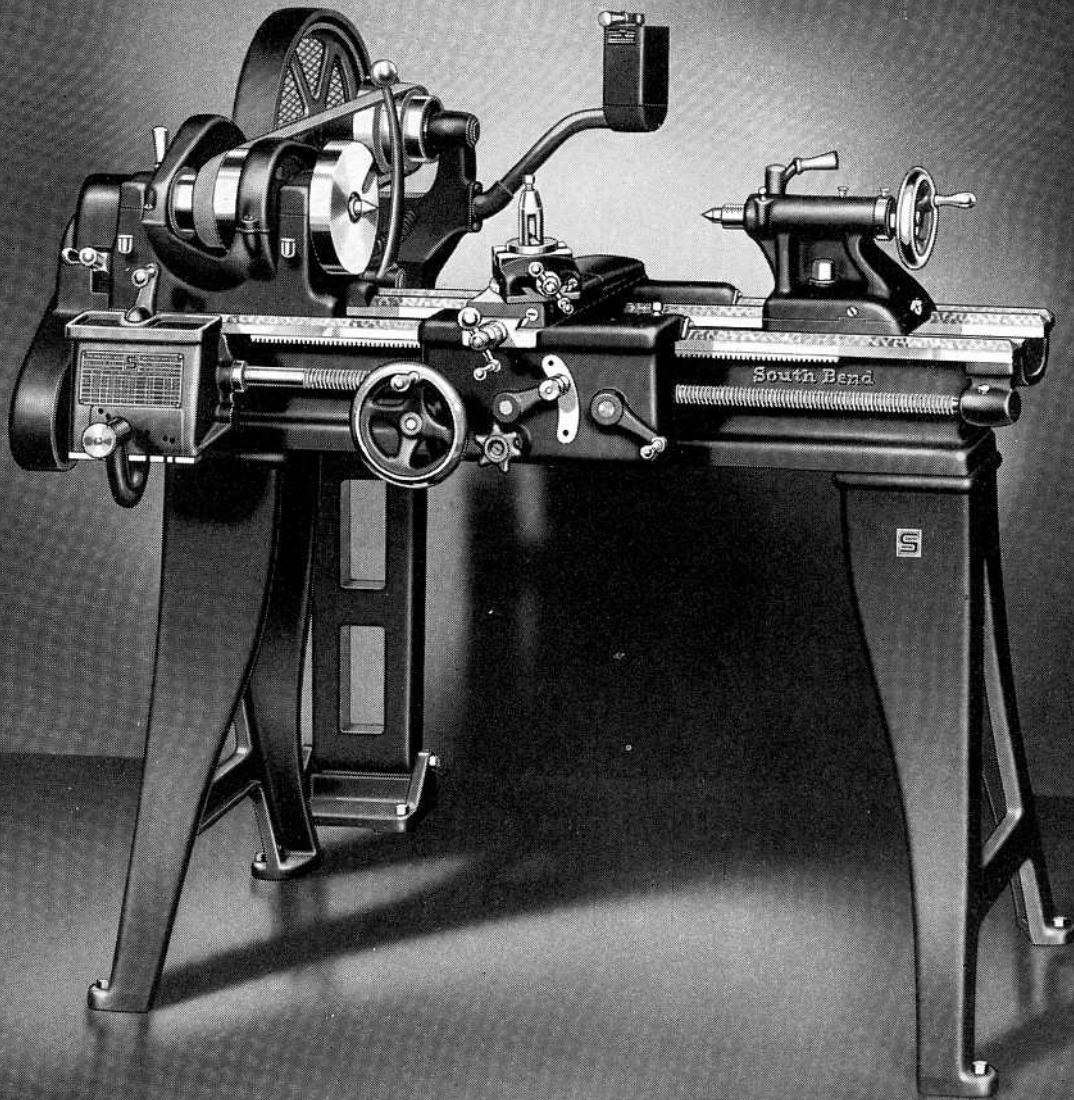
Attachments, Chucks, and Tools for this lathe are shown in the back of this catalog.

Regular Equipment included in price of lathe consists of: 1/2 H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; a set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

10-inch 11/16" Collet Underneath Motor Driven Lathes  
Standard Change Gear—with Floor Legs

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers.....	15 3/4-in.	20 3/4-in.	26 3/4-in.	33 3/4-in.
Catalog Number.....	197-Y	197-Z	197-A	197-R
Shipping Weight, Crated.....	780 lbs.	805 lbs.	830 lbs.	855 lbs.
Code Word.....	Bucem	Bucow	Buxin	Buxot





## 10-inch $\frac{11}{16}$ " Collet Pedestal Motor Driven Precision Lathe Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $\frac{11}{16}$ " Collet Capacity Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 36.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal

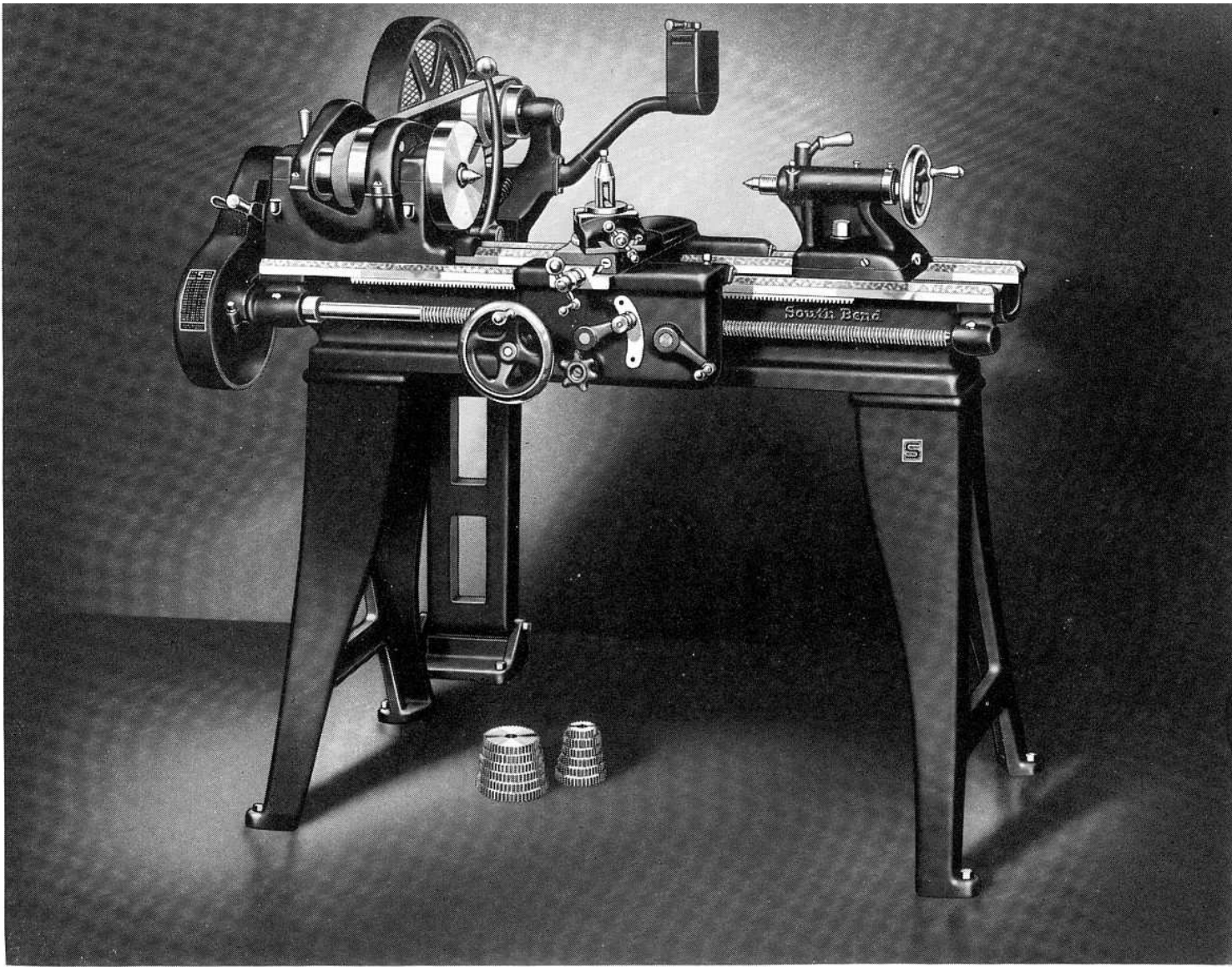
feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of this catalog.

Regular Equipment included in price of lathe consists of:  $\frac{1}{2}$  H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

10-inch  $\frac{11}{16}$ " Collet Pedestal Motor Driven Lathes  
Quick Change Gear—with Floor Legs

Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	15¾-in.	20¾-in.	26¾-in.	33¾-in.
Catalog Number.....	999-Y	999-Z	999-A	999-R
Shipping Weight, Crated.....	685 lbs.	710 lbs.	735 lbs.	760 lbs.
Code Word.....	Catig	Catek	Catom	Catus



## 10-inch $\frac{11}{16}$ " Collet Pedestal Motor Driven Precision Lathe

Series "S"—Standard Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $\frac{11}{16}$ " Collet Capacity Standard Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 36.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal

feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

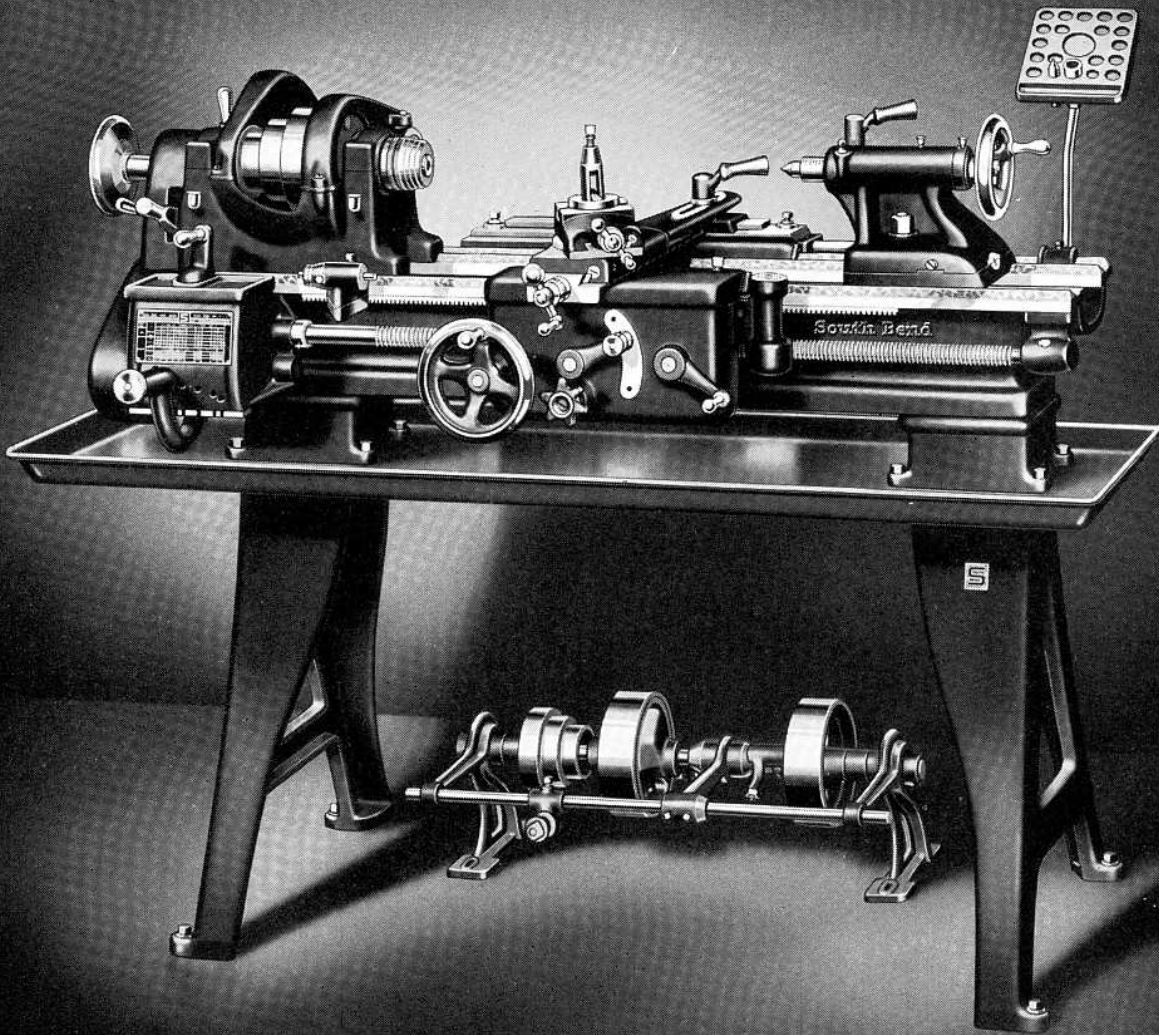
Attachments, Chucks, and Tools for this lathe are shown in the back of this catalog.

Regular Equipment included in price of lathe consists of:  $\frac{1}{2}$  H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; a set of independent change gears; installation plan; and instruction book "How to Run a Lathe."

10-inch  $\frac{11}{16}$ " Collet Pedestal Motor Driven Lathes  
Standard Change Gear—with Floor Legs

Bed Length	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.	4 $\frac{1}{2}$ -ft.
Distance Between Centers.....	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.	33 $\frac{3}{4}$ -in.
Catalog Number.....	997-Y	997-Z	997-A	997-R
Shipping Weight, Crated.....	675 lbs.	700 lbs.	725 lbs.	750 lbs.
Code Word.....	Cewir	Cewox	Cezax	Cezur





## 10-inch $\frac{1}{16}$ " Collet Tool Room Precision Lathe

Series "S"—Countershaft Driven—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $\frac{1}{16}$ " Collet Capacity Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 36 for complete specifications.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Six spindle speeds forward and six in reverse are available.

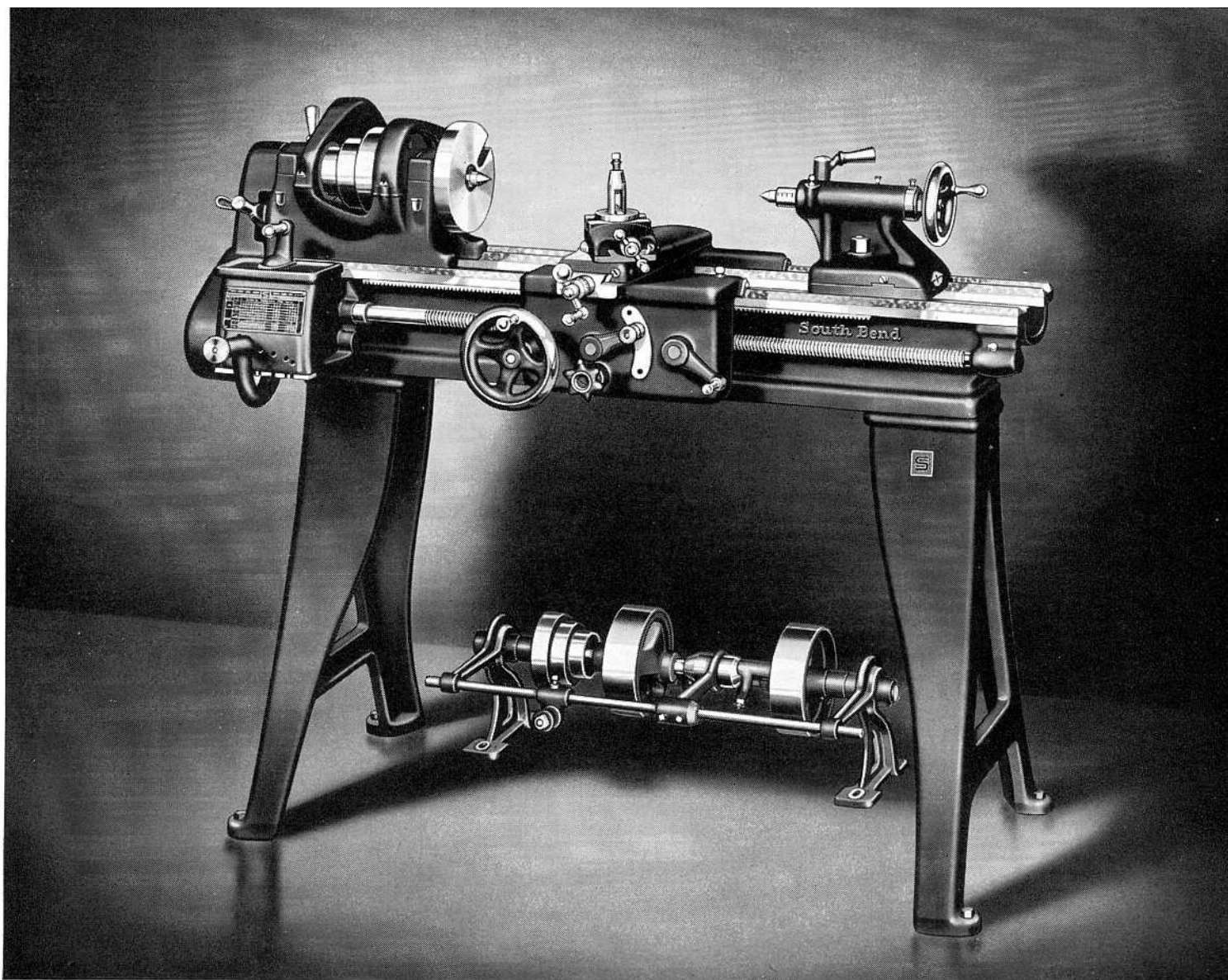
Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box; and semi-steel lathe bed.

Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price of this lathe consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

10-inch  $\frac{1}{16}$ " Collet Tool Room Lathes  
Countershaft Driven Lathes—with Floor Legs

Bed Length	3-ft.	$3\frac{1}{2}$ -ft.	4-ft.
Distance Between Centers.....	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.
Catalog Number.....	8099-Y	8099-Z	8099-A
Shipping Weight, Crated.....	630 lbs.	655 lbs.	680 lbs.
Code Word.....	Tibec	Tibom	Tibus



## 10-inch $\frac{11}{16}$ " Collet Countershaft Driven Precision Lathe

Series "S"—Quick and Standard Change—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $\frac{11}{16}$ " Collet Capacity Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for both production operations and general machine work. See page 36 for specifications of this lathe.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball

thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of this catalog.

Regular Equipment included in price of this lathe consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; gear box or change gears; installation plan; and instruction book "How to Run a Lathe."

10"  $\frac{11}{16}$ " COLLET LATHES

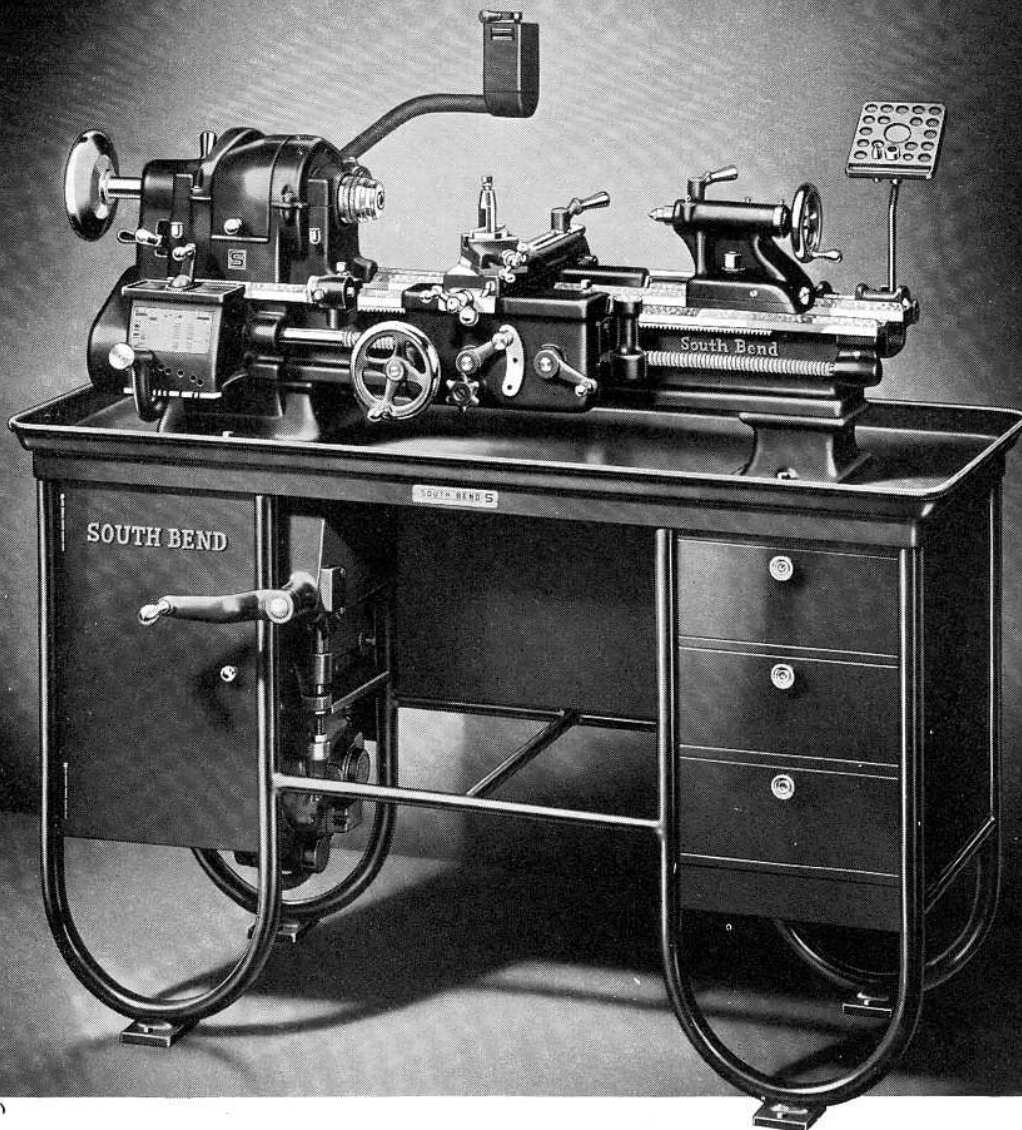
10-inch  $\frac{11}{16}$ " Collet Countershaft Driven Lathes  
Quick Change Gear—with Floor Legs

Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers . . .	15¾-in.	20¾-in.	26¾-in.	33¾-in.
Catalog Number . . . . .	99-Y	99-Z	99-A	99-R
Shipping Weight, Crated . . . .	515 lbs.	540 lbs.	565 lbs.	590 lbs.
Code Word . . . . .	Tiges	Tiguh	Tixud	Tixen

10-inch  $\frac{11}{16}$ " Collet Countershaft Driven Lathes  
Standard Change Gear—with Floor Legs

Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers . . . .	15¾-in.	20¾-in.	26¾-in.	33¾-in.
Catalog Number . . . . .	97-Y	97-Z	97-A	97-R
Shipping Weight, Crated . . . . .	505 lbs.	530 lbs.	555 lbs.	580 lbs.
Code Word . . . . .	Terak	Teris	Tesig	Tesom





(Patented)

## 10-inch $1\frac{1}{16}$ " Collet Tool Room Precision Bench Lathe Series "S"—Underneath Motor Driven—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $1\frac{1}{16}$ " Collet Capacity Tool Room Bench Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 36 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating

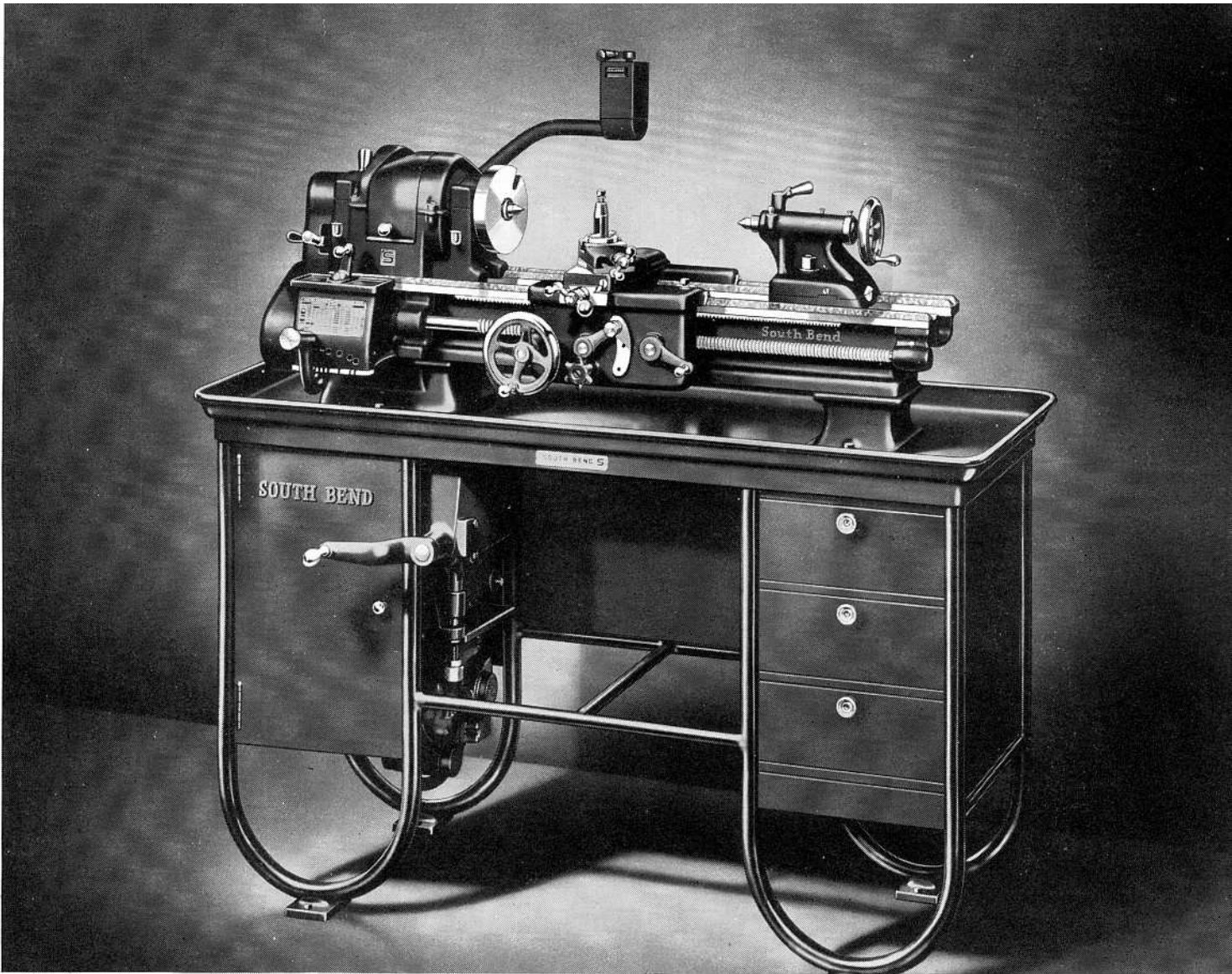
automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box; and semi-steel lathe bed.

Tool Room Attachments included in price of this lathe are the same as listed on page 42.

Regular Equipment included in price of lathe consists of: steel bench with chip pan;  $\frac{1}{2}$  H.P. instant reversing motor; reversing switch; wiring for switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and instruction book "How to Run a Lathe."

10-inch  $1\frac{1}{16}$ " Collet Tool Room Bench Lathes  
Underneath Motor Driven—with Steel Bench

Bed Length	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.
Distance Between Centers	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.
Catalog Number	8199-YN	8199-ZN	8199-AN
Shipping Weight, Crated	940 lbs.	970 lbs.	1040 lbs.
Code Word	Loras	Lorew	Lorum



(Patented)

## 10-inch $\frac{11}{16}$ " Collet Underneath Motor Driven Bench Lathe Series "S"—Quick and Standard Change—Back-Geared—Belt Drive to Spindle

The 10-inch Swing  $\frac{11}{16}$ " Collet Capacity Bench Lathe with underneath belt motor drive is popular for industrial use, as it is unusually compact and efficient. The motor drive unit is enclosed in the left hand side of the bench. This lathe is supplied either with quick change gear box, as shown, or with standard change gear equipment. See page 36.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal

feeds; easy reading micrometer graduated collars; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of this catalog.

Regular Equipment included in price of lathe consists of: steel bench with chip pan;  $\frac{1}{2}$  H.P. instant reversing motor; reversing switch; wiring; flat leather belt; large and small face plates; tool post; thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve, wrenches; quick change gear box or set of change gears; installation plan; and book "How to Run a Lathe."

### 10-inch $\frac{11}{16}$ " Collet Underneath Motor Driven Bench Lathes Quick Change Gear—with Steel Bench

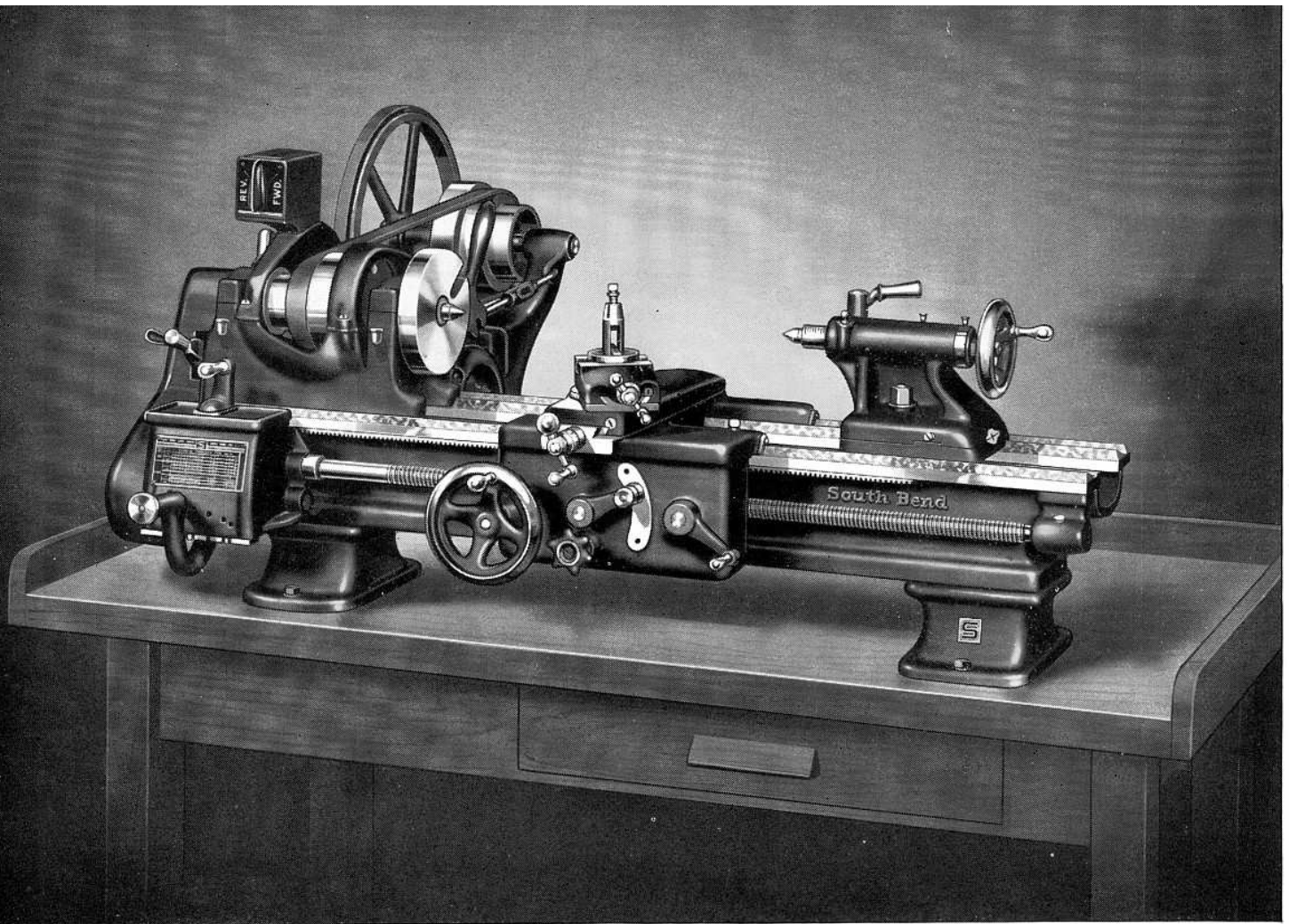
Bed Length	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.	4 $\frac{1}{2}$ -ft.
Distance Between Centers . . .	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.	33 $\frac{3}{4}$ -in.
Catalog Number . . . . .	199-YN	199-ZN	199-AN	199-RN
Shipping Weight, Crated . . . .	830 lbs.	860 lbs.	930 lbs.	960 lbs.
Code Word . . . . .	Sicoz	Sican	Sineh	Sinor

### 10-inch $\frac{11}{16}$ " Collet Underneath Motor Driven Bench Lathes Standard Change Gear—with Steel Bench

Bed Length	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.	4 $\frac{1}{2}$ -ft.
Distance Between Centers . . . .	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.	33 $\frac{3}{4}$ -in.
Catalog Number . . . . .	197-YN	197-ZN	197-AN	197-RN
Shipping Weight, Crated . . . .	820 lbs.	850 lbs.	920 lbs.	950 lbs.
Code Word . . . . .	Sekoh	Sekun	Semah	Semik

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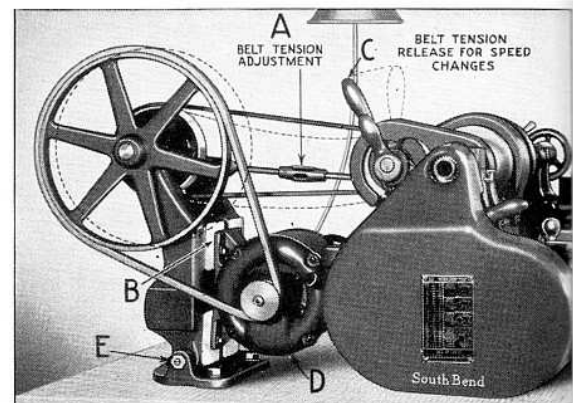
## 10"-11/16" Collet Horizontal Motor Driven Precision Bench Lathe Series "S"—Quick and Standard Change—Back-Geared—Belt Drive to Spindle

The 10-inch 11/16" Collet Capacity Lathe with horizontal motor drive is very attractively priced. This lathe is made in the quick change gear type as shown, also in the standard change gear type. See page 36 for specifications of lathe.

The Horizontal Motor Drive is convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull.

Attachments, Chucks and Tools for this lathe are shown in back of this catalog.

Regular Equipment included in price of this lathe consists of: 1/2 H.P. instant reversing motor, reversing switch, wiring, V-belt, leather belt, large and small face plates, tool post, thread cutting stop, centers for headstock and tailstock spindles, spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe." Bench not included. Blue print for bench supplied on request, see pg. 99.



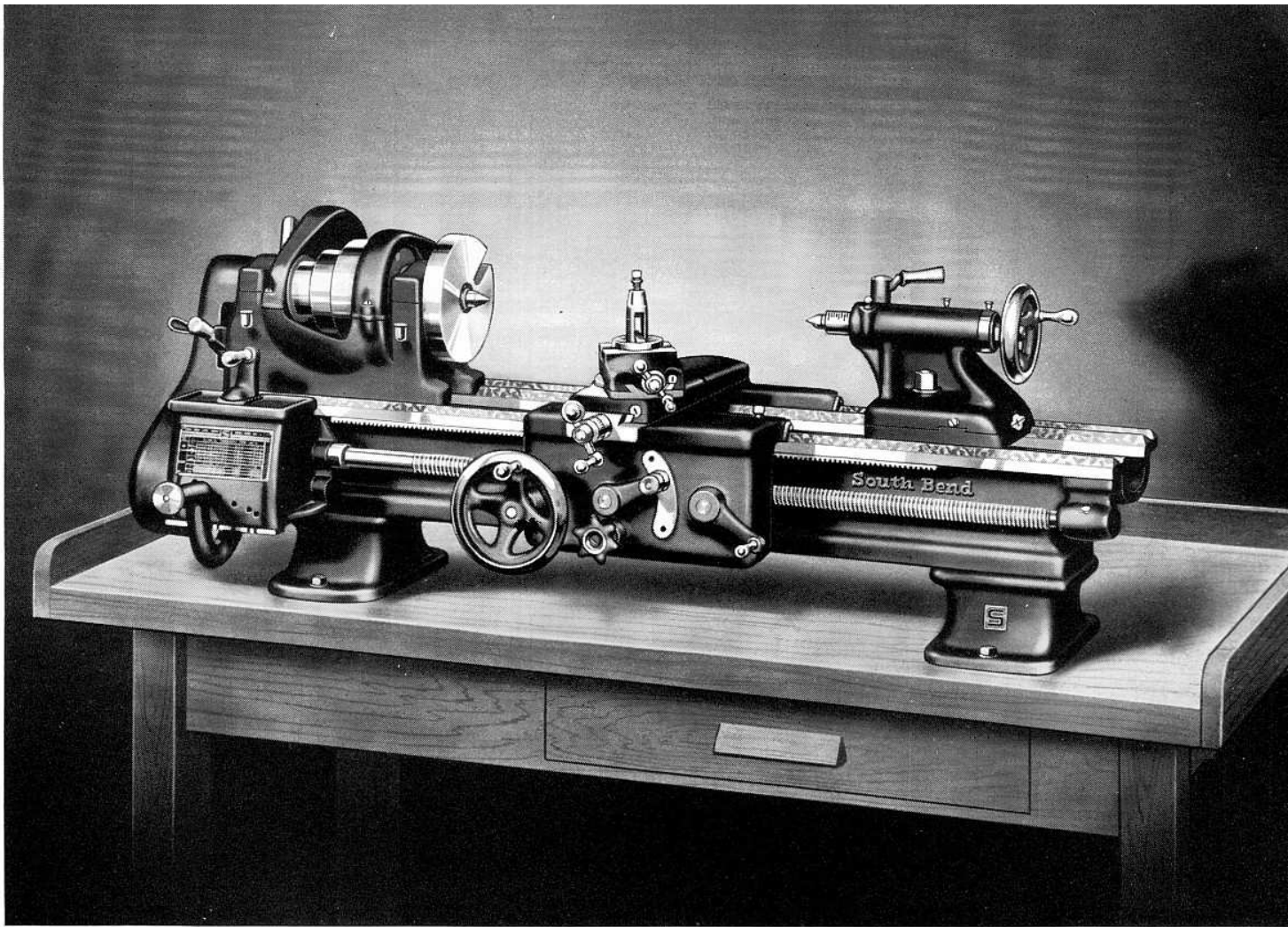
(Patented)  
End View of Lathe Showing Adjustable  
Horizontal Motor Drive

10-inch 11/16" Collet Horizontal Motor Driven Bench Lathes  
Quick Change Gear—less Bench

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers . . . . .	15 3/4-in.	20 3/4-in.	26 3/4-in.	33 3/4-in.
Catalog Number . . . . .	499-Y	499-Z	499-A	499-R
Shipping Weight, Crated . . . . .	501 lbs.	526 lbs.	551 lbs.	576 lbs.
Code Word . . . . .	Duhaz	Duhon	Dusew	Dusog

10-inch 11/16" Collet Horizontal Motor Driven Bench Lathes  
Standard Change Gear—less Bench

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers . . . . .	15 3/4-in.	20 3/4-in.	26 3/4-in.	33 3/4-in.
Catalog Number . . . . .	497-Y	497-Z	497-A	497-R
Shipping Weight, Crated . . . . .	491 lbs.	516 lbs.	541 lbs.	566 lbs.
Code Word . . . . .	Damen	Damox	Datih	Daton



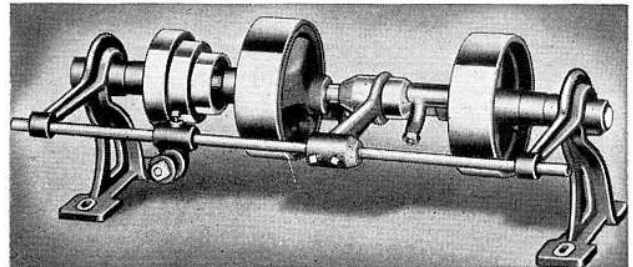
## 10"-11/16" Collet Countershaft Driven Precision Bench Lathe Series "S"—Quick and Standard Change—Back-Geared—Belt Drive to Spindle

The 10-inch 11/16" Collet Capacity Bench Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. These lathes are operated very economically in large industrial plants where batteries of six or eight lathes are often driven by a single lineshaft. This lathe is made in the quick change gear type as illustrated, also in standard change gear type as listed below. See page 36.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed.

Regular Equipment included in price of lathe consists of: reversing countershaft with two friction

clutch pulleys; large and small face plates; forged steel heat-treated tool post; thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; gear box or change gears; installation plan; and book "How to Run a Lathe." Bench is not included. Blue print for making bench supplied on request, see page 99.



Double Friction Countershaft for Lathe

10"-11/16"  
COLLET  
LATHES

### 10-inch 11/16" Collet Countershaft Driven Bench Lathes Quick Change Gear—less Bench

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers . . .	15 3/4-in.	20 3/4-in.	26 3/4-in.	33 3/4-in.
Catalog Number . . . . .	99-YB	99-ZB	99-AB	99-RB
Shipping Weight, Crated . . . .	440 lbs.	465 lbs.	490 lbs.	515 lbs.
Code Word . . . . .	Tahen	Tahir	Tahox	Tahud

### 10-inch 11/16" Collet Countershaft Driven Bench Lathes Standard Change Gear—less Bench

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers . . .	15 3/4-in.	20 3/4-in.	26 3/4-in.	33 3/4-in.
Catalog Number . . . . .	97-YB	97-ZB	97-AB	97-RB
Shipping Weight, Crated . . . .	430 lbs.	455 lbs.	480 lbs.	505 lbs.
Code Word . . . . .	Tegas	Tegum	Tehin	Tehuz



# 10"-1" Collet South Bend Precision Lathes—Series "S"

Specifications Apply to all 10-inch 1" Collet Lathes in this Catalog

All types of 10-inch 1" Collet lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage, and bed. The only difference between the various models of lathes is in the type of drive, and the equipment supplied.

## Capacity of Lathe

Swing over bed and saddle wings.....	10 $\frac{1}{8}$ "
Swing over saddle with chip guard removed.....	6 $\frac{3}{4}$ "
Swing over saddle with chip guard.....	5 $\frac{7}{8}$ "

## Spindle Speeds (Standard spindle speeds, subject to 5% variation. Motor driven lathes have two-step motor pulley providing twelve spindle speeds)

Low Speed Range (using small step on motor pulley)	
R.P.M. of spindle, direct belt driven.....	700, 434, 277
R.P.M. of spindle, back gears engaged.....	129, 79, 50
High Speed Range (using large step on motor pulley)	
R.P.M. of spindle, direct belt driven.....	1357, 837, 535
R.P.M. of spindle, back gears engaged.....	248, 153, 97

## Threads and Feeds

Thread cutting range—48 threads R.H. or L.H.....	4 to 224 per inch
Longitudinal feeds through friction clutch—48 feeds R.H. or L.H....	.0015" to .0836"
Cross feeds through friction clutch—48 feeds.....	.0006" to .0309"
Lead screw, 29° Acme thread.....	$\frac{3}{4}$ " Diam.-8 Thrds.

## Headstock

Hole through spindle.....	1 $\frac{3}{8}$ "
Maximum collet capacity*.....	1"
Size of center, Morse taper.....	No. 2
Spindle nose diameter and threads per inch.....	2 $\frac{1}{4}$ "-8
Width of cone pulley step for belt.....	1 $\frac{5}{16}$ "
Large face plate diameter.....	8 $\frac{3}{8}$ "
Small face plate diameter.....	5 $\frac{5}{8}$ "
Large bearing, diameter and length.....	2 $\frac{1}{4}$ " x 2 $\frac{3}{16}$ "
Small bearing, diameter and length.....	1 $\frac{7}{8}$ " x 1 $\frac{1}{4}$ "
Spindle bearings are cast integral with headstock.	

## Compound Rest

Cross slide will travel.....	5 $\frac{7}{8}$ "
Angular hand feed of compound rest top slide.....	2"

## Tool Post

Size of opening for tool holder shank.....	$\frac{3}{8}$ " x 1 $\frac{3}{16}$ "
Size of cutter bits tool holder takes.....	$\frac{1}{4}$ " sq.

## Tailstock

Size of Morse taper centers.....	No. 2
Spindle travel.....	2 $\frac{1}{8}$ "
Each graduation on tailstock spindle advances spindle.....	$\frac{1}{16}$ "
Tailstock top will set over for taper turning.....	$\frac{3}{4}$ "

## Motor

Standard size of motor supplied with each 10-inch 1" collet motor driven lathe.....	$\frac{3}{4}$ H.P.
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Standard motors as listed with lathes shown in this catalog: 1-phase, 50 or 60 cycle, 115 or 230 volt; 3-phase, 50/60 cycle, 220, 440, or 550 volt; D.C., 115 or 230 volt. Special motors supplied to order. Prices of lathes with special motors will be quoted on request.

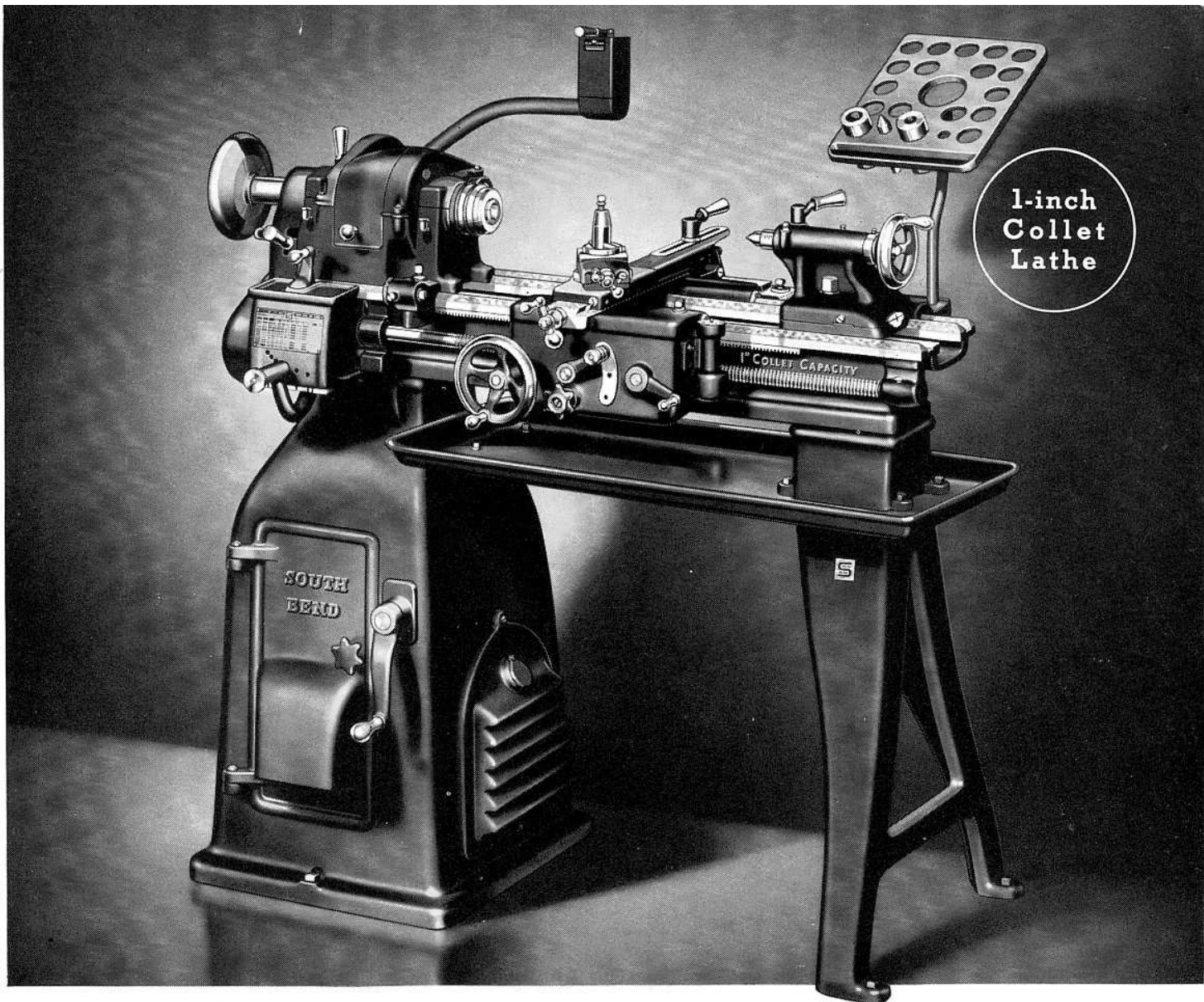
## Specifications of Lathes with Metric Lead Screws

Applying only to lathes ordered with metric lead screw and metric graduations.

Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	3.0 mm
Cross feed screw pitch.....	2.5 mm

\*Collets for 10-inch 1" Collet Lathes are interchangeable with collets for 16-inch Lathes. Draw-in Collet Chuck Attachment is not interchangeable.

For description of lathe features see pages 6 to 11



## 10-inch 1" Collet Tool Room Precision Lathe

Series "S"—Underneath Motor Drive—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture.

A Special Headstock, with  $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; SOUTH BEND, INDIANA, U.S.A.

quick change gear box for threads and feeds; and semi-steel lathe bed. See page 48 for specifications.

Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

Regular Equipment included in price of lathe consists of:  $\frac{3}{4}$  H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

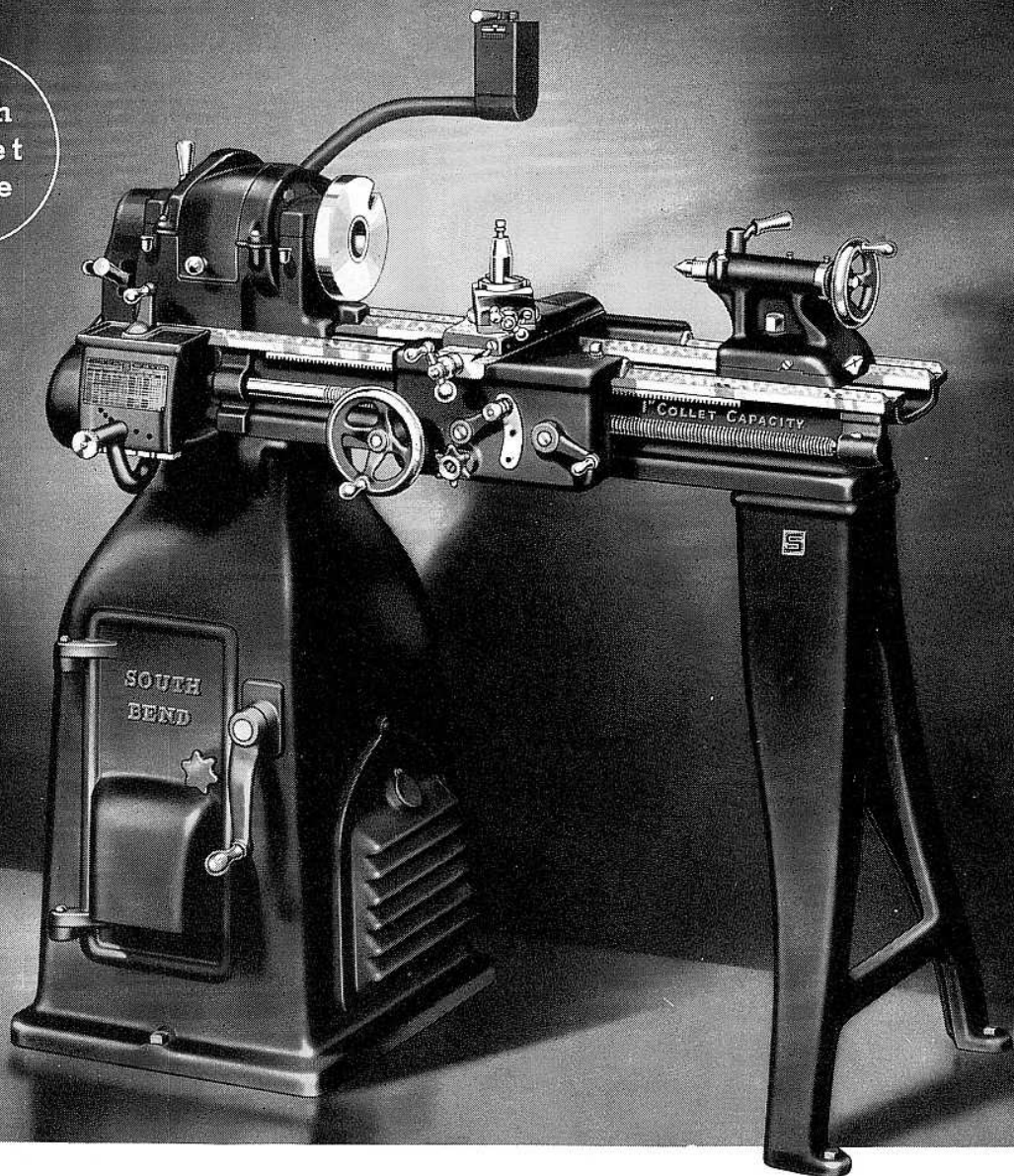
10-inch 1" Collet Tool Room Lathes  
Underneath Motor Driven—with Floor Legs

Bed Lengths	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.
Distance Between Centers.....	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.
Catalog Number.....	8187-Y	8187-Z	8187-A
Shipping Weight, Crated.....	935 lbs.	960 lbs.	985 lbs.
Code Word.....	Huwec	Huwig	Huwom

10" COLLET LATHES



1-inch  
Collet  
Lathe



## 10-inch 1" Collet Underneath Motor Driven Precision Lathe

Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Quick Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. The quick change gear box provides an unusually wide range of right and left hand screw threads and power feeds. See pg. 48 for specifications.

A Special Headstock, with 1 3/8" hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of: 3/4 H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

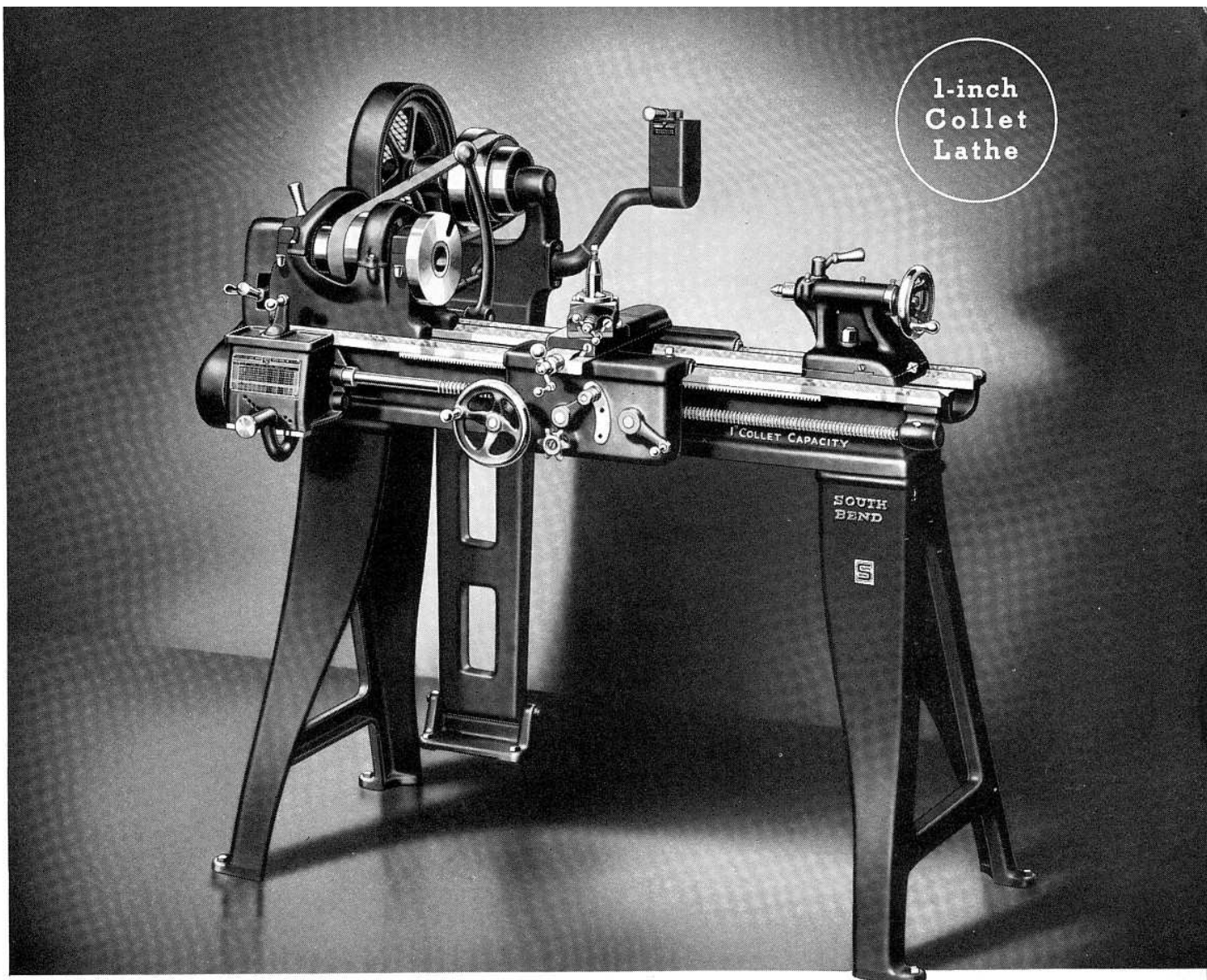
10-inch 1" Collet Underneath Motor Driven Lathes  
Quick Change Gear—with Floor Legs

Bed Lengths	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers....	15 3/4-in.	20 3/4-in.	26 3/4-in.	33 3/4-in.
Catalog Number.....	187-Y	187-Z	187-A	187-R
Shipping Weight, Crated....	810 lbs.	835 lbs.	860 lbs.	885 lbs.
Code Word.....	Burac	Bureg	Butor	Buzis

This Lathe is also supplied in the Standard Change Gear type.

10" 1" COLLET LATHES

1-inch  
Collet  
Lathe



## 10-inch 1" Collet Pedestal Motor Driven Precision Lathe

Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 48.

A Special Headstock, with  $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box; and semi-steel lathe bed.

SOUTH BEND, INDIANA, U.S.A.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of lathe consists of:  $\frac{3}{4}$  H.P. instant reversing motor; reversing switch; wiring for the switch and motor; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe."

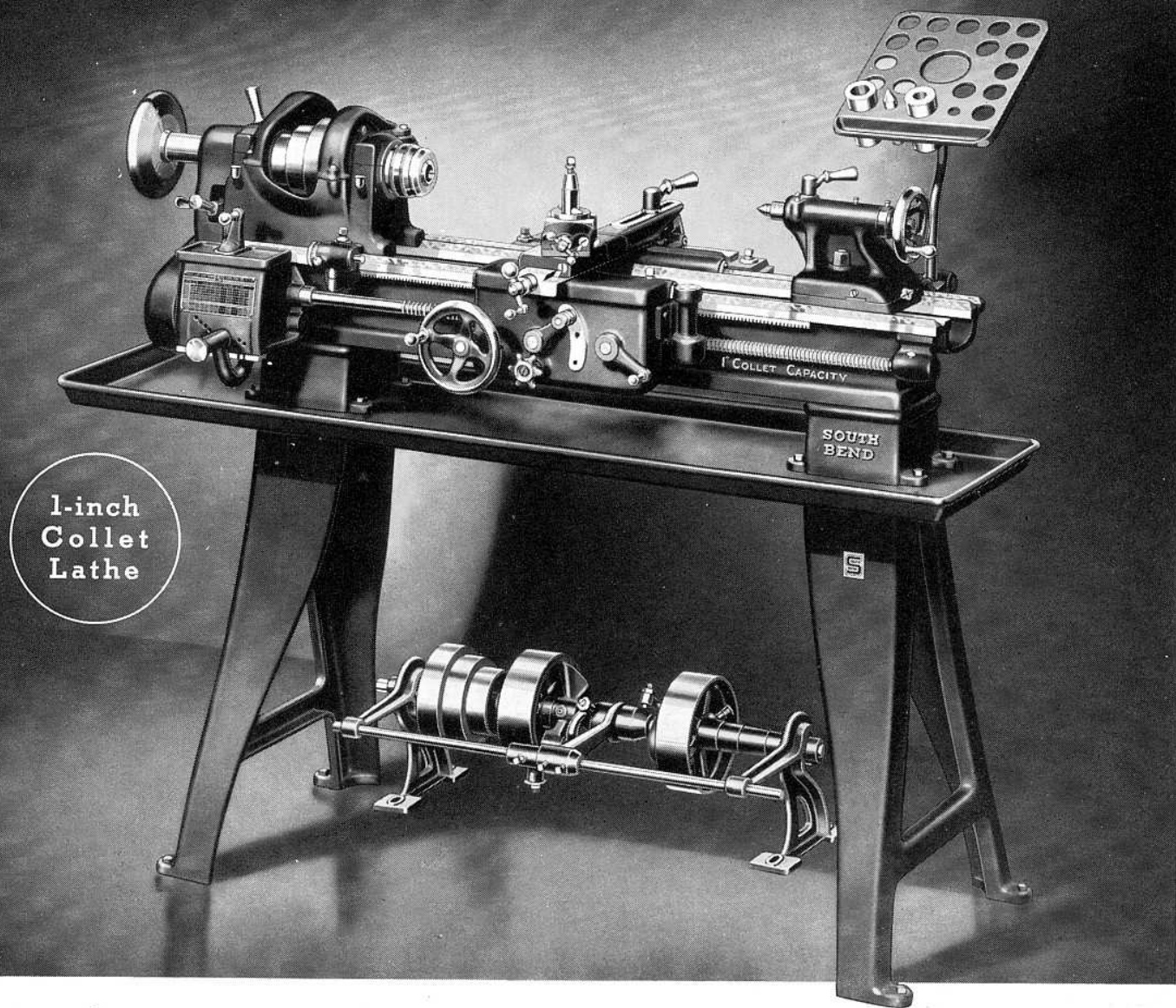
10-inch 1" Collet Pedestal Motor Driven Lathes  
Quick Change Gear—with Floor Legs

Bed Lengths	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.	4 $\frac{1}{2}$ -ft.
Distance Between Centers . . .	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.	33 $\frac{3}{4}$ -in.
Catalog Number . . . . .	987-Y	987-Z	987-A	987-R
Shipping Weight, Crated . . . .	705 lbs.	730 lbs.	755 lbs.	780 lbs.
Code Word . . . . .	Girat	Girex	Giroh	Girun

This Lathe is also supplied in the Standard Change Gear type.

10" COLLET  
LATHES





1-inch  
Collet  
Lathe

## 10-inch 1" Collet Tool Room Precision Lathe

Series "S"—Countershaft Drive—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 48 for complete specifications.

A Special Headstock, with 1 3/8" hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box; and semi-steel lathe bed.

Tool Room Attachments included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

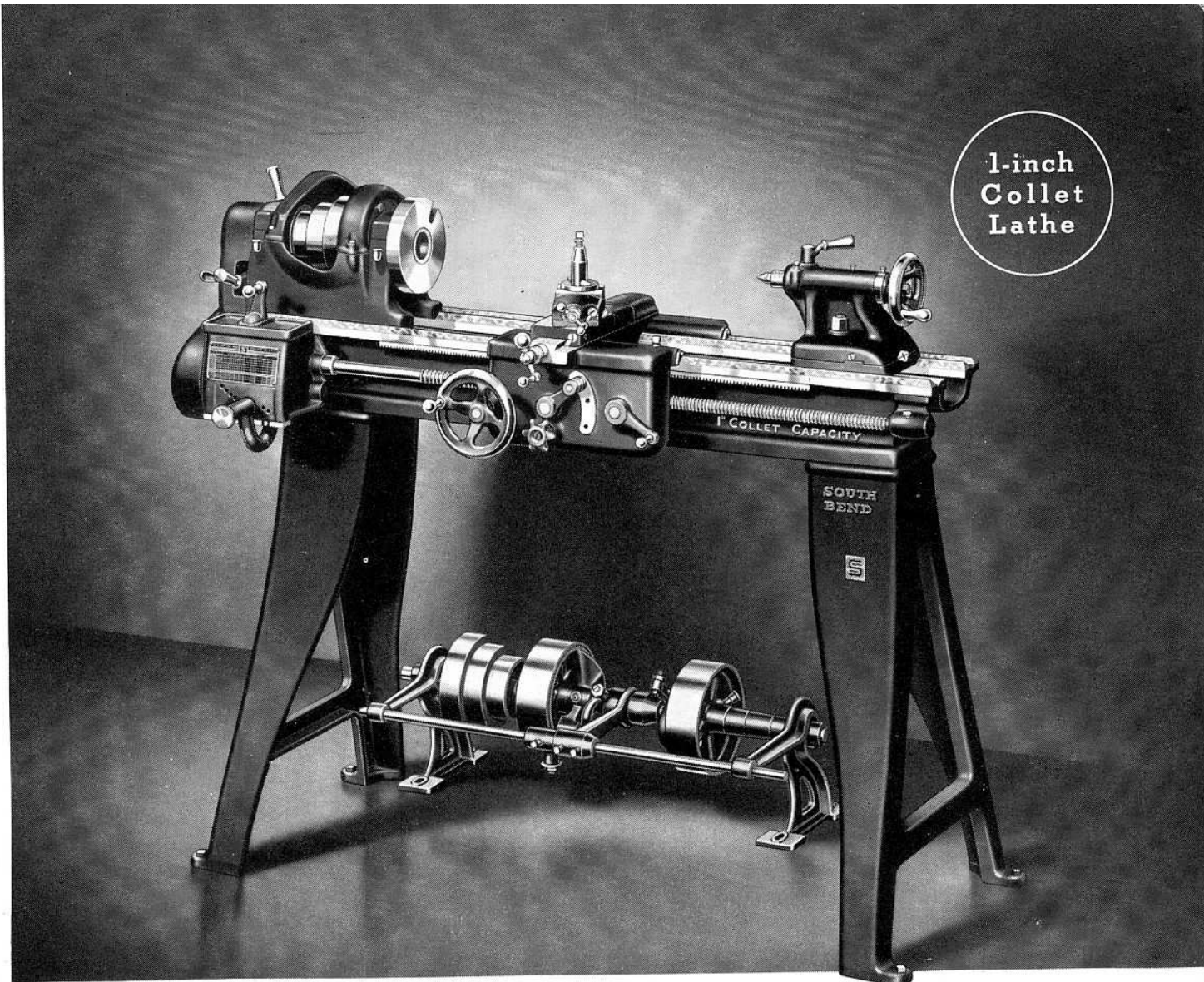
Regular Equipment included in price of this lathe consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; No. 2 Morse taper tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box for threads and feeds; installation plan, and book "How to Run a Lathe."

10-inch 1" Collet Tool Room Lathes  
Countershaft Driven—with Floor Legs

Bed Lengths	3-ft.	3 1/2-ft.	4-ft.
Distance Between Centers.....	15 3/4-in.	20 3/4-in.	26 3/4-in.
Catalog Number.....	8087-Y	8087-Z	8087-A
Shipping Weight, Crated.....	650 lbs.	675 lbs.	700 lbs.
Code Word.....	Lomak	Lomeh	Lomux

10" COLLET LATHES

1-inch  
Collet  
Lathe



## 10-inch 1" Collet Countershaft Driven Precision Lathe

### Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in industrial plants. See page 48 for specifications.

A Special Headstock, with  $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box; and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; gear box; installation plan, and book "How to Run a Lathe."

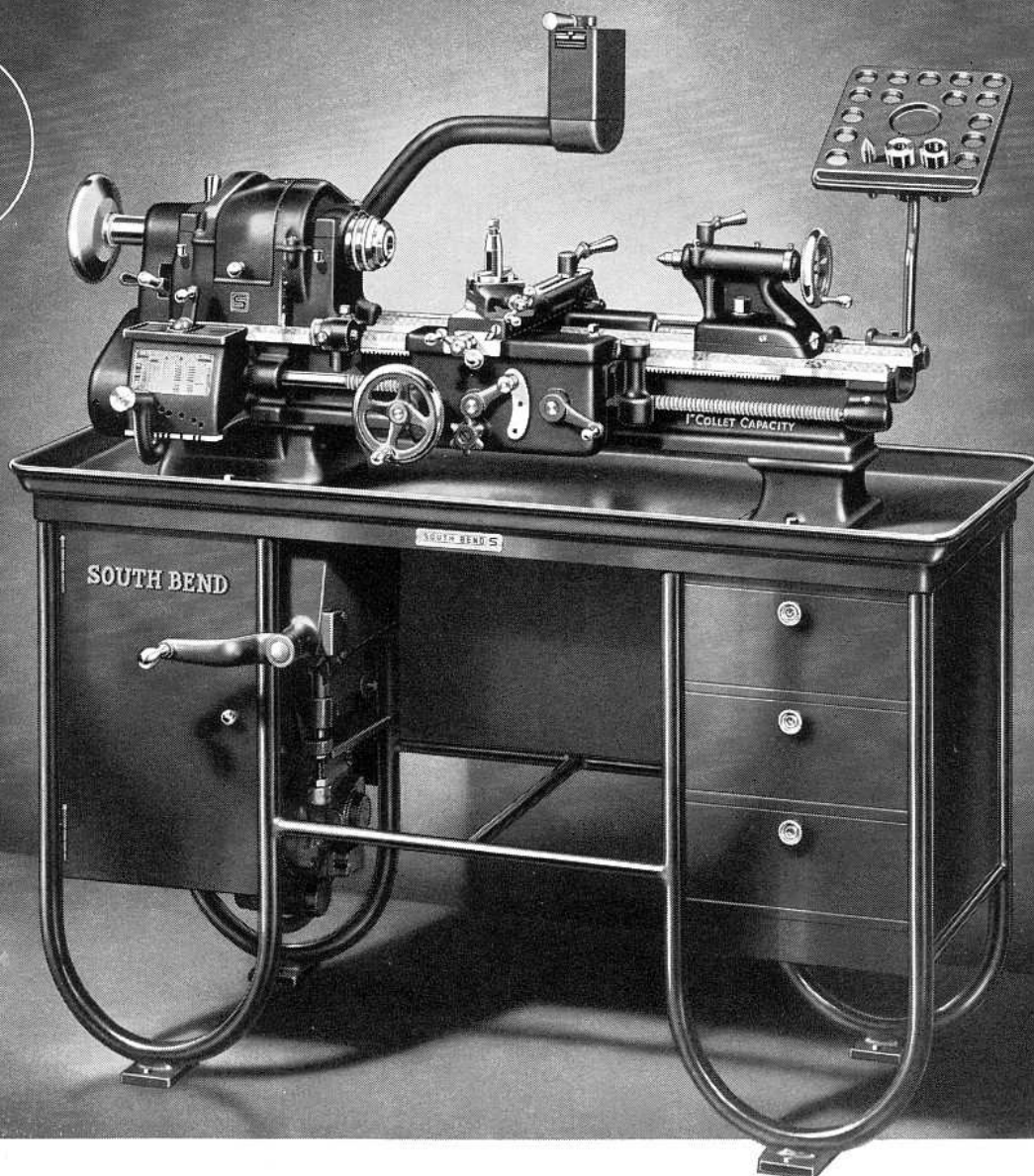
10-inch 1" Collet Countershaft Driven Lathes  
Quick Change Gear—with Floor Legs

Bed Lengths	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	15¾-in.	20¾-in.	26¾-in.	33¾-in.
Catalog Number.....	87-Y	87-Z	87-A	87-R
Shipping Weight, Crated.....	525 lbs.	550 lbs.	575 lbs.	600 lbs.
Code Word.....	Takec	Takig	Takom	Takus

This Lathe is also supplied in the Standard Change Gear type.



1-inch  
Collet  
Lathe



(Patented)

## 10-inch 1" Collet Tool Room Precision Bench Lathe

Series "S"—Underneath Motor Drive—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Tool Room Bench Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-four years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 48 for specifications of this lathe.

**A Special Headstock**, with  $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys.

**Improved Features** of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars;

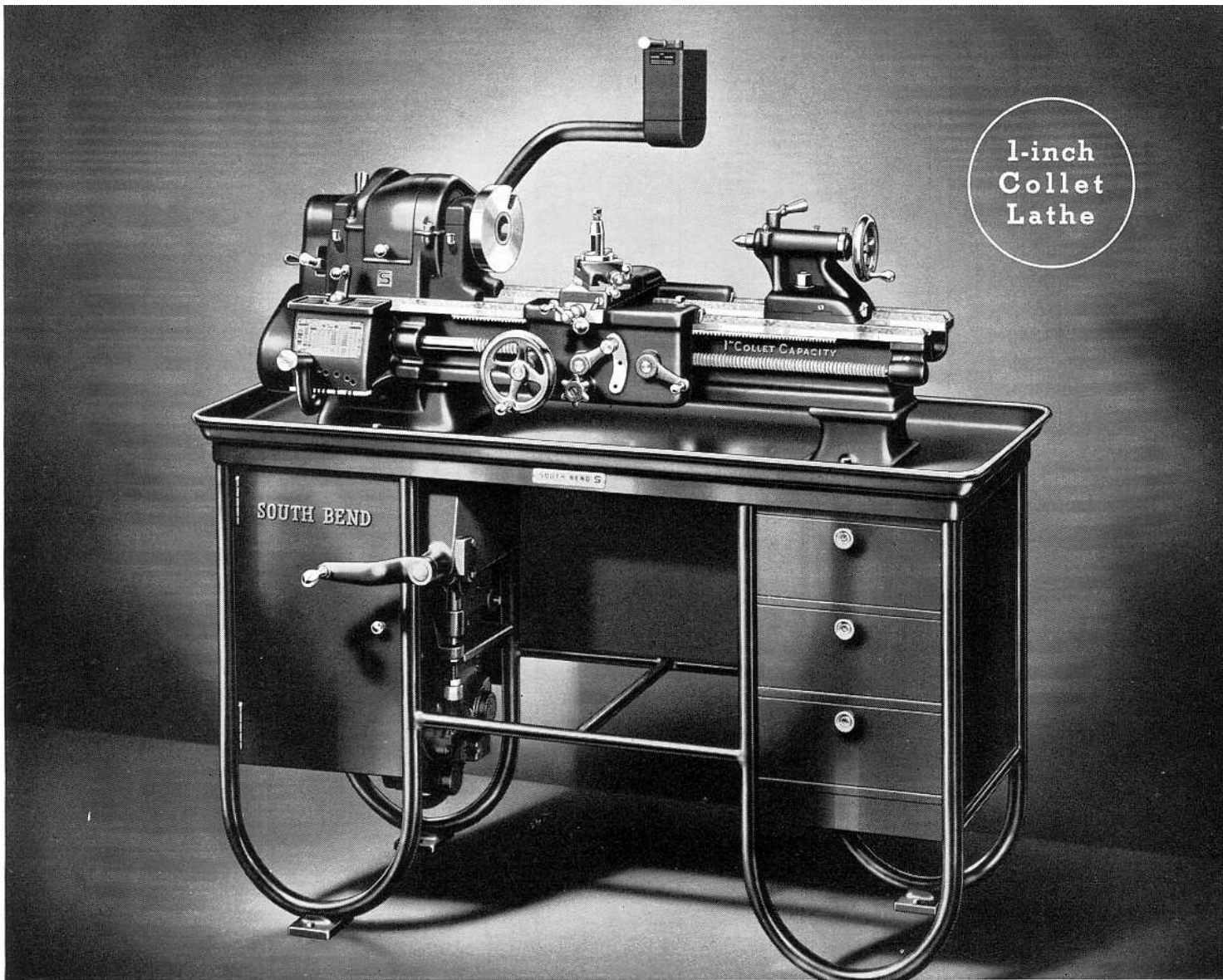
quick change gear box for threads and feeds; and semi-steel lathe bed.

**Tool Room Attachments** included in price of this lathe consist of: hand wheel type draw-in collet attachment with one collet; collet rack; telescopic taper attachment; thread dial indicator; chip pan; and micrometer carriage stop.

**Regular Equipment** included in price consists of: steel bench with chip pan;  $\frac{3}{4}$  H.P. instant reversing motor; reversing switch; wiring; V-belt; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan, and book "How to Run a Lathe."

10-inch 1" Collet Tool Room Bench Lathes  
Underneath Motor Driven—with Steel Bench

Bed Lengths	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.
Distance Between Centers.....	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.
Catalog Number.....	8187-YN	8187-ZN	8187-AN
Shipping Weight, Crated.....	960 lbs.	990 lbs.	1060 lbs.
Code Word.....	Lasik	Lasum	Lasoh



(Patented)

## 10"-1" Collet Underneath Motor Driven Precision Bench Lathe Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Quick Change Gear Bench Lathe with underneath belt motor drive is popular for industrial use as it is unusually compact and efficient. This lathe has the ruggedness and durability for production operations and the precision accuracy for exacting tool room and laboratory use. See page 48 for specifications.

A Special Headstock, with  $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys.

The Quick Change Gear Box provides an unusually wide range of right and left hand screw threads and power carriage feeds.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball

SOUTH BEND, INDIANA, U.S.A.

thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

Regular Equipment included in price consists of: steel bench with chip pan;  $\frac{3}{4}$  H.P. instant reversing motor; reversing switch; wiring; V-belt; flat leather belt; large and small face plates; tool post; thread cutting stop; No. 2 Morse taper centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan and instruction book "How to Run a Lathe."

### 10-inch 1" Collet Underneath Motor Driven Bench Lathes Quick Change Gear—with Steel Bench

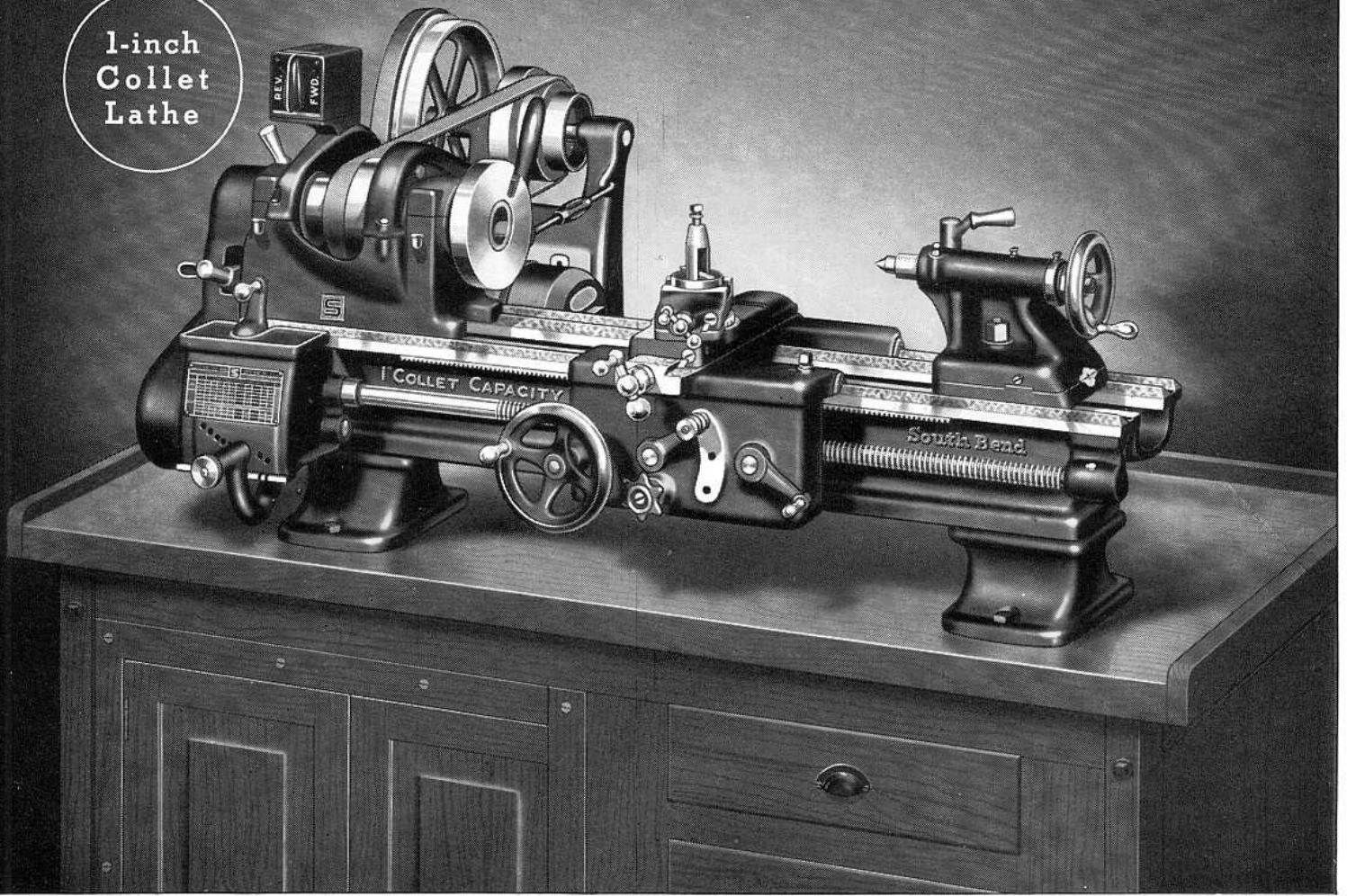
Bed Lengths	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers....	15¾-in.	20¾-in.	26¾-in.	33¾-in.
Catalog Number.....	187-YN	187-ZN	187-AN	187-RN
Shipping Weight, Crated ....	850 lbs.	880 lbs.	950 lbs.	980 lbs.
Code Word.....	Boguk	Bokas	Bokew	Bokig

This Lathe is also supplied in the Standard Change Gear type.

10" 1" COLLET  
LATHE



1-inch  
Collet  
Lathe



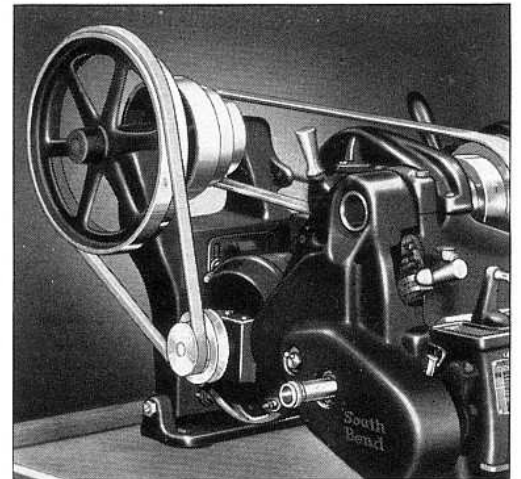
## 10"-1" Collet Horizontal Motor Drive Precision Bench Lathe Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Quick Change Gear Bench Lathe with horizontal motor drive is very attractively priced. The quick change gear box provides a wide range of right and left hand screw threads and power carriage feeds. See page 48 for specifications of this lathe.

A Special Headstock, with  $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch; micrometer graduated collars; quick change gear box for threads and feeds; and semi-steel lathe bed.

Regular Equipment included in price of lathe consists of:  $\frac{3}{4}$  H.P. instant reversing motor; reversing switch; wiring; V-belt; leather belt; large and small face plates; tool post; thread cutting stop; centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe." Bench is not included. Blue print for making bench supplied on request, see pg. 99.



(Patented)  
End View of Lathe Showing Adjustable  
Horizontal Motor Drive

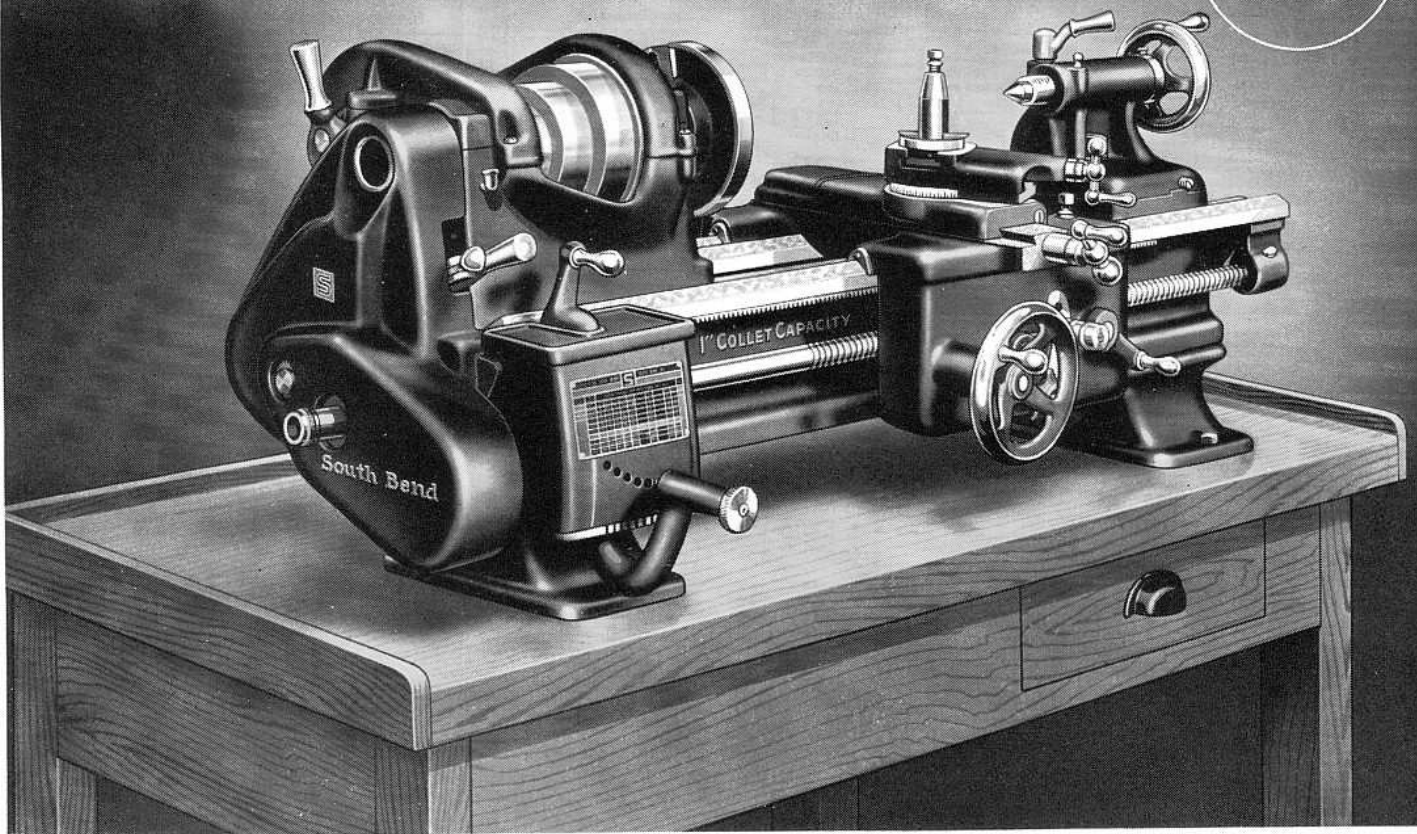
### 10-inch 1" Collet Horizontal Motor Driven Bench Lathes Quick Change Gear—less Bench

Bed Lengths	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	15 ¾-in.	20 ¾-in.	26 ¾-in.	33 ¾-in.
Catalog Number.....	487-Y	487-Z	487-A	487-R
Shipping Weight, Crated.....	521 lbs.	546 lbs.	571 lbs.	596 lbs.
Code Word.....	Dunac	Duneg	Duzem	Duzow

This Lathe is also supplied in the Standard Change Gear type.

10" COLLET LATHES

1-inch  
Collet  
Lathe



## 10-inch 1" Collet Countershaft Driven Precision Bench Lathe

Series "S"—Quick Change Gear—Back-Geared—Belt Drive to Spindle

The 10-inch Swing 1" Collet Capacity Quick Change Gear Bench Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 48 for specifications.

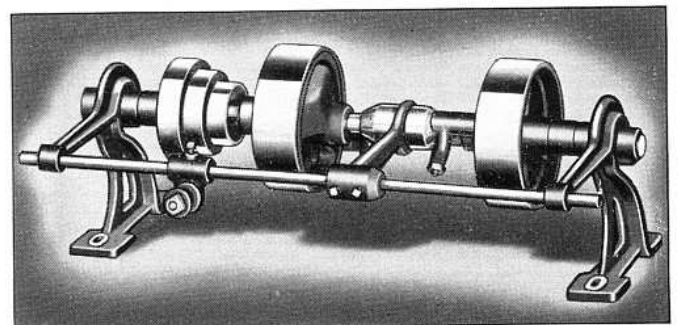
A Special Headstock, with 1 $\frac{3}{8}$ " hole through the spindle and 1" capacity through collet, makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing.

Improved Features of lathe include: alloy steel headstock spindle, carburized, hardened, ground, and superfinished; integral headstock bearings; ball thrust bearing; double wall apron with all gears of steel, and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed.

Attachments, Chucks, and Tools for this lathe are shown in the back of catalog. These attachments and accessories greatly increase the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of: reversing countershaft with two fric-

tion clutch pulleys; large and small face plates; forged steel heat-treated tool post; thread cutting stop; tool steel centers for headstock and tailstock spindles; spindle sleeve; wrenches; quick change gear box; installation plan, and book "How to Run a Lathe." Bench is not included in price of lathe. Blue print for making bench supplied on request, see page 99.



Double Friction Countershaft for Lathe

### 10-inch 1" Collet Countershaft Driven Bench Lathes Quick Change Gear—less Bench

Bed Lengths	3-ft.	3 $\frac{1}{2}$ -ft.	4-ft.	4 $\frac{1}{2}$ -ft.
Distance Between Centers	15 $\frac{3}{4}$ -in.	20 $\frac{3}{4}$ -in.	26 $\frac{3}{4}$ -in.	33 $\frac{3}{4}$ -in.
Catalog Number	87-YB	87-ZB	87-AB	87-RB
Shipping Weight, Crated	450 lbs.	475 lbs.	500 lbs.	525 lbs.
Code Word	Tares	Taruh	Tawim	Tawoh

This Lathe is also supplied in the Standard Change Gear type.



# 9-inch "Workshop" Lathes Models A, B, and C

Specifications Apply to all 9-inch "Workshop" Lathes in this Catalog

All types of 9-inch swing "Workshop" Precision Lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, saddle, and bed. Specifications given below apply to all Model A, Model B, and Model C 9-inch "Workshop" Lathes.

## Capacity of Lathe

Swing over bed and saddle wings.....	9 1/4"
Swing over saddle cross slide.....	5 1/2"

## Spindle Speeds

Standard Spindle Speeds (subject to 5% variation)	
R.P.M. of spindle, back gears engaged.....	41, 72, 127
R.P.M. of spindle, direct belt driven.....	212, 370, 658
High Spindle Speeds in addition to standard spindle speeds (Regular equipment on 12-Speed Lathes, and Motor Driven Tool Room Lathes, optional on other models at extra cost)	
R.P.M. of spindle, back gears engaged.....	79, 138, 246
R.P.M. of spindle, direct belt driven.....	408, 716, 1270
V-Belt Driven Lathe Spindle Speeds	
R.P.M. of spindle, back gears engaged.....	46, 63, 85, 117
R.P.M. of spindle, direct belt driven.....	239, 326, 442, 609

## Threads and Feeds

Model A Lathe—Quick Change Gear and Automatic Apron	
Threads—48 selections R.H. or L.H.....	4 to 224 per inch
Longitudinal Feeds—friction clutch—48 selections R.H. or L.H.....	.0015" to .0853"
Cross Feeds—friction clutch—48 selections R.H. or L.H.....	.0004" to .0252"
Model B Lathe—Automatic Apron—Independent Change Gears	
Threads—45 selections R.H. or L.H.....	4 to 160 per inch
Longitudinal Feeds—friction clutch—26 selections R.H. or L.H.....	.0021" to .0155"
Cross Feeds—friction clutch—23 selections.....	.001" to .0046"
Model C Lathe—Plain Apron and Independent Change Gears	
Threads—45 selections R.H. or L.H.....	4 to 160 per inch
Longitudinal Feeds—through half-nuts and lead screw—14 feeds R.H. or L.H....	.0021" to .0156"
Cross Feeds.....	Hand operated
Size of Lead Screw, diameter, and threads per inch.....	3/4"-8

## Headstock

Large Spindle Bearing.....	1 13/16" Diam. x 1 29/32" Long
Small Spindle Bearing.....	1 3/8" Diam. x 1 1/8" Long
Hole through spindle.....	3/4"
Maximum collet capacity.....	1/2"
Size of Center, Morse taper.....	No. 2
Spindle nose diameter and threads per inch.....	1 1/2"-8
Width of cone pulley step for belt.....	1"
Face plate diameter.....	5 1/8"

## Compound Rest

Cross slide will travel.....	5 7/8"
Angular hand feed of compound rest top slide.....	2 1/4"

## Tool Post

Size of opening for tool holder shank.....	3/8" x 1 3/16"
Size of cutter bits tool holder takes.....	1/4" sq.

## Tailstock

Size of Morse taper centers.....	No. 2
Spindle travel.....	2 1/8"
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	1 1/16"

## Motor

Horsepower of motor required for 9-inch "Workshop" Lathes with horizontal motor drive, underneath motor drive, or pedestal motor drive.....	1/4 H.P.
Horsepower of motor required for 9-inch "Workshop" 12-Speed Lathes, and Tool Room Lathes.....	1/2 H.P.

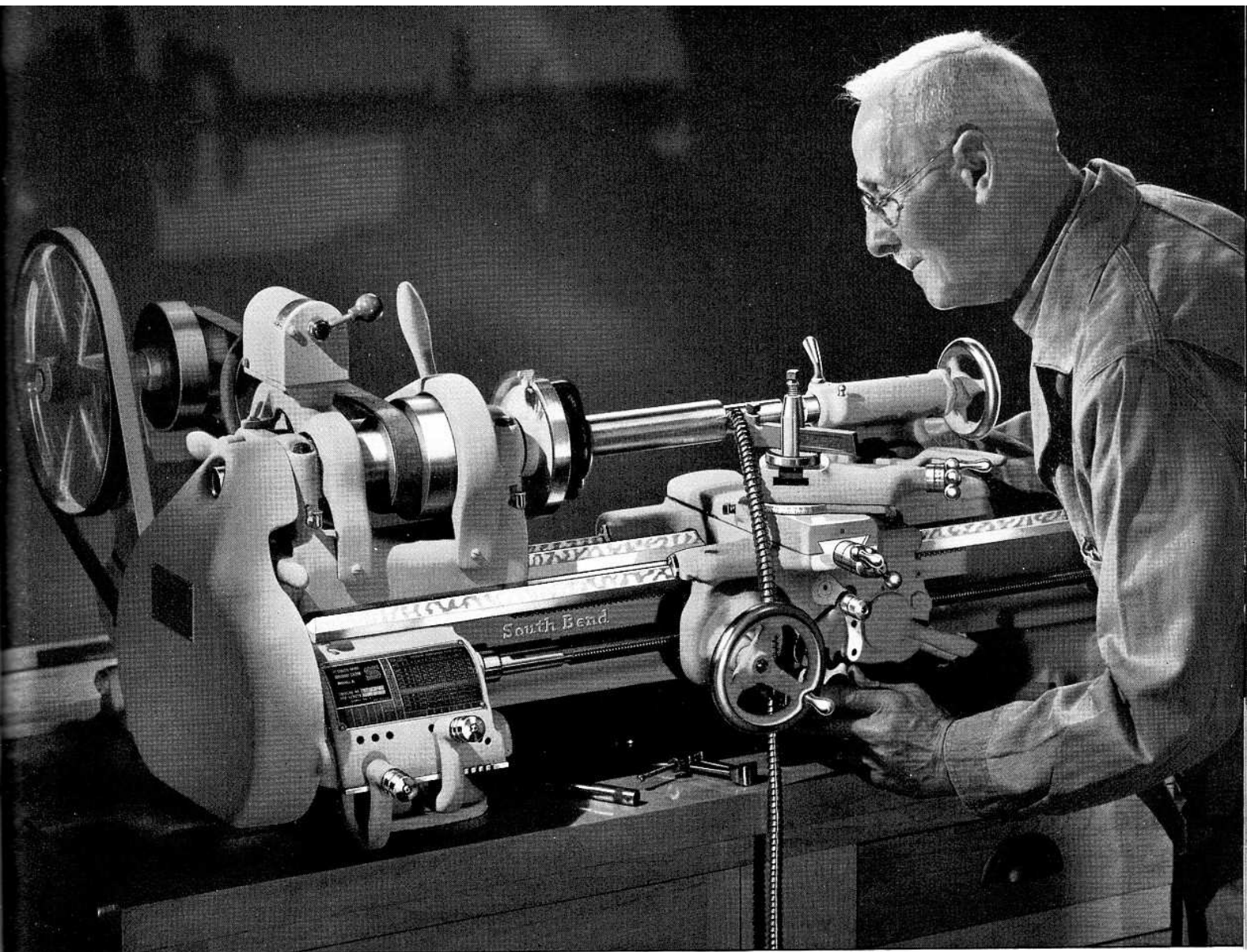
### Specifications of Lathes with Metric Lead Screws

Applying only to lathes with metric lead screw and metric graduations. See pages 95 to 97.

Quick change gear Model A Lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear Model B Lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Standard change gear Model C Lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	3.0 mm
Cross feed screw pitch.....	2.5 mm

For description of lathe features see pages 59 to 61





Model A 9" x 3' "Workshop" Horizontal Motor Driven Precision Bench Lathe

## Model A, Model B, and Model C South Bend 9-inch "Workshop" Lathes

South Bend 9-inch "Workshop" Lathes are precision tools, capable of machining work to the exacting tolerances demanded in modern industry. They are recommended for the production of small accurate parts in the manufacturing plant, for precision work in the tool room, for general use in the machine shop, auto service shop, laboratory, school shop, repair shop, home workshop, and shops of all kinds engaged in the machining of steel, cast iron, bronze, tool steel, fibre, bakelite, and similar materials.

Convenience and Ease of Operation are assured by the simple, practical design of these lathes. Well placed controls, large easy reading micrometer dials, lever reverse for threads and feeds, graduated compound rest, wrenchless bull gear lock, large hand wheels, and other features save time and effort.

SOUTH BEND, INDIANA, U.S.A.

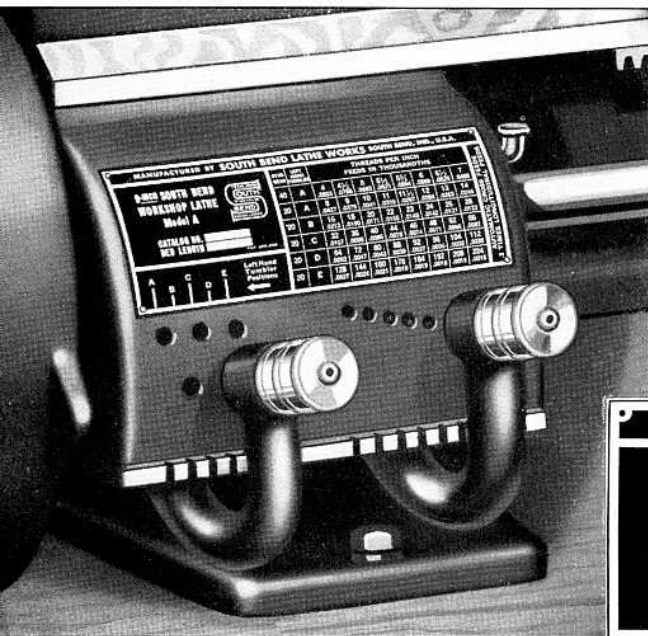
Accuracy and Durability are built into every South Bend 9-inch "Workshop" Lathe. The workmanship and materials are the best that can be obtained. All parts are made of cast iron or steel. No lead, zinc or other soft die-cast metals are used. The substantial design assures permanent alignment of the headstock, tailstock, and other major units. Unusually large bearing surfaces give this lathe the power and rigidity for taking heavy cuts and the precision accuracy for the most exacting tool and instrument work.

Highest Standards of inspection are maintained, from the planing of the lathe bed to the final inspection tests. All dovetails and V-ways are carefully handscraped, and the headstock, tailstock and other units are aligned with extreme precision.

9" W-SHOP LATHES



# Quick Change Gear Box for Model A 9-inch "Workshop" Lathes



Cuts Screw Threads 4 to 224 Per Inch  
Power Feed Range .0015" to .0853"

The quick change gear box provides 48 changes for threads and feeds as listed on the index chart below. Right and left hand screw threads, 8 to 224 per inch, are instantly available without changing a gear. Coarse threads, 4 to 7 per inch, are obtained by using a 40-tooth stud gear, supplied with lathe. All gears in the gear box are made of steel.

This gear box is designed for cutting all English and American standard screw threads. For those desiring metric system screw threads, we can supply metric transposing gears, or a metric lead screw and quick change gear box. See pages 95 to 97.

MANUFACTURED BY SOUTH BEND LATHE WORKS SOUTH BEND, IND., U.S.A.

9-INCH SOUTH BEND WORKSHOP LATHE Model A

CATALOG NO. \_\_\_\_\_ BED LENGTH \_\_\_\_\_

TRADE MARK SOUTH BEND ENGINE LATHES

STUD GEAR	LEFT HAND TUMBLER	THREADS PER INCH FEEDS IN THOUSANDTHS							
		4	4 1/2	5	5 1/2	5 3/4	6	6 1/2	7
40	A	.0853	.0758	.0683	.0621	.0594	.0569	.0525	.0488
20	A	.0427	.0379	.0341	.0310	.0297	.0284	.0263	.0244
20	B	.16	.18	.20	.22	.23	.24	.26	.28
20	C	.32	.36	.40	.44	.46	.48	.52	.56
20	D	.107	.095	.085	.078	.074	.071	.066	.061
20	E	.64	.72	.80	.88	.92	.96	1.04	1.12
20	E	.0053	.0047	.0043	.0039	.0037	.0036	.0033	.0030
20	E	.128	.144	.160	.176	.184	.192	.208	.224
		.0027	.0024	.0021	.0019	.0019	.0018	.0016	.0015

Left Hand Tumbler Positions: A, B, C, D, E

Automatic Cross Feeds: 3 TIMES LONGITUDINAL FEEDS

Above—Quick Change Gear Box  
Right—Index Chart Showing Threads and Feeds on Quick Change Gear Lathe

## Change Gear Equipment for 9-inch "Workshop" Lathes Used on Model B, and Model C Lathes

CHART FOR THREADS AND FEEDS  
9-INCH WORKSHOP MODEL B LATHE

THREADS PER INCH	STUD GEAR	IDLER GEARS	SCREW GEAR	CROSS FEEDS	LONG. FEEDS
4	24	FIG. 1	48		
4 1/2	24	FIG. 1	54		
5	16	FIG. 1	40		
5 1/2	16	FIG. 1	44		
6	16	FIG. 1	48		
6 1/2	16	FIG. 1	52		
7 1/2	16	FIG. 1	60		
8	32	FIG. 2	32		
9	32	FIG. 2	36		
10	32	FIG. 2	40		
11	32	FIG. 2	44		
11 1/2	32	FIG. 2	46		
12	32	FIG. 2	48		
13	32	FIG. 2	52		
14	32	FIG. 2	56		
16	24	FIG. 2	48		
18	24	FIG. 2	54		
20	16	FIG. 2	40		
22	18	FIG. 2	44		
24	16	FIG. 2	48	.0046	.0155
26	16	FIG. 2	52	.0039	.0131
27	16	FIG. 2	54	.0037	.0126
28	16	FIG. 2	56	.0036	.0122
30	16	FIG. 2	60	.0034	.0114
32	32	FIG. 3	32	.0031	.0107
36	32	FIG. 3	36	.0028	.0095
40	32	FIG. 3	40	.0025	.0085
44	32	FIG. 3	44	.0023	.0078
46	32	FIG. 3	46	.0022	.0074
48	32	FIG. 3	48	.0021	.0071
52	32	FIG. 3	52	.0019	.0065
54	32	FIG. 3	54	.0019	.0063
56	32	FIG. 3	56	.0018	.0061
60	32	FIG. 3	60	.0017	.0057
64	16	FIG. 3	32	.0016	.0053
72	16	FIG. 3	36	.0014	.0047
80	16	FIG. 3	40	.0013	.0043
88	16	FIG. 3	44	.0011	.0039
92	16	FIG. 3	46	.0011	.0037
96	16	FIG. 3	48	.0010	.0036
104	16	FIG. 3	52	.0010	.0033
112	16	FIG. 3	56		.0030
120	16	FIG. 3	60		.0028
160	16	FIG. 4	80		.0021

Automatic Power Feeds Through Friction Clutch in Inches Per Revolution of Heads Tock Spindle

Index Chart Showing Threads and Feeds on "Workshop" Model B Lathe

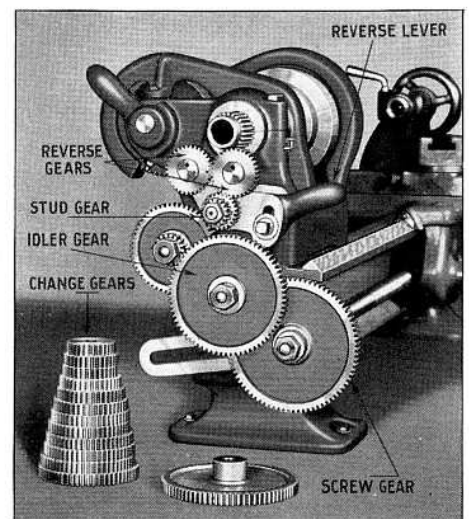
All 9-inch "Workshop" Model B and Model C Lathes are equipped with a set of independent change gears, which provide a wide range of screw threads and turning feeds. Model B Lathes have an automatic apron (as described on page 61) providing instantaneous power longitudinal feeds or power cross feeds. On Model C Lathes the power longitudinal feeds are obtained by engaging the half-nut and lead screw. Cross feed is hand operated on Model C Lathes.

An index chart attached to the lathe shows the arrangement of the change gears for the various screw threads, and power longitudinal feeds. Power cross feeds are shown on Model B index chart.

Screw threads cut on the Model B, and Model C "Workshop" Lathes range from 4 to 160 per inch right or left hand, including 11 1/2 and 27 pipe threads, as listed on the index chart.

The automatic power longitudinal turning feeds available on the "Workshop" Lathe range from .0021" to .0155" on Model B, and from .0021 to .0156 on Model C Lathes.

The automatic power cross feeds available on the Model B 9-inch "Workshop" Lathes range from .001" to .0046".



Gear Guard Removed to Show Plain Change Gear Equipment For All "Workshop" Model B, and Model C Lathes

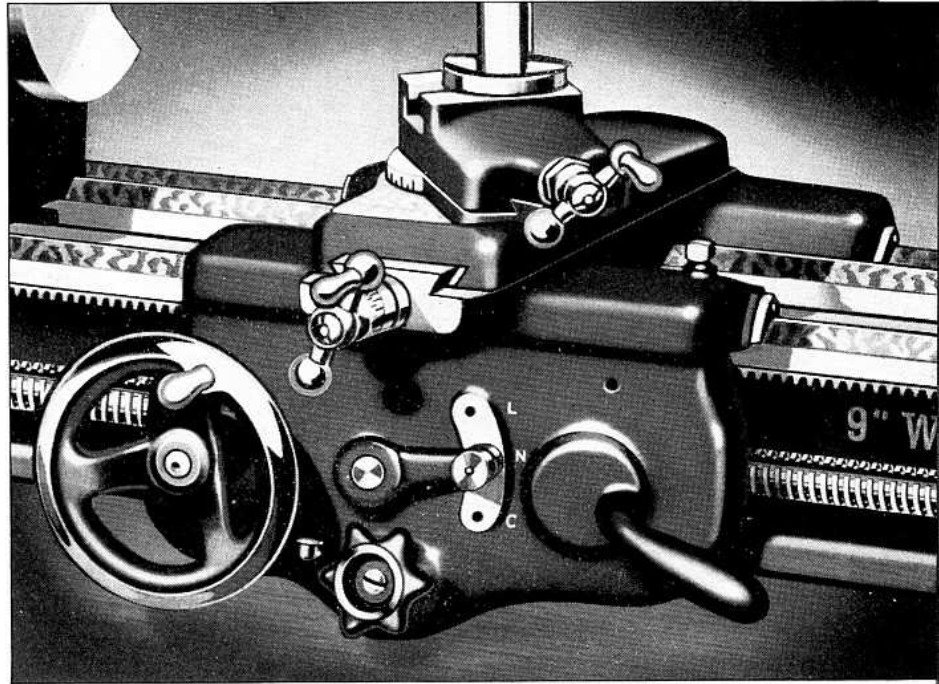
# Automatic Apron for Models A and B 9" "Workshop" Lathes

Friction Clutch Drive for Power Cross Feeds and Power Longitudinal Feeds

The full automatic apron supplied with all Model A Quick Change Gear Type, and Model B Plain Change Gear Type South Bend 9-inch "Workshop" Lathes is equipped with a powerful worm drive and friction clutch for operating both the automatic power cross feeds and the automatic power longitudinal feeds. The friction clutch drive permits engaging or disengaging instantly either the power cross feed or power longitudinal feed.

The feed change knob on the front of the apron has three positions: top for the automatic power longitudinal feeds; center for a neutral position; and bottom for the automatic power cross feeds. It is impossible to engage both feeds at the same time.

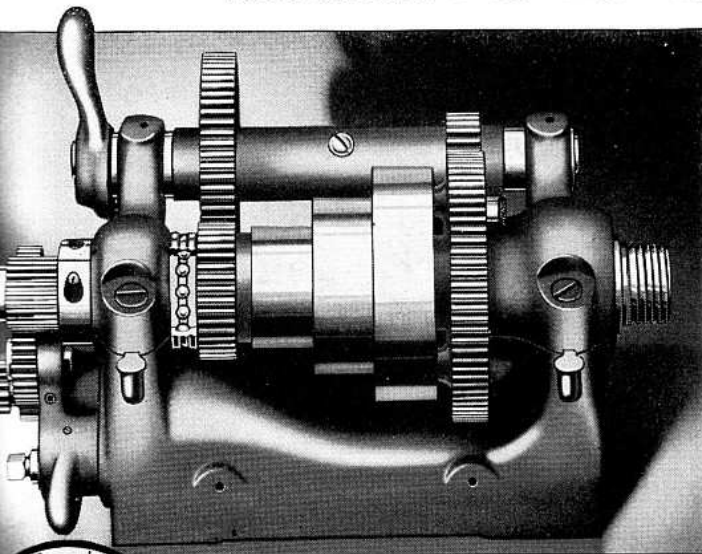
The power cross feeds and power longitudinal feeds are both operated by a worm which is driven by a spline in the lead screw. The threads of the lead screw and the half-nuts are used only when cutting screw threads. An automatic safety interlock prevents engaging the power carriage feeds while the half-nuts are in use.



Full Automatic Apron for 9-inch "Workshop" Lathes

# Back-Geared Headstock for 9-inch "Workshop" Lathes

Used on all 9-inch "Workshop" Lathes—Models A, B, and C



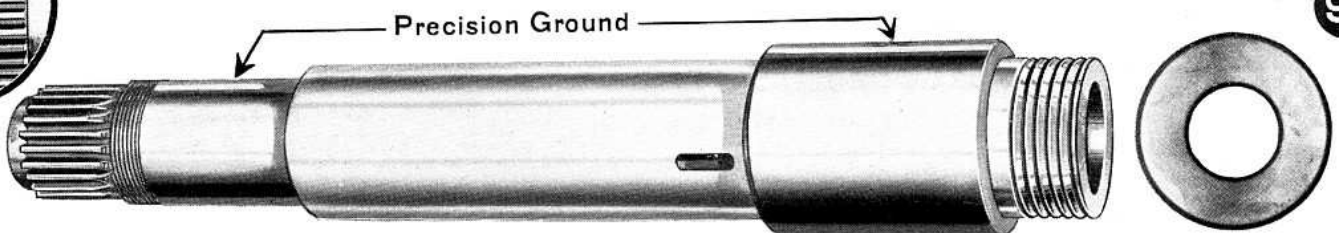
Above—Back-Geared Headstock for 9" "Workshop" Lathe, Guards Removed  
Left—Ball Thrust Bearing for Spindle

All "Workshop" headstocks have quiet running machine-cut semi-steel back gears and balanced cone pulley to assure smooth operation at all spindle speeds. A quick acting wrenchless bull gear lock permits engaging or disengaging the back gears without using a wrench.

## Heat-Treated Alloy Steel Spindle

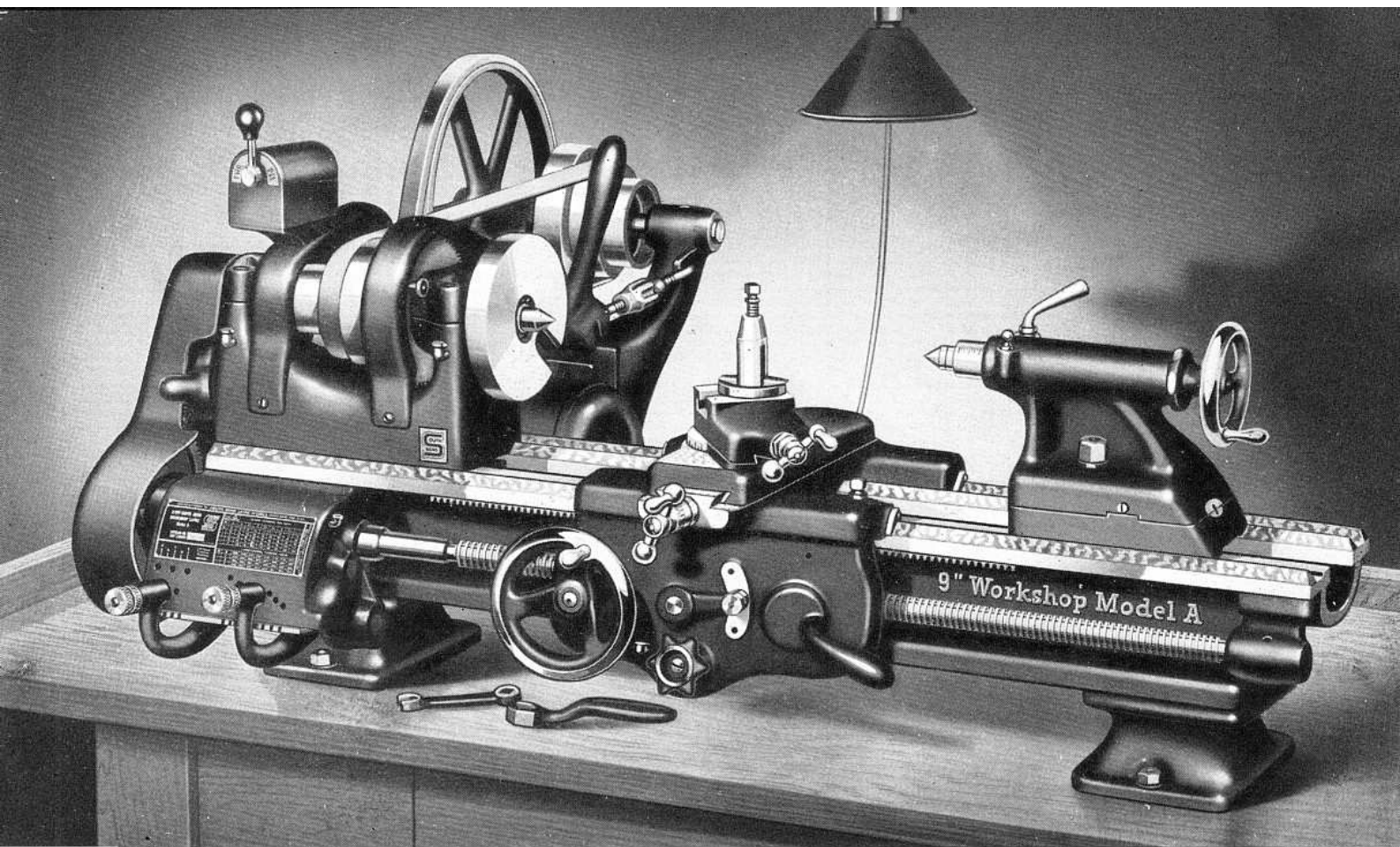
The headstock spindle is made of alloy steel with carburized, hardened, and ground bearing surfaces with a hardness of 51 to 56 on Rockwell C scale. All "Workshop" Twelve-Speed and Tool Room Lathes are equipped with superfinished spindle as regular equipment. On other models the spindle can be superfinished to order at extra cost, if specified when lathe is ordered. See price list.

The spindle runs in integral cast iron bearings that are equipped with an improved capillary oiling system and are adjustable for wear. A ball thrust bearing and threaded take-up nut eliminate end play.



Above—Heat-Treated Alloy Steel Headstock Spindle with Carburized, Hardened and Ground Bearing Surfaces.  
Right—Cross Section of Headstock Spindle Showing Bearing Surfaces Hardened to a Depth of  $\frac{3}{64}$ ".





## Model A 9-inch "Workshop" Horizontal Motor Driven Bench Lathe With Quick Change Gear Box and Automatic Apron

The 9-inch "Workshop" Model A Lathe has a full quick change gear box and automatic apron having worm drive and friction clutch, for power feeds as described on the preceding pages. This is a high quality precision lathe built to most exacting machine tool specifications. It is a practical lathe for manufacturing parts for typewriters, adding machines, radios, electric appliances and similar articles. See specifications on page 58.

The Quick Change Gear Box provides for cutting right and left hand screw threads from 4 to 224 per inch. Power longitudinal feeds .0015" to .0853" and power cross feeds .0004" to .0252" are also obtained through the gear box. See page 60.

This Lathe is also made with a twelve-speed drive, V-belt drive, countershaft drive, and pedestal motor drive, as shown on the following pages.

Drive Equipment consists of: horizontal motor drive unit; motor pulley with  $\frac{5}{8}$ " hole; reversing switch; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is extra, see page 91.

Regular Equipment included in price consists of: full automatic apron; quick change gear box; carburized, hardened and ground alloy steel headstock spindle; graduated compound rest; face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; in-

STUD GEAR	LEFT HAND TUMBLER	THREADS PER INCH FEEDS IN THOUSANDTHS							AUTOMATIC CROSS FEEDS 3 TIMES LONGITUDINAL FEEDS
		4	4½	5	5½	5¾	6	6½	
40	A	.0853	.0758	.0683	.0621	.0594	.0569	.0525	.0488
20	A	8	9	10	11	11½	12	13	14
		.0427	.0379	.0341	.0310	.0297	.0284	.0263	.0244
20	B	16	18	20	22	23	24	26	28
		.0213	.0190	.0171	.0155	.0148	.0142	.0131	.0122
20	C	32	36	40	44	46	48	52	56
		.0107	.0095	.0085	.0078	.0074	.0071	.0066	.0061
20	D	64	72	80	88	92	96	104	112
		.0053	.0047	.0043	.0039	.0037	.0036	.0033	.0030
20	E	128	144	160	176	184	192	208	224
		.0027	.0024	.0021	.0019	.0019	.0018	.0016	.0015

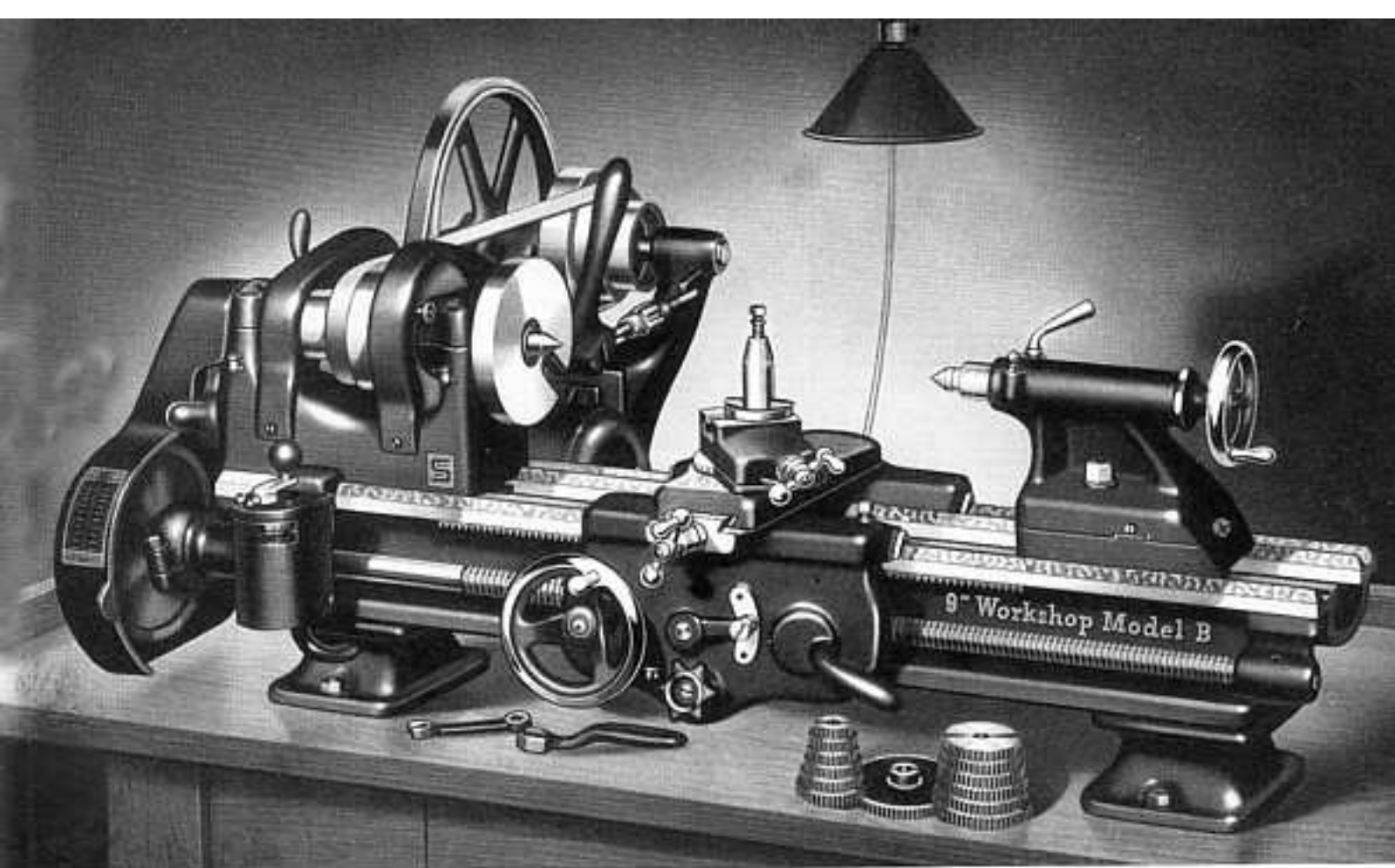
Index Chart Showing Threads and Feeds on  
9-inch "Workshop" Model A Lathe

stallation plan, and book "How to Run a Lathe." Bench is not included in price of lathe. See page 99 for information on benches.

### 9-inch "Workshop" Model A Horizontal Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	444-Y	444-Z	444-A	444-R
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	340 lbs.	365 lbs.	390 lbs.	415 lbs.
Size of Motor Required	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word	Nuyaf	Nujej	Nuyin	Nuyot

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



## Model B 9-inch "Workshop" Horizontal Motor Driven Bench Lathe With Plain Change Gear Equipment and Automatic Apron

The 9-inch "Workshop" Model B Lathe is equipped with automatic apron having worm drive and friction clutch for power feeds as described on page 61. Change gears are supplied with the lathe for cutting right and left hand screw threads from 4 to 160 per inch, also for power cross feeds and longitudinal feeds as listed on the index chart at right. See page 58 for specifications.

This Lathe is also made with a twelve-speed drive, V-belt drive, underneath motor drive, countershaft drive, pedestal motor drive.

**Drive Equipment** includes: adjustable horizontal motor drive unit; motor pulley with  $\frac{3}{8}$ " hole; reversing switch; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is not included in price of lathe, but is extra, see page 91.

**Regular Equipment** included in price of lathe consists of: full automatic apron; carburized, hardened and ground alloy steel headstock spindle; set of change gears; graduated compound rest; face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; installation plan, and book "How to Run a Lathe." Bench is not included in price of lathe, see page 99.

### 9-inch "Workshop" Model B Horizontal Motor Driven Bench Lathes—less Bench

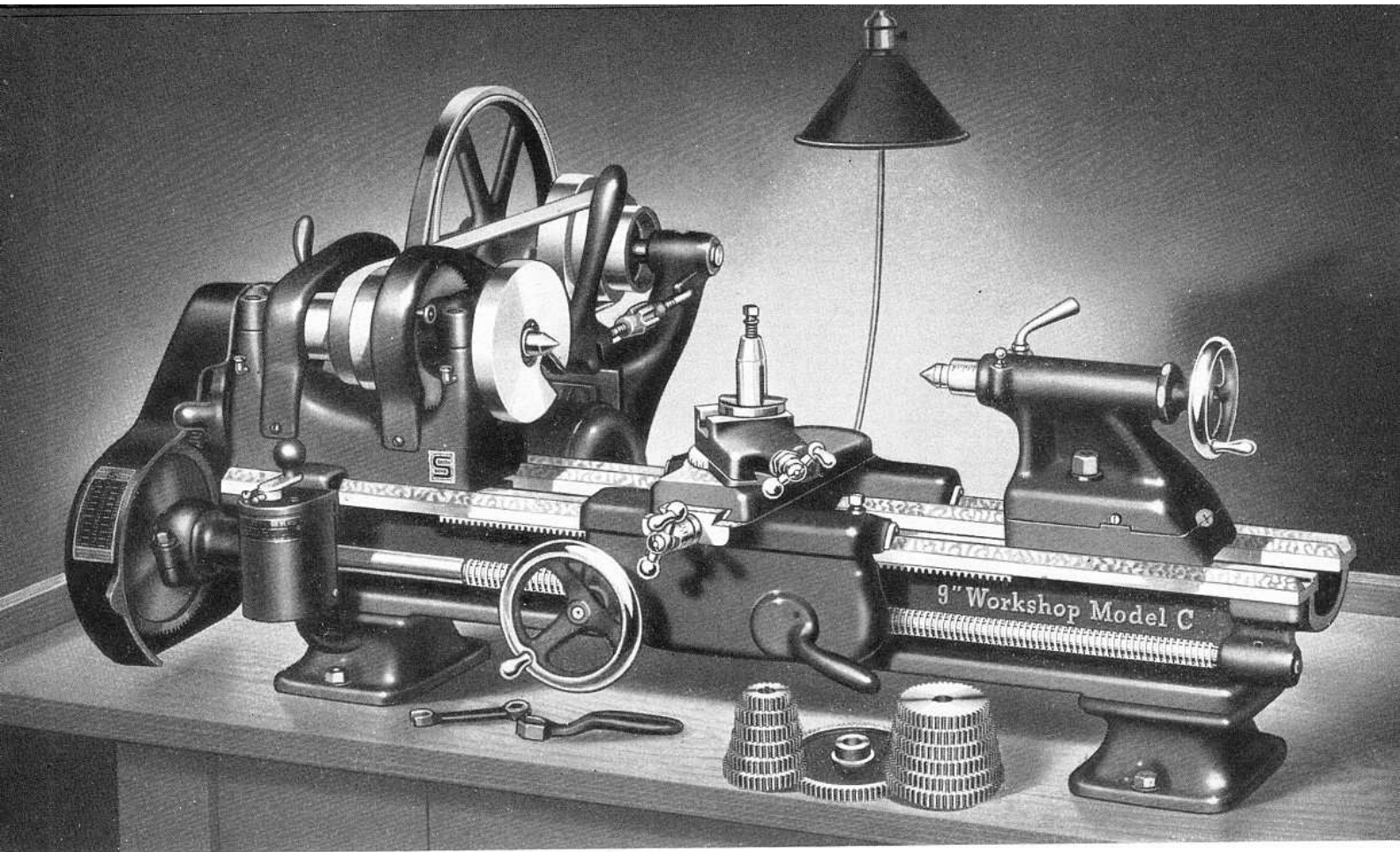
Bed Length	3-ft.	3 $\frac{1}{2}$ -ft.*	4-ft.*	4 $\frac{1}{2}$ -ft.
Catalog Number	477-Y	477-Z	477-A	477-B
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	330 lbs.	395 lbs.	380 lbs.	405 lbs.
Size of Motor Required	$\frac{1}{2}$ h.p.	$\frac{1}{2}$ h.p.	$\frac{1}{2}$ h.p.	$\frac{1}{2}$ h.p.
Code Word	Males	Matnc	Mavej	Maved

\*NOTE—The 3 $\frac{1}{2}$ " and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.

CHART FOR THREADS AND FEEDS 9-INCH WORKSHOP MODEL B LATHE					
THREADS PER INCH	DIAMETER	FEEDS	CROSS FEEDS	LONG FEEDS	FIG.
4	24	FIG. 1	40		FIG. 1
4 1/2	24	FIG. 1	54		
5 1/4	18	FIG. 1	44		
5 1/2	18	FIG. 1	48		
6	18	FIG. 1	48		FIG. 2
6 1/2	18	FIG. 1	52		
7	18	FIG. 1	56		
7 1/2	18	FIG. 1	60		
8	22	FIG. 2	32		FIG. 3
9	22	FIG. 2	36		
10	22	FIG. 2	40		
11 1/4	22	FIG. 2	44		
12	32	FIG. 2	48		FIG. 4
13	32	FIG. 2	52		
14	32	FIG. 2	56		
15	24	FIG. 2	54		
16	16	FIG. 2	48		FIG. 5
22	16	FIG. 2	44	3046 3155	
24	16	FIG. 2	48	3042 3142	
26	16	FIG. 2	52	3039 3131	
27	16	FIG. 2	54	3037 3128	FIG. 6
28	16	FIG. 2	56	3035 3122	
30	16	FIG. 2	58	3033 3114	
32	16	FIG. 2	60	3034 3114	
32	32	FIG. 3	32	3036 3181	FIG. 7
36	32	FIG. 3	36	3029 3096	
40	32	FIG. 3	40	3025 3098	
44	32	FIG. 3	44	3023 3078	
48	32	FIG. 3	48	3222 3074	FIG. 8
52	32	FIG. 3	52	3019 3071	
54	32	FIG. 3	54	3018 3068	
56	32	FIG. 3	56	3018 3061	
60	32	FIG. 3	60	3017 3057	FIG. 9
64	32	FIG. 3	64	3016 3053	
68	32	FIG. 3	68	3014 3047	
72	32	FIG. 3	72	3013 3043	
80	32	FIG. 3	80	3011 3039	FIG. 10
88	32	FIG. 3	88	3011 3031	
96	32	FIG. 3	96	3011 3026	
104	32	FIG. 3	104	3010 3022	
112	32	FIG. 3	112	3009 3020	FIG. 11
120	32	FIG. 3	120	3008 3018	
128	32	FIG. 3	128	3007 3016	
136	32	FIG. 3	136	3007 3014	
160	16	FIG. 4	80	3001	FIG. 12

Index Chart Showing Threads and Feeds on 9-inch "Workshop" Model B Lathe





## Model C 9-inch "Workshop" Horizontal Motor Driven Bench Lathe With Plain Change Gears and Geared Screw Feed Apron

The 9-inch "Workshop" Model C Bench Lathe with Horizontal Motor Drive is recommended for use in shops requiring the finest type of back-gearred, screw cutting precision lathe. This lathe has hand-operated cross feed, and power longitudinal feeds obtained by engaging the half-nuts with the lead screw. Change gears are supplied with the lathe for cutting right and left hand screw threads from 4 to 160 per inch and for power longitudinal feeds .0021" to .0156" per revolution of spindle. See page 58.

Drive Equipment included in the price of lathe consists of: adjustable horizontal motor drive unit; motor pulley with  $\frac{5}{8}$ " hole; reversing switch; bracket for attaching switch to lathe; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is not included in price of lathe, see page 91.

Regular Equipment included in price consists of: plain apron; carburized, hardened and ground alloy steel headstock spindle; compound rest; face plate; tool post; centers; sleeve; wrenches; installation plan, and book "How to Run a Lathe." Bench is not included in price. For information on benches, see page 99.

### Model C 9-inch "Workshop" Horizontal Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	415-YC	415-ZC	415-AC	415-RC
Distance Between Centers.....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	320 lbs.	345 lbs.	370 lbs.	395 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Kefav	Kefez	Kefid	Kefoj

\*NOTE—The 3½' and 4' bed lengths, because of greater distance between centers, are recommended for general machine work.

CHART FOR THREADS AND FEEDS 9-INCH WORKSHOP MODEL C LATHE			
THREADS PER INCH	STUD GEAR	IDLER GEARS	SCREW GEAR
4	24	FIG. 1	48
4½	24	FIG. 1	54
5	16	FIG. 1	40
5½	16	FIG. 1	44
6	16	FIG. 1	48
6½	16	FIG. 1	52
7	16	FIG. 1	56
7½	16	FIG. 1	60
8	32	FIG. 2	32
9	32	FIG. 2	36
10	32	FIG. 2	40
11	32	FIG. 2	44
11½	32	FIG. 2	46
12	32	FIG. 2	48
13	32	FIG. 2	52
14	32	FIG. 2	56
16	24	FIG. 2	48
18	24	FIG. 2	54
22	16	FIG. 2	44
24	16	FIG. 2	48
26	16	FIG. 2	52
27	16	FIG. 2	54
28	16	FIG. 2	56
30	16	FIG. 2	60
32	32	FIG. 3	32
36	32	FIG. 3	36
40	32	FIG. 3	40
44	32	FIG. 3	44
46	32	FIG. 3	46
48	32	FIG. 3	48
52	32	FIG. 3	52
54	32	FIG. 3	54
56	32	FIG. 3	56
60	32	FIG. 3	60
64	16	FIG. 3	32
72	16	FIG. 3	36
80	16	FIG. 3	40
88	16	FIG. 3	44
92	16	FIG. 3	46
96	16	FIG. 3	48
104	16	FIG. 3	52
112	16	FIG. 3	54
120	16	FIG. 3	60
160	48	FIG. 4	80
	40	FIG. 4	80
	32	FIG. 4	80
	24	FIG. 4	80
	16	FIG. 4	80
			.0156
			.0125
			.0114
			.0109
			.0104
			.0096
			.0089
			.0083
			.0073
			.0062
			.0052
			.0042
			.0031
			.0021

FIG. 1

FIG. 2

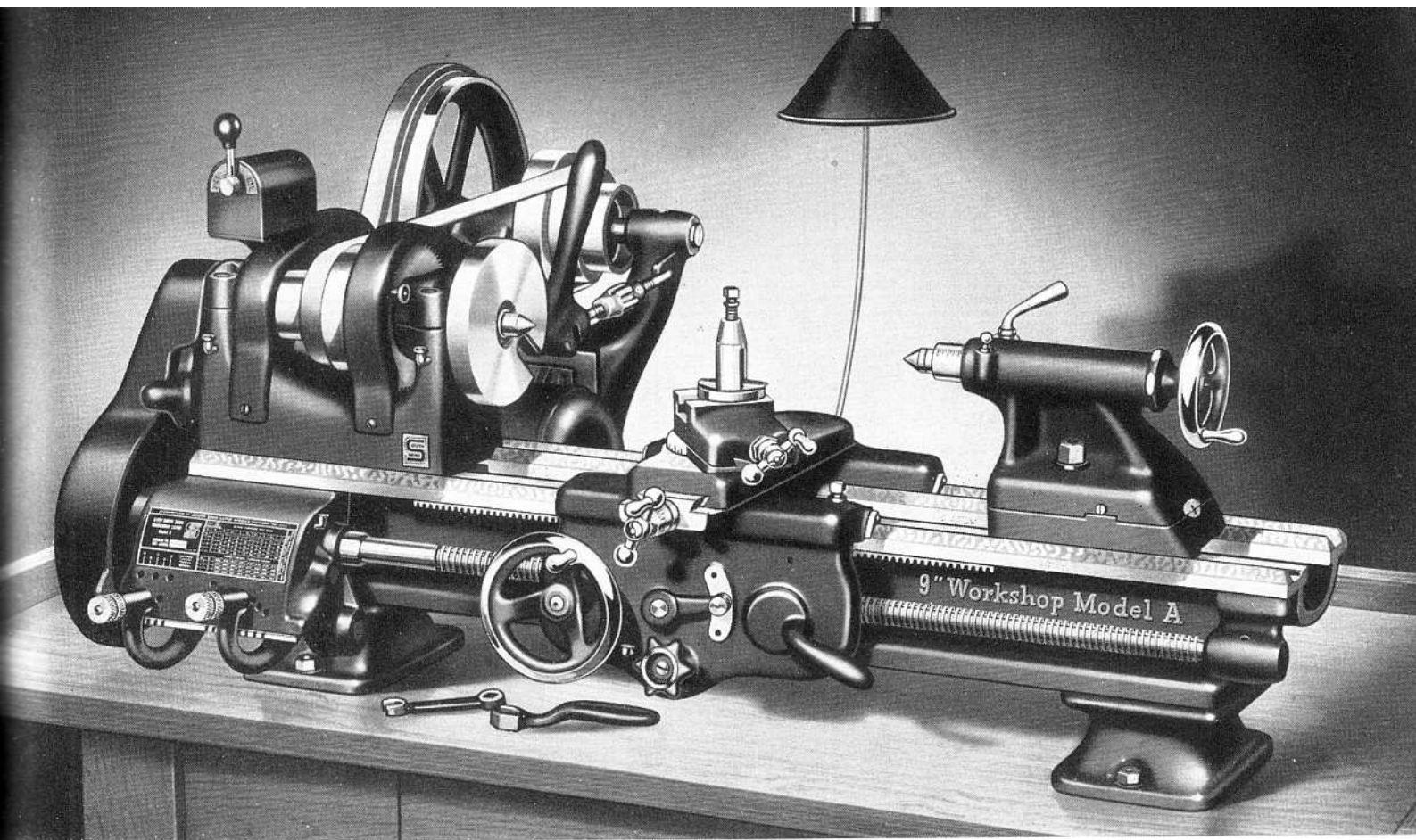
FIG. 3

FIG. 4

LONGITUDINAL POWER SCREW FEED IN INCHES PER SPINDLE REVOLUTION

Index Chart Showing Threads and Feeds on 9-inch "Workshop" Model C Lathe

9" WORKSHOP LATHES



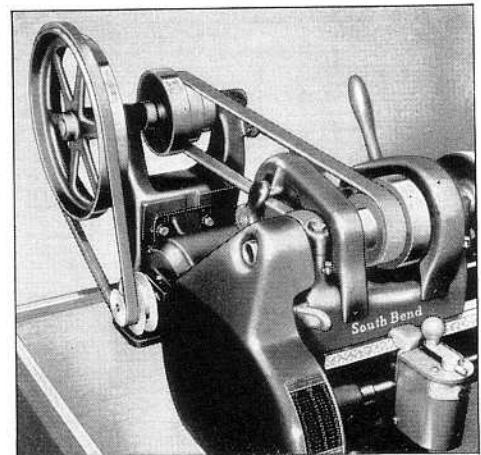
## 9" "Workshop" Twelve-Speed Horizontal Motor Driven Lathes Model A, Model B, and Model C Precision Bench Lathes

The 9-inch "Workshop" Model A *Twelve-Speed* Horizontal Motor Driven Bench Lathe is illustrated above. The Model B, and Model C Lathes are also made with this drive. These lathes have heat-treated alloy steel spindle with journal bearing surfaces carburized, hardened, ground, and superfinished. For specifications of lathe see page 58.

The *Twelve-Speed Drive* provides a series of twelve spindle speeds ranging from 41 to 1270 R.P.M. This drive is recommended for machining small diameter parts of steel, cast iron, brass, and aluminum, also for turning plastics, wood, etc.

Drive Equipment includes: adjustable motor drive unit; motor pulley with  $\frac{3}{4}$ " hole; reversing switch; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is extra, see pg. 91.

Regular Equipment is the same as for corresponding models listed on pages 62, 63, and 64. Bench is not included, see page 99.



(Patented)

End View of 9-inch "Workshop"  
Lathe Showing *Twelve-Speed*  
Horizontal Motor Drive

9" WORKSHOP LATHES

### Model A 9-inch "Workshop"

#### *Twelve-Speed* Horizontal Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	644-Y	644-Z	644-A	644-R
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	355 lbs.	380 lbs.	405 lbs.	430 lbs.
Size of Motor Required	½ h.p.	½ h.p.	½ h.p.	½ h.p.
Code Word	Kewar	Kewev	Kewiz	Kewof

### Model B 9-inch "Workshop"

#### *Twelve-Speed* Horizontal Motor Driven Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	677-Y	677-Z	677-A	677-R
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	345 lbs.	370 lbs.	395 lbs.	420 lbs.
Size of Motor Required	½ h.p.	½ h.p.	½ h.p.	½ h.p.
Code Word	Kewul	Kexim	Kexos	Kexuy

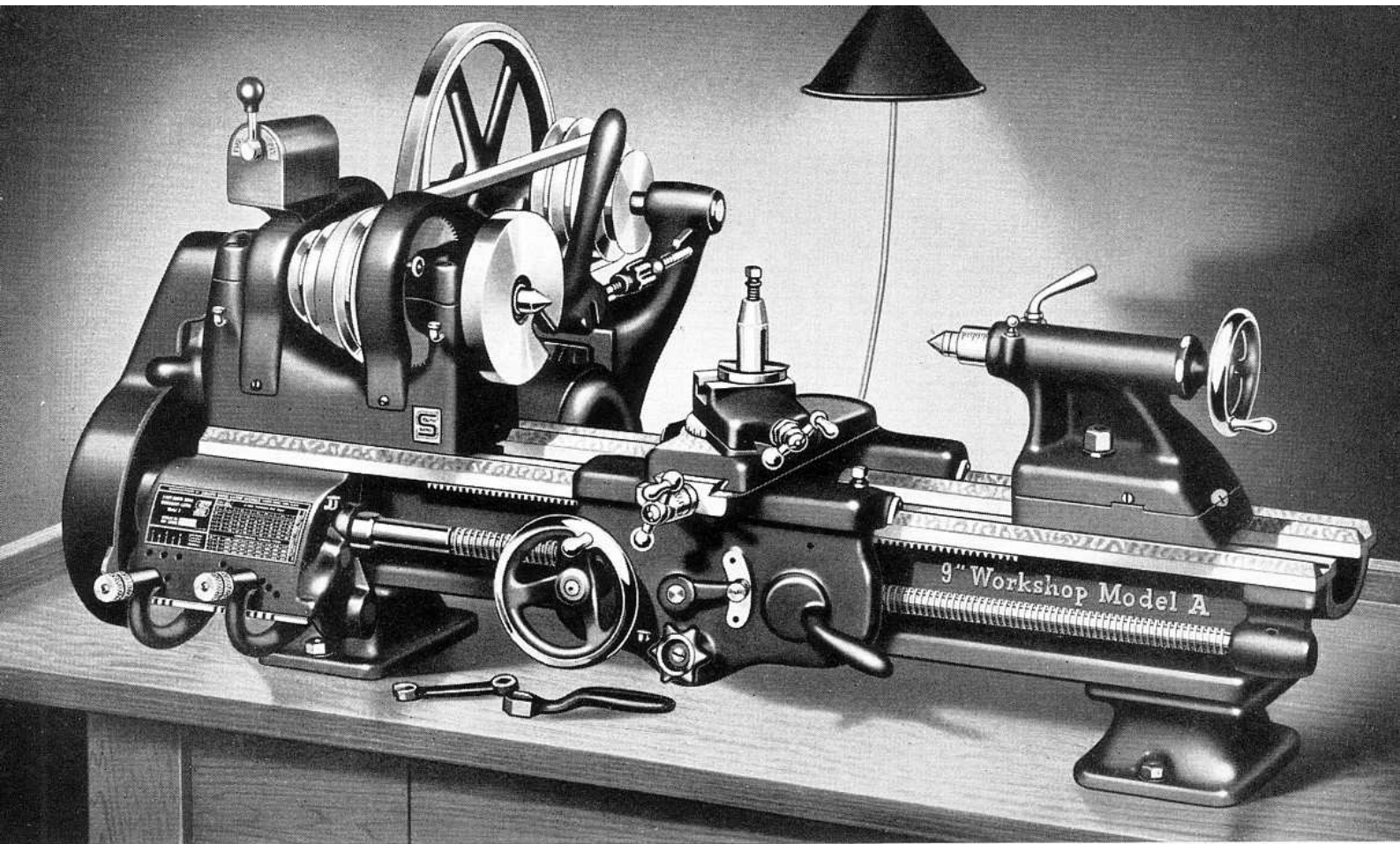
### Model C 9-inch "Workshop"

#### *Twelve-Speed* Horizontal Motor Driven Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	615-YC	615-ZC	615-AC	615-RC
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	335 lbs.	360 lbs.	385 lbs.	410 lbs.
Size of Motor Required	½ h.p.	½ h.p.	½ h.p.	½ h.p.
Code Word	Getay	Getec	Getig	Getom

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.





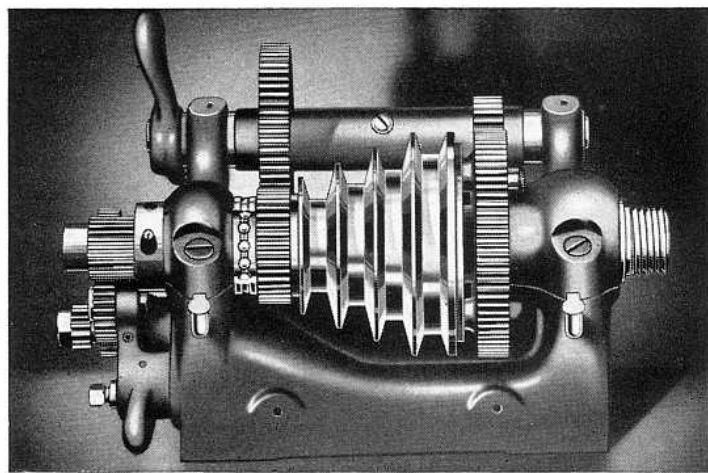
## 9-inch "Workshop" V-Belt Horizontal Motor Driven Lathes Model A, Model B, and Model C Precision Bench Lathes

The 9-inch "Workshop" Model A V-Belt Horizontal Motor Driven Lathe is illustrated above. Model B, and Model C Lathes are also made with this drive. These lathes have carburized, hardened and ground alloy steel headstock spindle, and are identical with the lathes shown on pages 62, 63, and 64, except for the drive. See page 58 for lathe specifications.

The V-Belt Drive consists of a set of V-belt cone pulleys for the lathe headstock and countershaft. Eight spindle speeds are provided as follows: 46, 63, 85, 117, 239, 326, 442 and 609 R.P.M.

Drive Equipment consists of: V-belt horizontal motor drive unit; motor pulley with  $\frac{5}{8}$ " hole; reversing switch; wiring between motor and switch, and belting. Motor is extra, see page 91.

Regular Equipment is the same as for corresponding models listed on pages 62, 63 and 64. Bench is not included, in price, see page 99.



Headstock of 9-inch "Workshop" Lathe (with Gear Guards Removed) Showing 4-Step Cone Pulley for V-Belt Drive

### Model A 9-inch "Workshop"

V-Belt Horizontal Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	544-Y	544-Z	544-A	544-R
Distance Between Centers....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	340 lbs.	365 lbs.	390 lbs.	415 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Paqol	Paqur	Parak	Pasus

### Model B 9-inch "Workshop"

V-Belt Horizontal Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	577-Y	577-Z	577-A	577-R
Distance Between Centers....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	330 lbs.	355 lbs.	380 lbs.	405 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Patal	Patep	Patit	Patoz

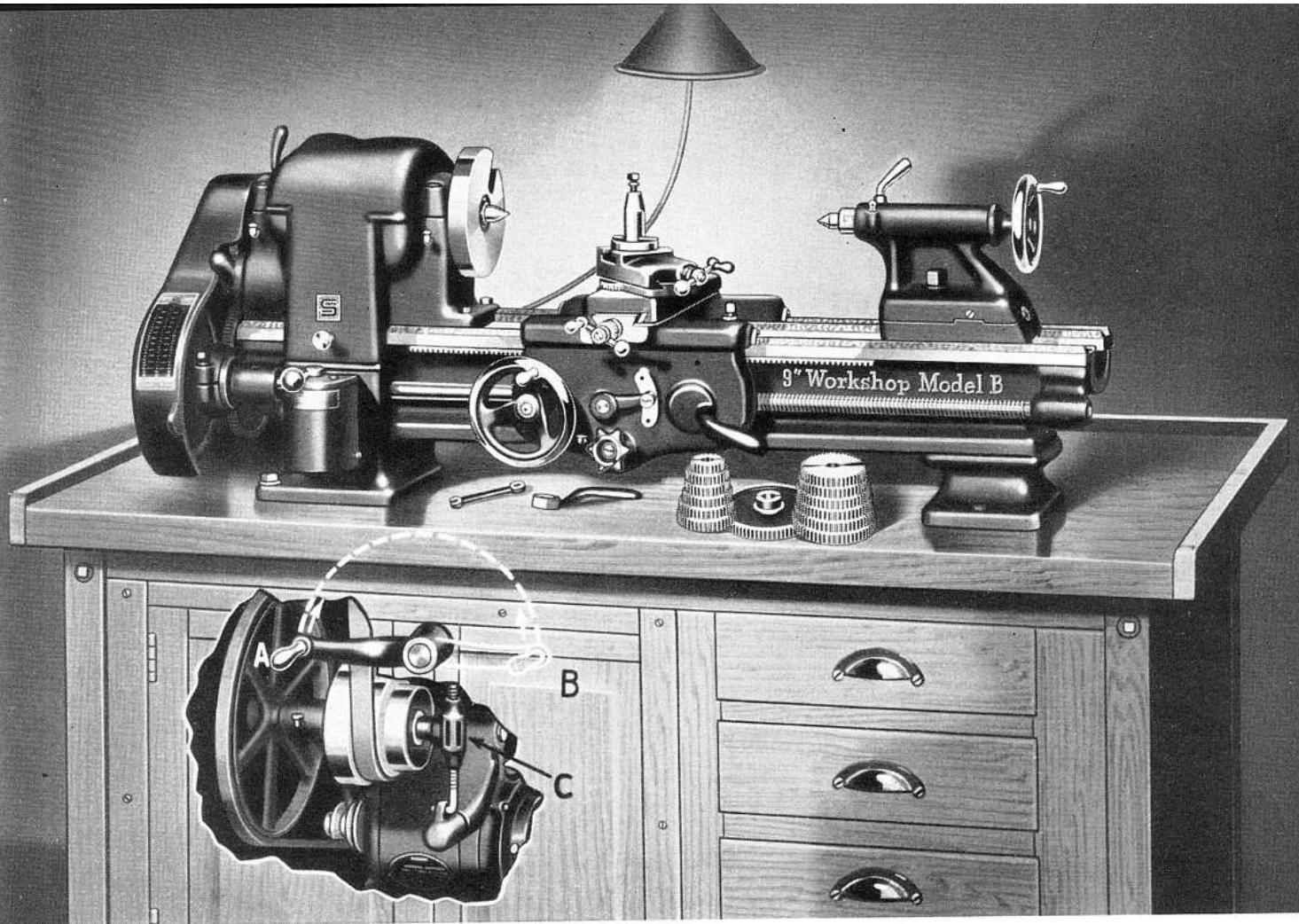
### Model C 9-inch "Workshop"

V-Belt Horizontal Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	515-YC	515-ZC	515-AC	515-RC
Distance Between Centers....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	320 lbs.	345 lbs.	370 lbs.	395 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Lihat	Lihex	Lihib	Lihoh

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.

9" WORKSHOP LATHES



## 9-inch "Workshop" Underneath Motor Driven Lathes Model B, and Model C Precision Bench Lathes

The 9-inch "Workshop" Model B Lathe with underneath motor drive is illustrated above. The 9-inch "Workshop" Model C Lathe is also made with this drive. These lathes are the same as the lathes shown on pages 63 and 64 respectively, except for the necessary alterations in the headstock and bed to accommodate the underneath motor drive. The Model A 9-inch "Workshop" Lathe is not made with this drive. See page 58 for specifications of lathe.

Improved Features include: back-gearred headstock; automatic apron; ball thrust bearing for spindle; precision lead screw; improved capillary oiling system; graduated compound rest; and carburized, hardened, and ground alloy steel headstock spindle. The bed and legs are cast integral. Heavy box braces are cast in at short intervals to reinforce the bed, and give added strength and rigidity.

The Motor Drive Unit is bolted underneath the bench top. The cone pulley belt tension is released by moving crank handle "A" to position "B," and the hinged cone pulley cover may be raised for shifting cone pulley belt. Any desired belt tension can be obtained by adjusting turnbuckle "C."

Drive Equipment included in the price of lathe consists of: underneath belt motor drive unit; motor

pulley with  $\frac{5}{8}$ " hole; reversing switch; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is not included in price but is extra. For motor information see page 91.

Regular Equipment included in price of lathe consists of: automatic apron (on Model B only); graduated compound rest; face plate; tool post; tool steel lathe centers; headstock spindle sleeve; wrenches; set of change gears; installation plan, and book "How to Run a Lathe." Bench is not included, see page 99.

### Model B 9-inch "Workshop" Underneath Motor Driven Bench Lathes—less Bench

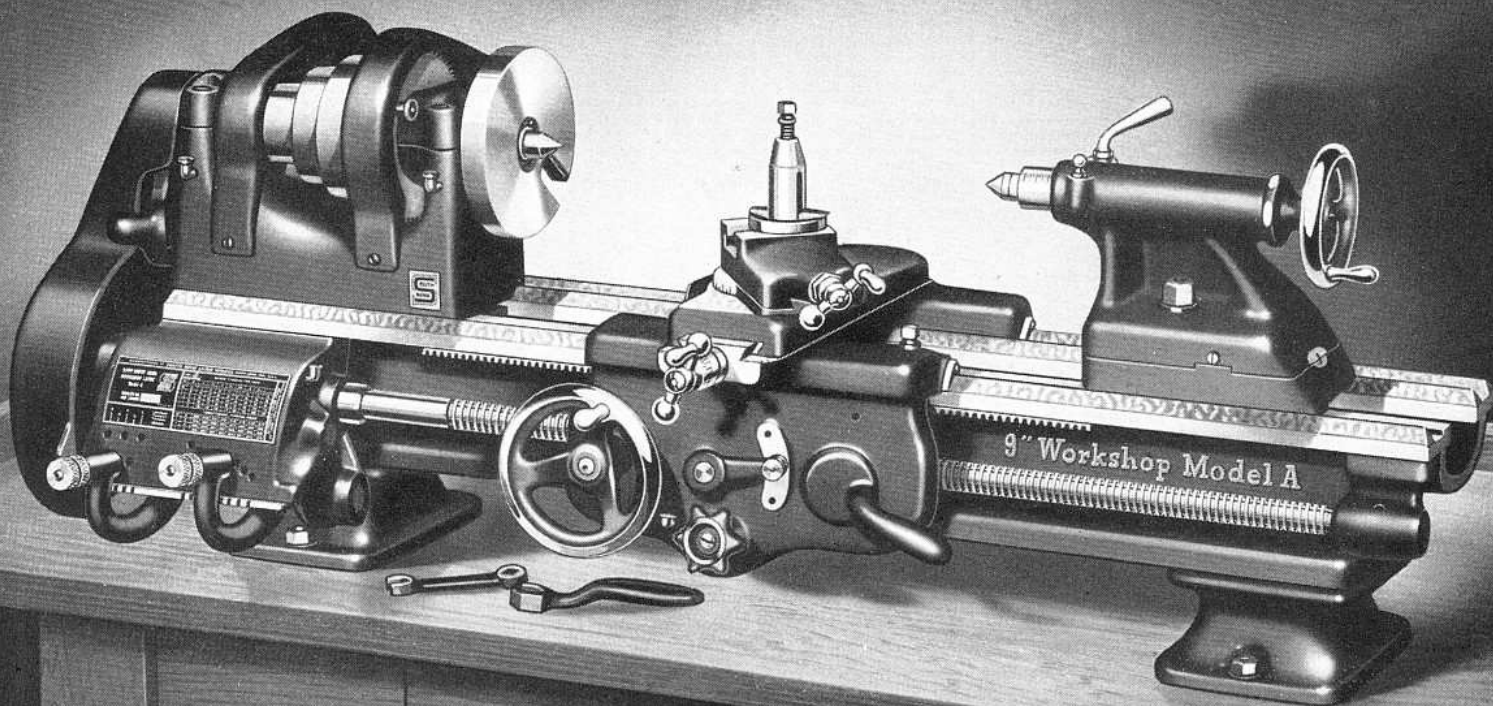
Bed Length	3-ft.	3½-ft.*	4-ft.*
Catalog Number . . . . .	177-YB	177-ZB	177-AB
Distance Between Centers . . . . .	16-in.	22-in.	28-in.
Shipping Weight, Crated . . . . .	380 lbs.	405 lbs.	430 lbs.
Size of Motor Required . . . . .	¼ h.p.	¼ h.p.	¼ h.p.
Code Word . . . . .	Paqax	Paqeb	Paqif

### Model C 9-inch "Workshop" Underneath Motor Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*
Catalog Number . . . . .	115-YBC	115-ZBC	115-ABC
Distance Between Centers . . . . .	16-in.	22-in.	28-in.
Shipping Weight, Crated . . . . .	370 lbs.	395 lbs.	420 lbs.
Size of Motor Required . . . . .	¼ h.p.	¼ h.p.	¼ h.p.
Code Word . . . . .	Pecam	Pecaq	Pecug

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.





## 9-inch "Workshop" Countershaft Driven Bench Lathes

### Model A, Model B, and Model C Precision Bench Lathes

The 9-inch "Workshop" Model A Lathe with countershaft drive is illustrated above. The 9-inch "Workshop" Model B, and Model C Lathes are also made with this drive. These lathes are the same as the lathes shown on pages 62, 63, and 64 respectively, except for the type of drive. This lathe is also supplied with floor legs, see price list.

The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. The countershaft drive permits operating the lathe and several other machines from a lineshaft driven by a single motor and is the most economical type of drive for the large shop where a number of machines are operated simultaneously.

Improved Features include: back-geared headstock; carburized, hardened and ground alloy steel

headstock spindle; automatic apron; ball thrust bearing for spindle; precision lead screw; improved capillary oiling system; and graduated compound rest.

Equipment included in price of Model A, Model B, and Model C Lathes is the same as listed on pages 62, 63, and 64 respectively, with the exception that a double friction countershaft is supplied instead of the motor drive equipment.

#### Model A 9-inch "Workshop" Countershaft Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers . . .	16-in.	22-in.	28-in.	34-in.
Catalog Number . . . . .	44-YB	44-ZB	44-AB	44-RB
Shipping Weight, Crated . . . .	320 lbs.	345 lbs.	370 lbs.	395 lbs.
Code Word . . . . .	Laxud	Layax	Layeb	Layif

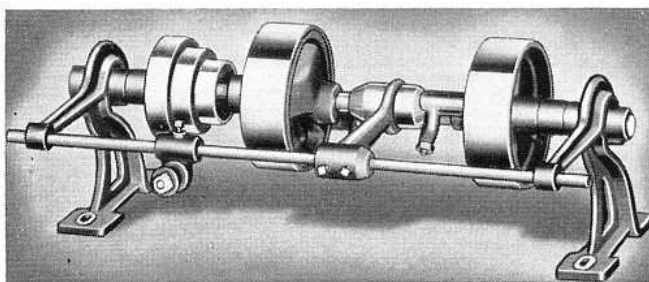
#### Model B 9-inch "Workshop" Countershaft Driven Bench Lathes—less Bench

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers . . .	16-in.	22-in.	28-in.	34-in.
Catalog Number . . . . .	77-YB	77-ZB	77-AB	77-RB
Shipping Weight, Crated . . . .	310 lbs.	335 lbs.	360 lbs.	385 lbs.
Code Word . . . . .	Layol	Layur	Lazak	Lazis

#### Model C 9-inch "Workshop" Countershaft Driven Bench Lathes—less Bench

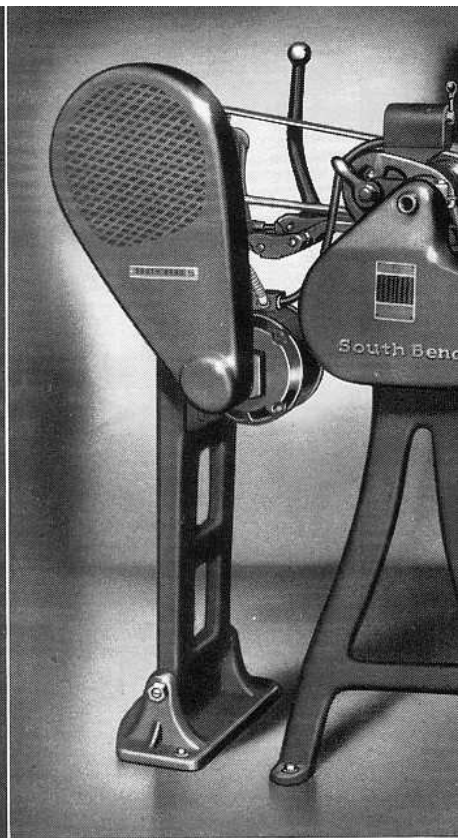
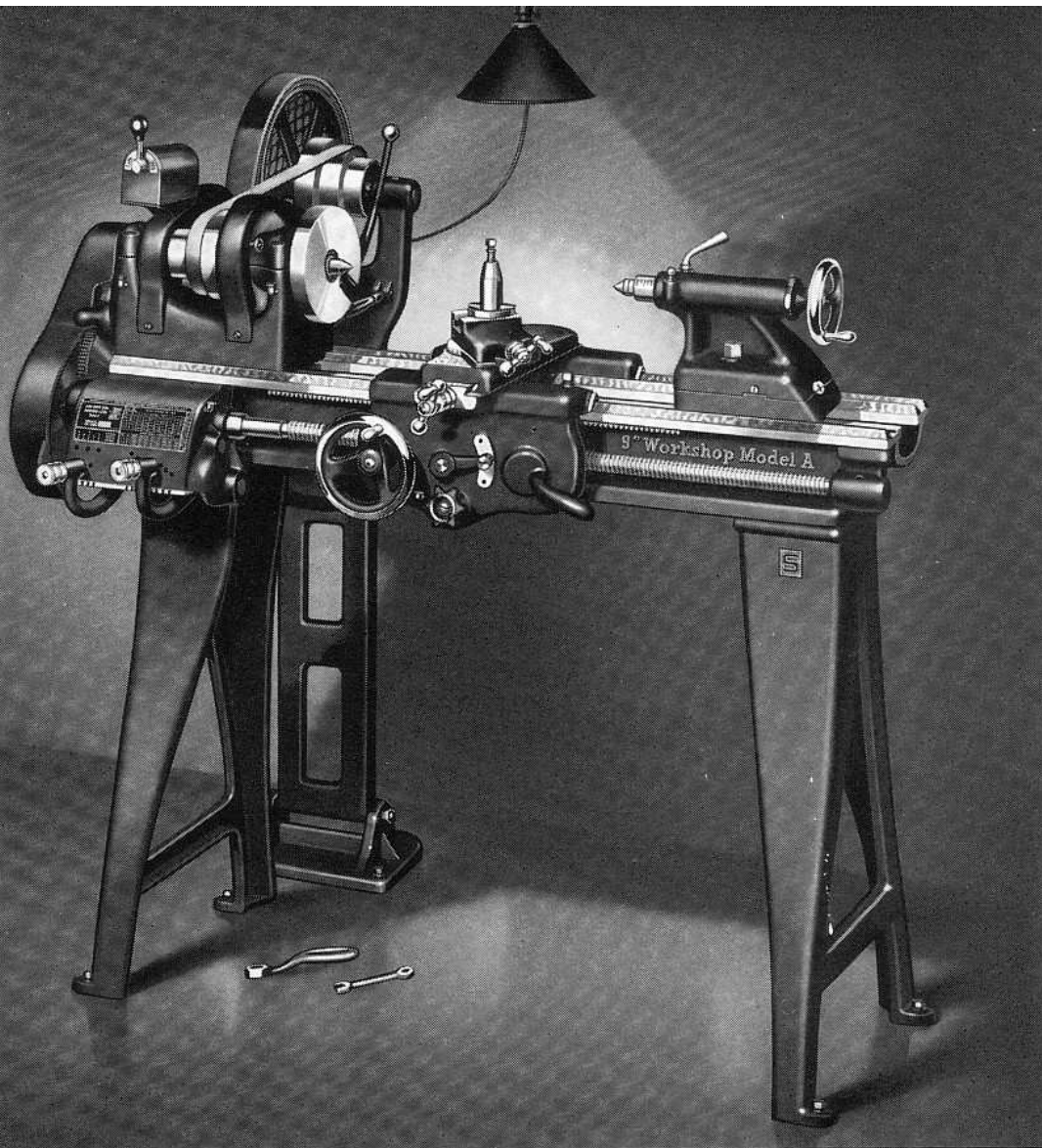
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers . . .	16-in.	22-in.	28-in.	34-in.
Catalog Number . . . . .	15-YBC	15-ZBC	15-ABC	15-RBC
Shipping Weight, Crated . . . .	300 lbs.	325 lbs.	350 lbs.	375 lbs.
Code Word . . . . .	Leheb	Lehif	Lehol	Lehur

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



Double Friction Countershaft for Lathe

9" WORKSHOP LATHES



(Patented)

Above—End View of Pedestal Motor Driven Lathe

Left—Front View of Pedestal Motor Driven Lathe

## 9-inch "Workshop" Pedestal Motor Driven Lathes

### Model A, Model B, and Model C Precision Floor Leg Lathes

The 9-inch "Workshop" Model A Lathe with pedestal motor drive is illustrated above. The 9-inch "Workshop" Model B, and Model C Lathes are also made with this drive. These lathes are the same as the lathes shown on pages 62, 63, and 64 respectively, except for the floor legs and the drive. See lathe specifications on page 58.

The Pedestal Motor Drive is very practical as it permits placing the lathe in any position in the shop. The lathe is relieved of all strain as the weight of the motor is supported by the pedestal, and an adjustable tension brace between the countershaft and the lathe headstock counteracts the pull of the belt.

Drive Equipment included in price of the lathe consists of: pedestal motor drive unit; motor pulley with  $\frac{5}{8}$ " hole; reversing switch; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is not included in price but is extra, see page 91.

Regular Equipment is the same as for the corresponding models listed on pages 62, 63, and 64.

SOUTH BEND, INDIANA, U.S.A.

#### Model A 9-inch "Workshop" Pedestal Motor Driven Lathes—with Floor Legs

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	944-Y	944-Z	944-A	944-R
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	580 lbs.	605 lbs.	630 lbs.	655 lbs.
Size of Motor Required	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word	Hezac	Hezeg	Hezik	Hezoq

#### Model B 9-inch "Workshop" Pedestal Motor Driven Lathes—with Floor Legs

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	977-Y	977-Z	977-A	977-R
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	570 lbs.	595 lbs.	620 lbs.	645 lbs.
Size of Motor Required	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word	Hisem	Hisiq	Hisow	Hisuc

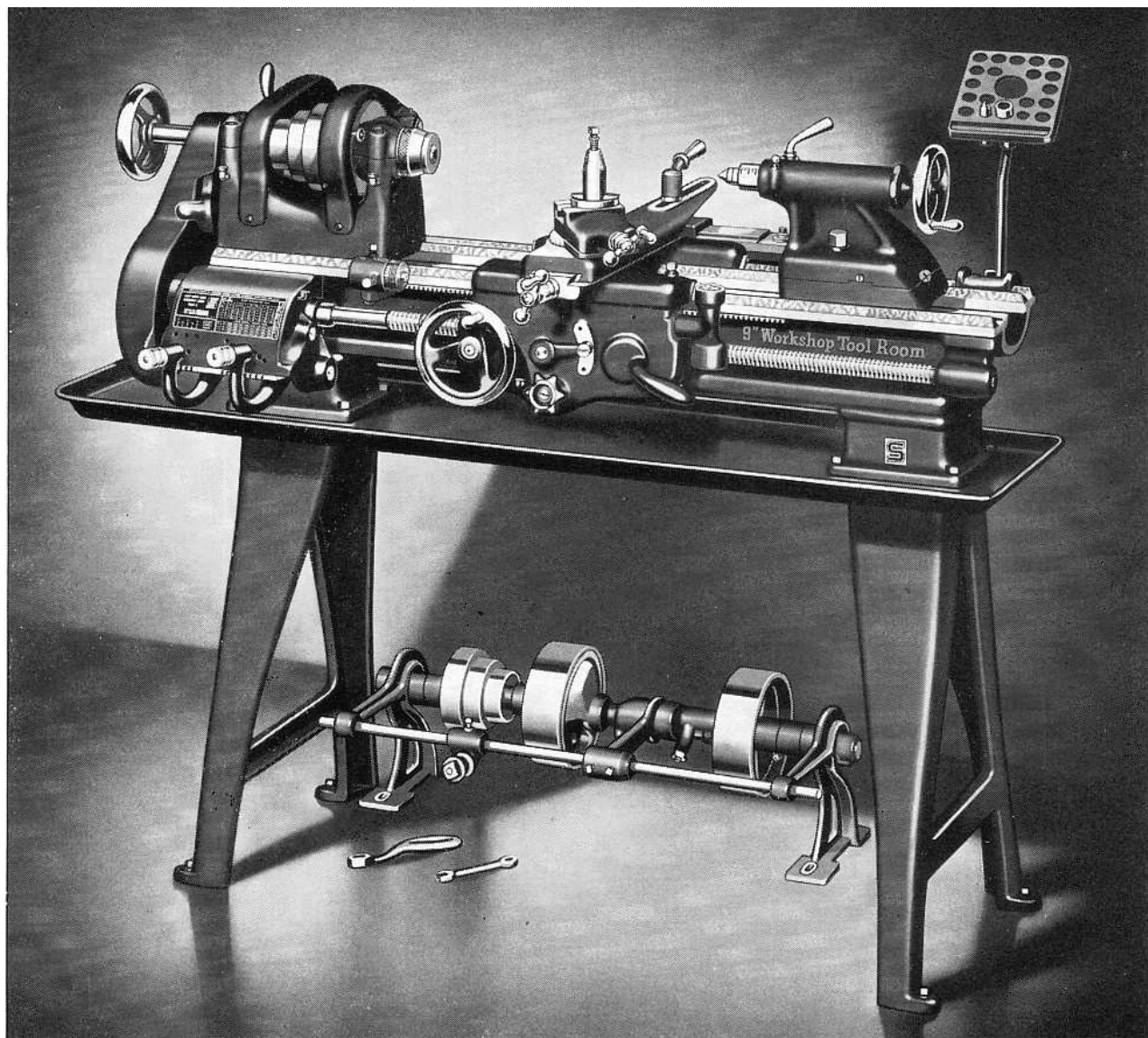
#### Model C 9-inch "Workshop" Pedestal Motor Driven Lathes—with Floor Legs

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number	915-YC	915-ZC	915-AC	915-RC
Distance Between Centers	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated	560 lbs.	585 lbs.	610 lbs.	635 lbs.
Size of Motor Required	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word	Peges	Pegiw	Pegob	Peguh

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.

9" WORKSHOP LATHES





## 9-inch "Workshop" Tool Room Precision Lathe—Model A With Quick Change Gear Box and Automatic Apron

The 9-inch "Workshop" Model A Tool Room Lathe is recommended for the most exacting classes of precision tool and gauge work. This lathe is supplied with countershaft drive and floor legs, as illustrated above, also with 12-speed pedestal motor drive. See page 69 of this catalog.

Features responsible for the excellent performance of this lathe include: a heat-treated alloy steel spindle with journal bearing surfaces carburized, hardened, ground, and superfinished; an improved quick change gear box which makes all threads and feeds quickly available; an automatic apron with worm drive and friction clutch permitting instant engagement or disengagement of power cross feeds and power longitudinal feeds; clear-cut easy reading graduations; large hand wheels; and conveniently arranged controls.

9-inch "Workshop" Tool Room Lathes—Model A  
Countershaft Drive—with Floor Legs

Bed Length	3-ft.	3½-ft.	4-ft.
Catalog Number.....	8044-Y	8044-Z	8044-A
Distance Between Centers.....	16-in.	22-in.	28-in.
Shipping Weight, Crated.....	495 lbs.	520 lbs.	545 lbs.
Code Word.....	Tunas	Tunog	Tusem

Tool Room Attachments included in price consist of: hand wheel type draw-in collet attachment with one collet, collet rack, plain taper attachment, thread dial indicator, micrometer carriage stop, chip pan, large face plate, and thread cutting stop.

Regular Equipment consists of: small face plate; tool post complete; tool steel spindle centers; headstock spindle sleeve; wrenches; quick change gear box; installation plan, and book "How to Run a Lathe."

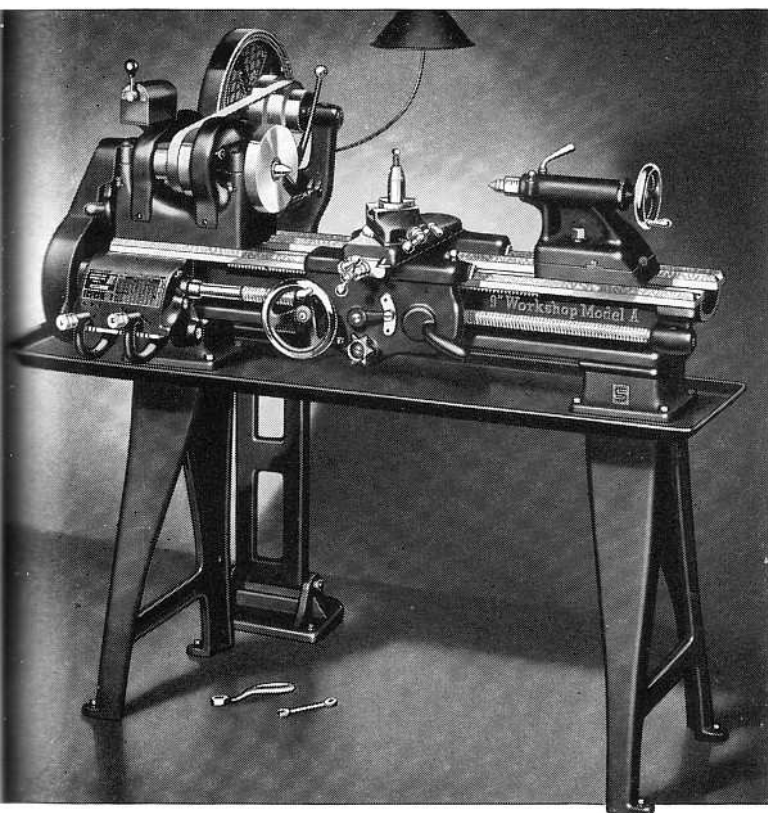
Drive Equipment. Countershaft driven lathe includes a reversing countershaft. Pedestal motor driven lathe includes: pedestal motor drive unit with double pulley providing twelve spindle speeds, 41 to 1270 R.P.M.; motor pulley with ¾" hole; reversing switch; wiring between motor and switch; V-belt; flat leather belt and lacing. Motor is extra, see page 91.

9-inch "Workshop" Tool Room Lathes—Model A  
Pedestal Motor Drive—with Floor Legs

Bed Length	3-ft.	3½-ft.	4-ft.
Catalog Number.....	8944-Y	8944-Z	8944-A
Distance Between Centers.....	16-in.	22-in.	28-in.
Shipping Weight, Crated.....	680 lbs.	705 lbs.	730 lbs.
Size of Motor Required.....	½ h.p.	½ h.p.	½ h.p.
Code Word.....	Pobes	Pobiw	Poceg

9" WORKSHOP LATHES

## 9" "Workshop" Pedestal Motor Driven Lathes—with Chip Pan Model A, Model B, and Model C Precision Lathes



The 9-inch "Workshop" Model A Lathe with chip pan and pedestal motor drive is illustrated at left. The 9-inch "Workshop" Model B, and Model C Lathes are also supplied with this equipment. These lathes are the same as the lathe shown on page 69, except for the chip pan. Motor is not included in price but is extra, see page 91.

### Model A 9-inch "Workshop" Pedestal Motor Driven Floor Leg Lathes—with Chip Pan

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	944-YO	944-ZO	944-AO	944-RO
Distance Between Centers....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	615 lbs.	640 lbs.	665 lbs.	690 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Lexaf	Lexej	Lexin	Lexot

### Model B 9-inch "Workshop" Pedestal Motor Driven Floor Leg Lathes—with Chip Pan

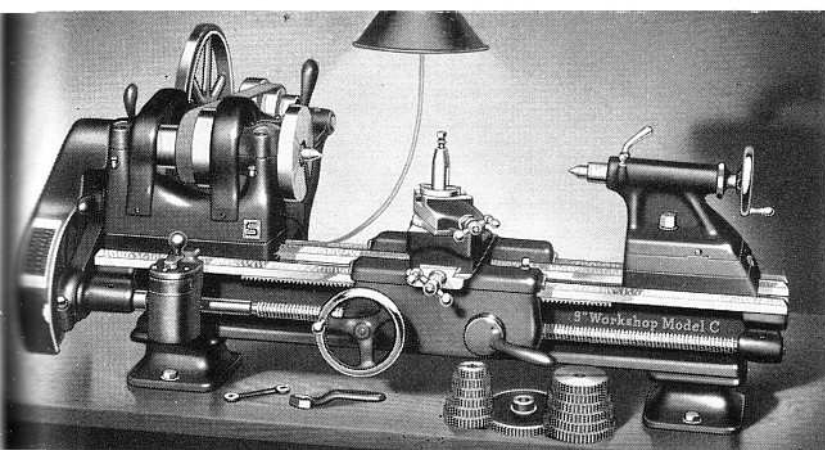
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	977-YO	977-ZO	977-AO	977-RO
Distance Between Centers....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	605 lbs.	630 lbs.	655 lbs.	680 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Lexuz	Leyat	Leyex	Leyib

### Model C 9-inch "Workshop" Pedestal Motor Driven Floor Leg Lathes—with Chip Pan

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Catalog Number.....	915-YO	915-ZO	915-AO	915-RO
Distance Between Centers....	16-in.	22-in.	28-in.	34-in.
Shipping Weight, Crated.....	595 lbs.	620 lbs.	645 lbs.	670 lbs.
Size of Motor Required.....	¼ h.p.	¼ h.p.	¼ h.p.	¼ h.p.
Code Word.....	Leyoh	Leyum	Lezag	Lezek

\*The 3½' and 4' bed lengths are recommended for general machine work. For Chip Pan Lathe with Countershaft Drive, see price list.

## 9" "Workshop" Horizontal Motor Drive—with Raising Blocks Model A, Model B, and Model C Precision Bench Lathes



### 11¼-inch Swing Over Lathe Bed

"Workshop" Lathes with raising blocks will take work up to 11¼" in diameter over the bed and up to 7¼" in diameter over the tool rest.

Model A, Model B, and Model C 9-inch "Workshop" Lathes with adjustable horizontal motor drive equipment and raising blocks are listed in the tabulation below. "Workshop" Lathes with other types of drives can also be supplied with raising blocks.

Equipment included in price of 9-inch "Workshop" Lathes with raising blocks is the same as the equipment supplied for corresponding model and drive without raising blocks.

### 9-inch "Workshop" Lathes with Raising Blocks—Motor and Bench are not included

Swing Over Bed Inches (with Raising Blocks)	Length of Bed Feet	Swing Over Carriage Inches	Size of Motor Required	Approximate Ship. Weight for Crated Adjustable Hor. Drive Lathe Pounds	Model A 9-inch "Workshop" Horizontal Motor Driven Raising Block Bench Lathe		Model B 9-inch "Workshop" Horizontal Motor Driven Raising Block Bench Lathe		Model C 9-inch "Workshop" Horizontal Motor Driven Raising Block Bench Lathe	
					Cat. No.	Code	Cat. No.	Code	Cat. No.	Code
					11¼	3	7¼	¼ h.p.	360	6444-Y
11¼	3½*	7¼	¼ h.p.	385	6444-Z	Jasew	6477-Z	Jemep	6415-ZC	Keyew
11¼	4*	7¼	¼ h.p.	410	6444-A	Jasog	6477-A	Jemit	6415-AC	Keyog
11¼	4½	7¼	¼ h.p.	435	6444-R	Jasum	6477-R	Jemoz	6415-RC	Keyum

\*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



# 16-24" South Bend Precision Lathes—Series "S"

*Specifications Apply to all 16-24-inch Lathes Shown in this Catalog*

All types of 16-24" swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage, and bed. The only difference between the various models of lathes is in the type of drive, and the equipment supplied.

## Capacity of Lathe

Swing over bed and saddle wings.....	24 $\frac{1}{4}$ "
Swing over saddle with chip guard removed.....	19 $\frac{3}{4}$ "
Swing over saddle with chip guard.....	19"

## Spindle Speeds

Standard spindle speeds (subject to 5% variation)	
R.P.M. of spindle, direct belt driven.....	480, 289, 183, 113
R.P.M. of spindle, back gears engaged.....	60, 36, 23, 14

Higher spindle speeds can be supplied to order. Price on request.

## Threads and Feeds

Thread cutting range	
Quick Change gear lathe—48 threads R.H. or L.H.....	4 to 224 per inch
Standard Change gear lathe—45 threads R.H. or L.H.....	4 to 160 per inch
Longitudinal feeds through friction clutch	
Quick Change gear lathe—48 feeds R.H. or L.H.....	.0015" to .0841"
Standard change gear lathe—26 feeds R.H. or L.H.....	.0021" to .0153"
Cross feeds through friction clutch	
Quick change gear lathe—48 feeds.....	.0006" to .0312"
Standard change gear lathe—26 feeds.....	.0008" to .0057"
Lead screw, 29° Acme thread.....	1 $\frac{1}{8}$ " Diam.—6 Thrds.

## Headstock

Hole through spindle.....	1 $\frac{3}{8}$ "
Maximum collet capacity*.....	1"
Spindle nose diameter and threads per inch.....	2 $\frac{3}{8}$ "-6
Size of Center, Morse taper.....	No. 3
Width of cone pulley step for belt.....	2 $\frac{1}{4}$ "
Large face plate diameter.....	13 $\frac{1}{4}$ "
Small face plate diameter.....	8 $\frac{1}{16}$ "
Spindle bearings are cast integral with headstock.	
Front spindle bearing, diameter.....	2 $\frac{7}{8}$ "

## Compound Rest

Cross slide will travel.....	10 $\frac{1}{2}$ "
Angular hand feed of compound rest top slide.....	3 $\frac{3}{4}$ "

## Tool Post

Size of tool holder shank.....	5/8" x 1 $\frac{3}{8}$ "
Size of cutter bits tool holder takes.....	3/8" sq.

## Tailstock

Size of Morse taper centers.....	No. 3
Spindle travel.....	5 $\frac{3}{4}$ "
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	1"

## Motor

Standard size of motor supplied with each 16-24-inch motor driven lathe.....	1 $\frac{1}{2}$ H.P.
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Standard motors as listed with lathes shown in this catalog: 1-phase, 50 or 60 cycle, 115 or 230 volt; 3-phase, 50/60 cycle, 220, 440, or 550 volt; D.C., 115 or 230 volt. Special motors supplied to order. Prices of lathes with special motors will be quoted on request.

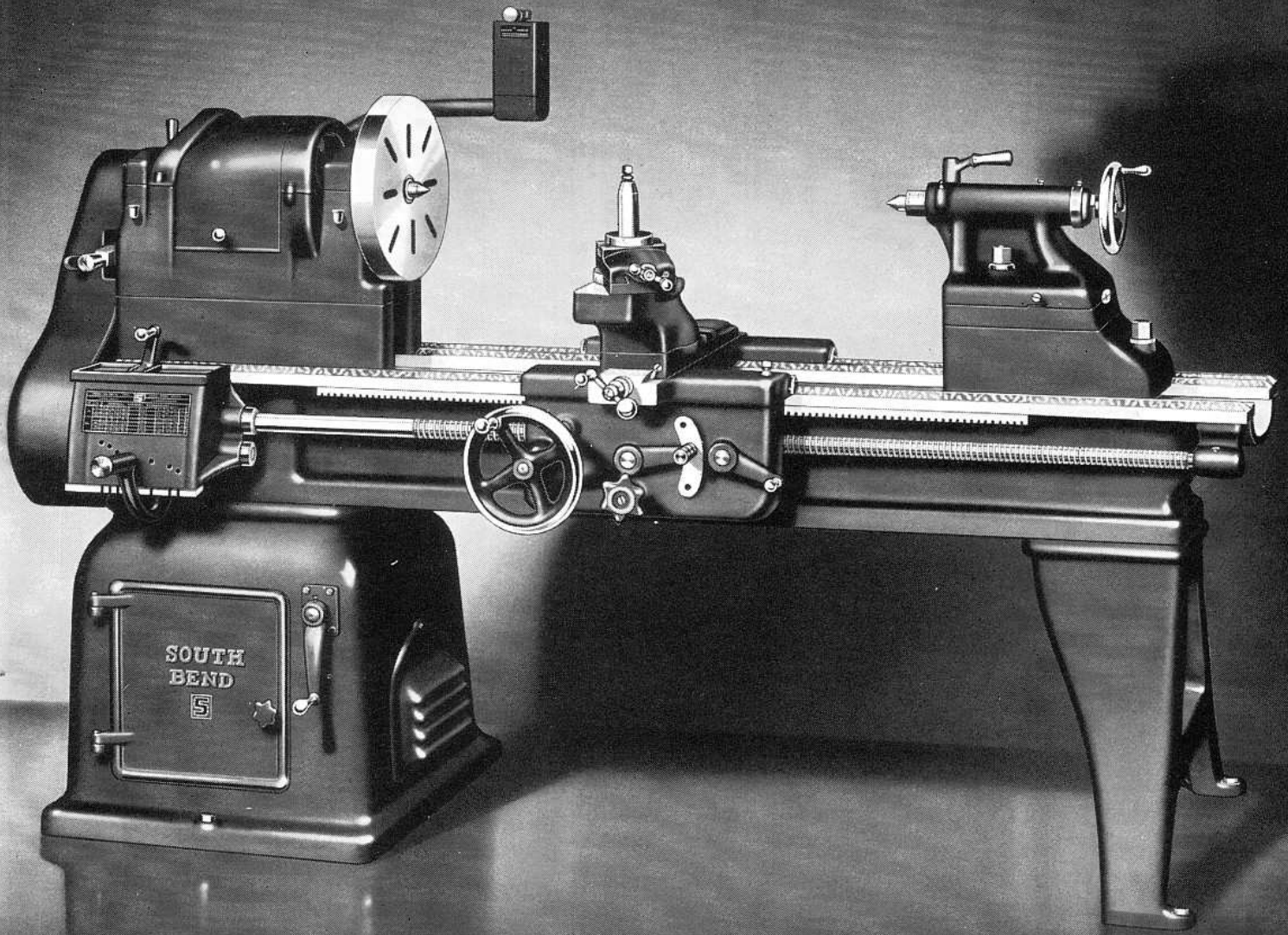
## Specifications of Lathes with Metric Lead Screws

Applying only to lathes ordered with metric lead screw and metric graduations.

Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	4.0 mm
Cross feed screw pitch.....	3.0 mm

\*Collets for 16-24" and 16" Lathes are interchangeable with collets for 10"—1" Collet Capacity Lathes. Draw-in Collet Chuck Attachment is not interchangeable.

For description of lathe features see pages 6 to 11



## 16-24-inch Underneath Belt Motor Driven Lathe—Series "S"

### A Large Swing General Purpose Lathe

The 16-24-inch General Purpose Lathe is a practical tool for machining large diameter work that is not excessively heavy. This lathe is the same as the 16-inch shown on page 14, except that the height of the centers is increased by the use of raising blocks, making the swing of the lathe 24 $\frac{1}{4}$ " in diameter over the bed and 19" in diameter over the saddle bridge. See specifications of lathe on page 72.

The Large Capacity of this lathe makes it a valuable tool for the shop requiring a general purpose precision lathe for large diameter jobs, such as boring jig plates, turning and boring wheels, machining pulleys and similar work. Although this lathe has ample capacity for large, awkward jobs, it is not too heavy and cumbersome for efficient operation on small parts.

Regular Equipment included in price consists of: 1 $\frac{1}{2}$  H.P. instant reversing motor; re-

versing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box or set of independent change gears; installation plan, and book "How to Run a Lathe."

#### Quick Change Gear

##### 16-24-inch Underneath Motor Driven Lathes—with Floor Legs

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	29 $\frac{1}{4}$ -in. 198-C	41 $\frac{1}{2}$ -in. 198-D	53 $\frac{1}{2}$ -in. 198-E	77 $\frac{1}{2}$ -in. 198-G	101 $\frac{1}{2}$ -in. 198-H
Catalog Number.....	198-C	198-D	198-E	198-G	198-H
Shipping Weight, Crated.....	2480 lbs.	2560 lbs.	2640 lbs.	2800 lbs.	3030 lbs.
Code Word.....	Beluj	Bemux	Benaq	Beniy	Benuk

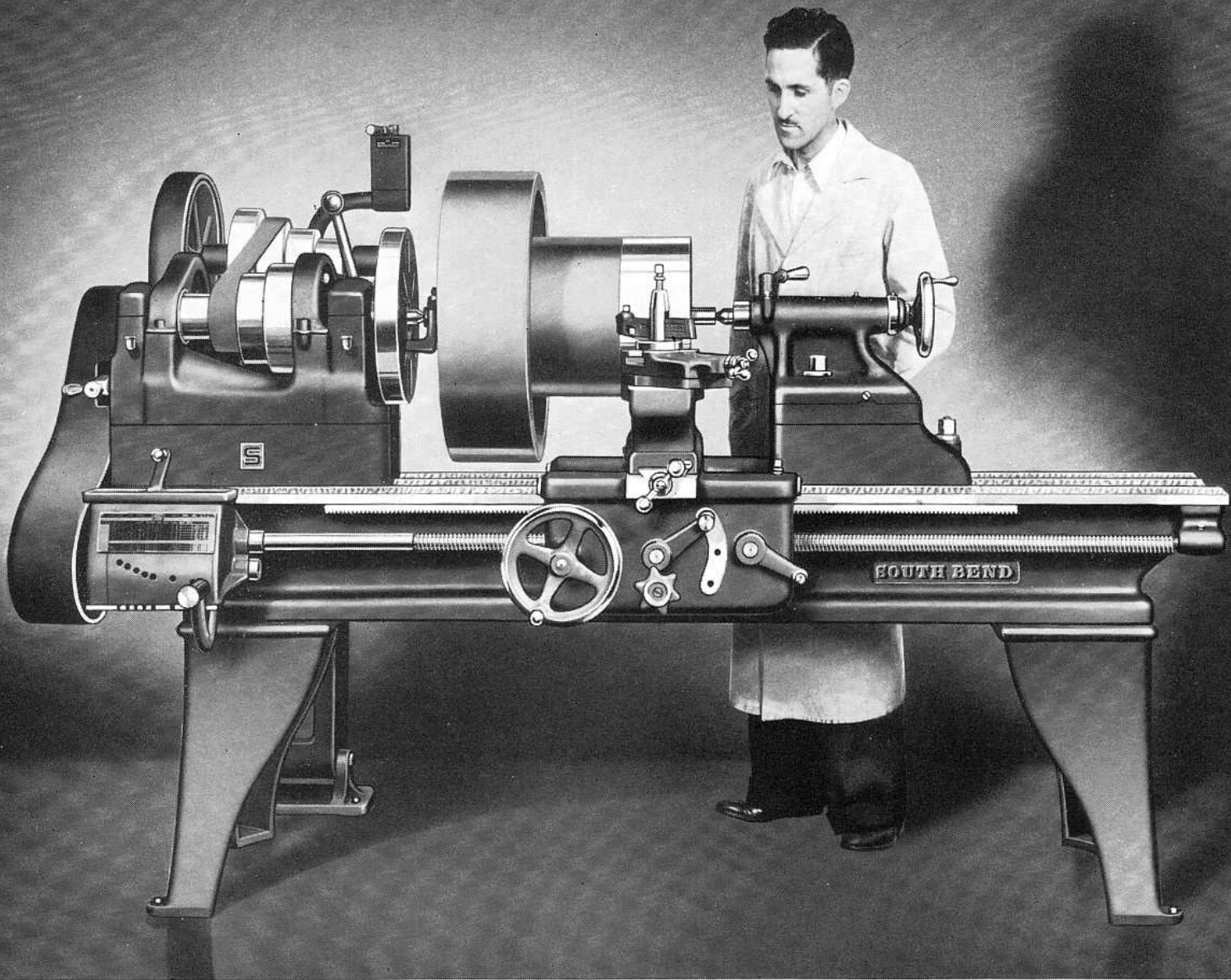
#### Standard Change Gear

##### 16-24-inch Underneath Motor Driven Lathes—with Floor Legs

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	29 $\frac{1}{4}$ -in.	41 $\frac{1}{2}$ -in.	53 $\frac{1}{2}$ -in.	77 $\frac{1}{2}$ -in.	101 $\frac{1}{2}$ -in.
Catalog Number.....	157-C	157-D	157-E	157-G	157-H
Shipping Weight, Crated.....	2445 lbs.	2525 lbs.	2605 lbs.	2765 lbs.	2995 lbs.
Code Word.....	Bipan	Biper	Bisac	Biseg	Bisoq

SOUTH BEND, INDIANA, U.S.A.





## 16-24-inch Pedestal Motor Driven Lathe—Series "S"

### A Large Swing General Purpose Lathe

The 16-24-inch General Purpose Lathe is a practical tool for machining large diameter work that is not excessively heavy, and is popular for use in tool and die shops, manufacturing plants, machine shops and general repair shops. This lathe is the same as the 16-inch lathe shown on page 16, except that the height of centers is increased by the use of raising blocks. See specifications on page 72.

This Lathe is popular for use in tool and die shops, manufacturing plants, machine shops and general repair shops. It is especially practical for the small general shop that has only one or two lathes, yet must be equipped to take care of a wide variety of work. The unusual capacity permits machining large diameters, yet the lathe is not too heavy and cumbersome for accurate work on small parts.

Regular Equipment included in price of this lathe consists of: 1½ H.P. instant reversing

motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box or set of independent change gears; installation plan and book, "How to Run a Lathe."

#### Quick Change Gear

##### 16-24-inch Pedestal Motor Driven Lathes—with Floor Legs

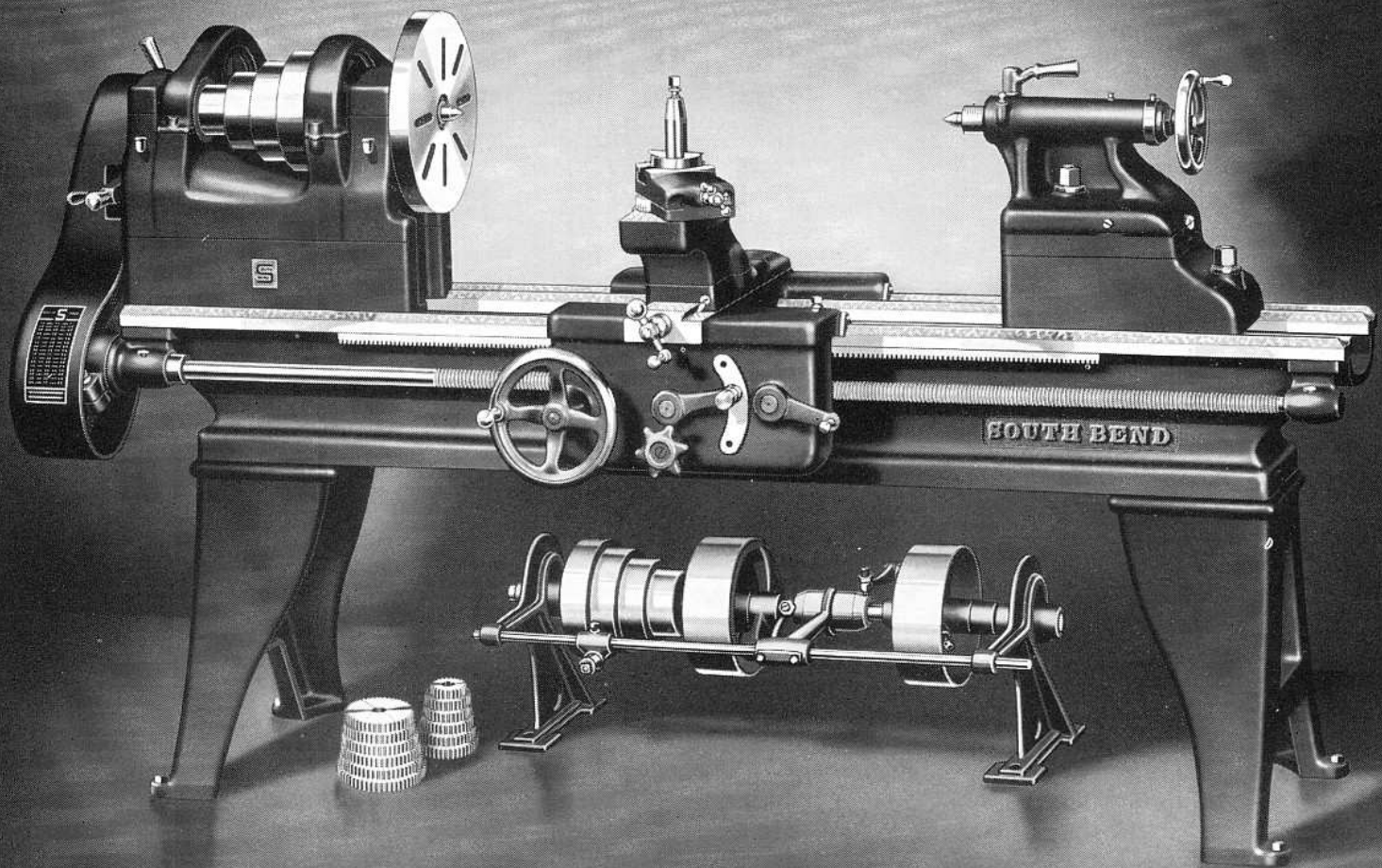
Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers....	29½-in.	41½-in.	53½-in.	77½-in.	101½-in.
Catalog Number.....	998-C	998-D	998-E	998-G	998-H
Shipping Weight, Crated....	2325 lbs.	2405 lbs.	2485 lbs.	2645 lbs.	2875 lbs.
Code Word.....	Likuc	Lilez	Lilid	Lilolj	Lilup

#### Standard Change Gear

##### 16-24-inch Pedestal Motor Driven Lathes—with Floor Legs

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers....	29½-in.	41½-in.	53½-in.	77½-in.	101½-in.
Catalog Number.....	957-C	957-D	957-E	957-G	957-H
Shipping Weight, Crated....	2290 lbs.	2370 lbs.	2450 lbs.	2610 lbs.	2840 lbs.
Code Word.....	Padad	Padah	Padil	Pador	Padux

**16-24"**  
LATHES



## 16-24-inch Countershaft Driven Lathe—Series "S"

### A Large Swing General Purpose Lathe

The 16-24-inch General Purpose Lathe is a practical tool for machining large diameter work that is not excessively heavy, and is popular for use in tool and die shops, manufacturing plants, machine shops and general repair shops. This lathe is the same as the 16-inch lathe shown on page 19, except that the height of centers is increased by the use of raising blocks. See specifications on page 72.

This Lathe is popular for the small general shop that must be equipped to take care of a wide variety of work. The increased swing over the lathe bed and carriage permits machining work that would otherwise require a much larger and heavier lathe. The raising blocks are substantially constructed and permit taking cuts as heavy as could be taken on the same lathe without raising blocks.

Regular Equipment included in price of this lathe consists of: reversing countershaft

with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box or set of independent change gears; installation plan and instruction book, "How to Run a Lathe."

#### Quick Change Gear

##### 16-24-inch Countershaft Driven Lathes—with Floor Legs

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers....	29 $\frac{1}{2}$ -in.	41 $\frac{1}{2}$ -in.	53 $\frac{1}{2}$ -in.	77 $\frac{1}{2}$ -in.	101 $\frac{1}{2}$ -in.
Catalog Number.....	98-C	98-D	98-E	98-G	98-H
Shipping Weight, Crated....	2035 lbs.	2115 lbs.	2195 lbs.	2355 lbs.	2505 lbs.
Code Word.....	Totab	Totef	Toton	Totop	Totuv

#### Standard Change Gear

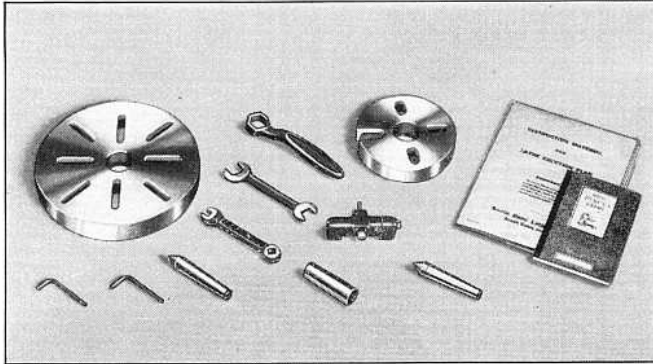
##### 16-24-inch Countershaft Driven Lathes—with Floor Legs

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers....	29 $\frac{1}{2}$ -in.	41 $\frac{1}{2}$ -in.	53 $\frac{1}{2}$ -in.	77 $\frac{1}{2}$ -in.	101 $\frac{1}{2}$ -in.
Catalog Number.....	57-C	57-D	57-E	57-G	57-H
Shipping Weight, Crated....	2000 lbs.	2080 lbs.	2160 lbs.	2320 lbs.	2470 lbs.
Code Word.....	Tonay	Tonec	Tonig	Tonom	Tonus



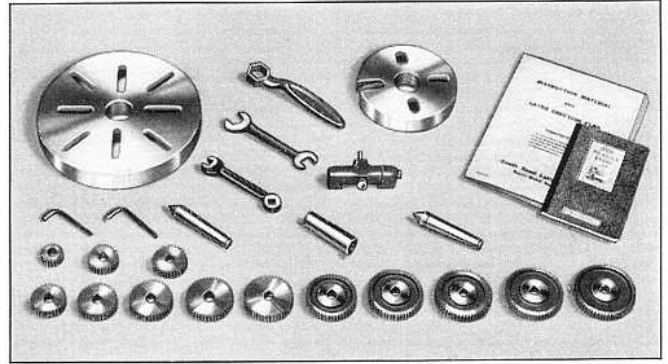
# Regular Equipment of Each South Bend Lathe

The regular equipment which is supplied with and included in the price of each Series "S" South Bend Lathe, 10" to 16-24" inclusive, varies with the type of lathe, as illustrated and described below. Chucks, tools, and attachments for various classes of work are supplied at extra cost and are listed in this catalog on pages 77 to 99.



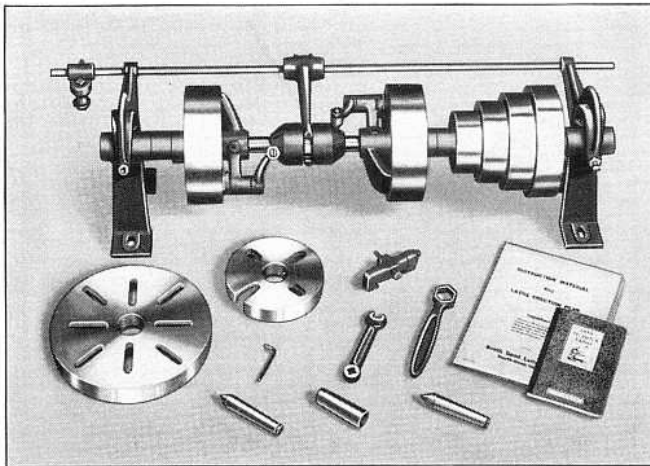
## Equipment for Motor Driven Lathes Quick Change Gear Type

The regular equipment included in the price of each motor driven quick change gear Series "S" South Bend Lathe, 10" to 16-24" swing inclusive, consists of: instant reversing motor; reversing switch; wiring for the switch and motor; necessary V-belts; flat leather belt, large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and a copy of the book "How to Run a Lathe."



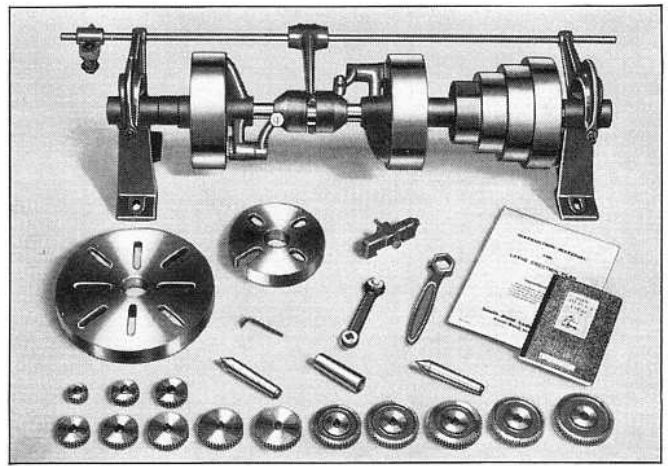
## Equipment for Motor Driven Lathes Standard Change Gear Type

The regular equipment included in the price of each motor driven standard change gear Series "S" South Bend Lathe, 10" to 16-24" swing inclusive, consists of: instant reversing motor; reversing switch; wiring for the switch and motor; necessary V-belts; flat leather belt, large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and a copy of the book "How to Run a Lathe."



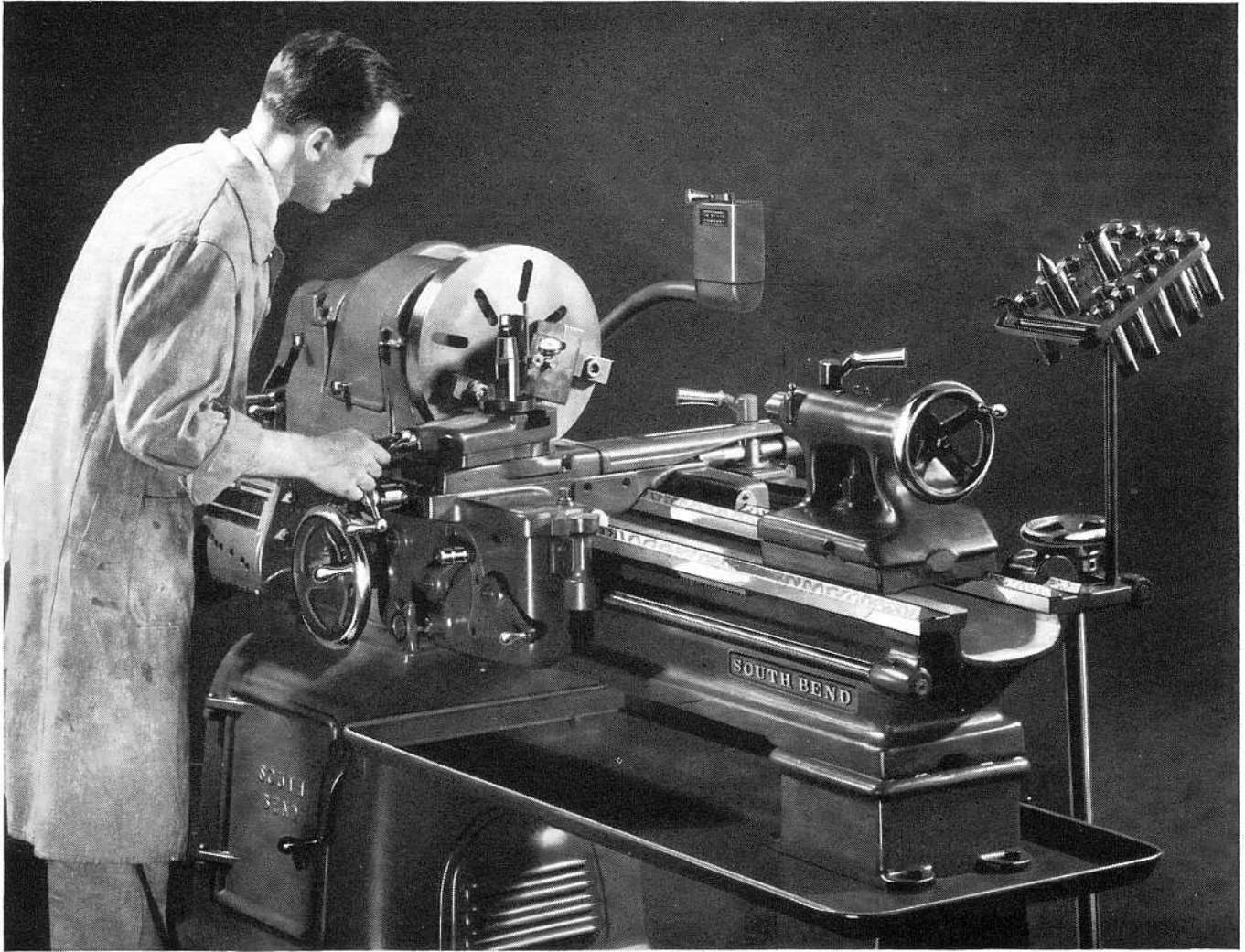
## Equipment for Countershaft Driven Lathes Quick Change Gear Type

The regular equipment included in the price of each countershaft driven quick change gear Series "S" South Bend Lathe, 10" to 16-24" swing inclusive, consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box; installation plan; and a copy of the book "How to Run a Lathe."



## Equipment for Countershaft Driven Lathes Standard Change Gear Type

The regular equipment included in the price of each countershaft driven standard change gear Series "S" South Bend Lathe, 10" to 16-24" swing inclusive, consists of: reversing countershaft with two friction clutch pulleys; large and small face plates; forged steel heat-treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; set of independent change gears; installation plan; and a copy of the book "How to Run a Lathe."



## Attachments, Chucks and Tools for All Sizes and Types of South Bend Lathes

**Attachments, Chucks and Tools** for all sizes and types of South Bend Lathes are illustrated and described on the following pages. All attachments are in proportion to the size of the lathe for which they are intended. The attachments greatly increase the usefulness of the lathe, and most of them may be purchased either with the lathe or separately.

**Attachments for Manufacturing** include hand lever type draw-in collet chuck attachment, hand lever tailstock, hand lever double tool slide, oil pan, pump and piping, bed turret attachment and four-way tool post. Many South Bend Lathes fitted with these attachments are in operation in industrial shops throughout the United States and are produc-

ing interchangeable parts in large quantities to unusually close tolerances.

**Tool Room Attachments** include hand wheel type draw-in collet chuck attachment, telescopic taper attachment, micrometer carriage stop, thread dial indicator and chip pan. All of these attachments are convenient for precision tool and die work and are included as regular equipment on South Bend Tool Room Lathes, although they may be purchased separately if desired.

**When ordering** attachments for lathes now in service, be sure to specify the serial number which is stamped on top of the lathe bed at the right end between the front V-way and the flat way.



# Hand Wheel Type Draw-in Collet Chuck Attachment

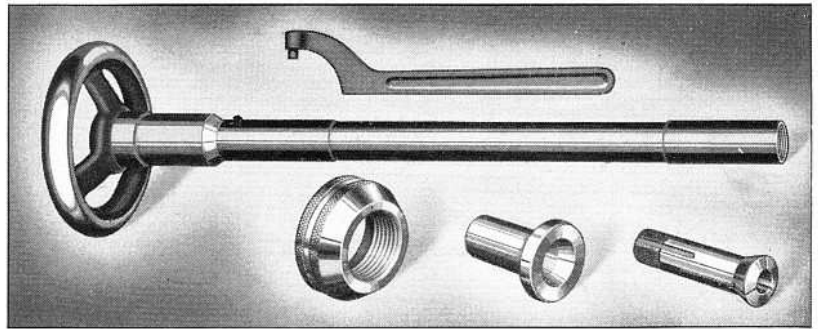
## For Accurately Chucking Small Diameter Work

The draw-in collet chuck is the most accurate of all types of chucks and is used for precision work, such as making small tools and manufacturing small parts for watches, typewriters, radios, etc. The collets are made for round, square and other shapes, as shown on page 79.

The hollow draw bar extending through the lathe spindle is threaded on the right end to fit the collet. When the hand wheel on the left end of the draw bar is turned, the spring collet is drawn into the taper closing sleeve, causing it to tighten on the work.

### Equipment Included in Price

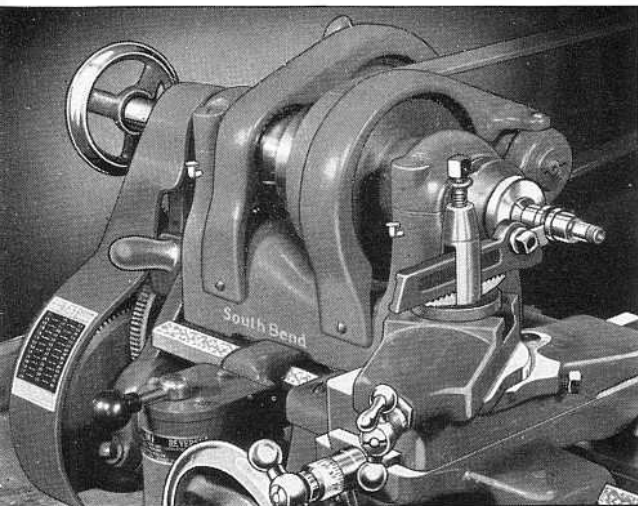
The price of the Hand Wheel Draw-in Collet Chuck Attachment includes hand wheel and hollow draw bar, spindle nose cap, spanner wrench for nose cap, tapered steel closing sleeve, and one round, split collet of any standard diameter. The tapered closing sleeve is made of tool steel, hardened and ground, to minimize wear and to insure accuracy.



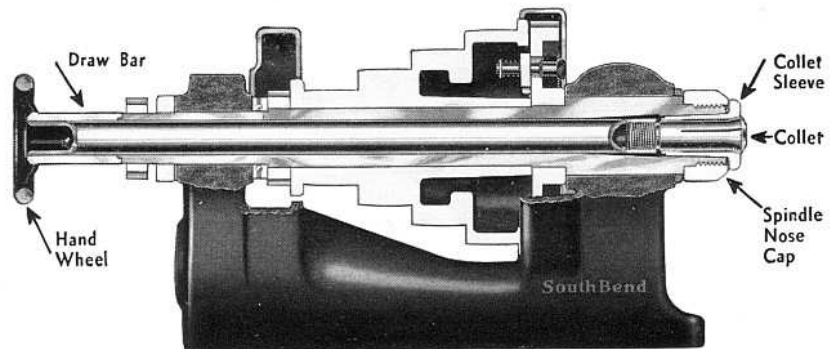
Hand Wheel Type Draw-in Collet Chuck Attachment and Equipment

Hand Wheel Draw-in Collet Chuck with One Round Split Collet

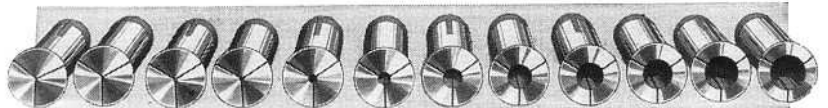
Size of Lathe	Catalog Number	Hole in Lathe Spindle	Collet Capacity in Sixty-fourths (for Round Work)	Code Word
9 in. "Workshop"	4306-W	$\frac{3}{4}$ in.	$\frac{1}{16}$ in. up to $\frac{1}{2}$ in.	Aerut
10 in. $\frac{11}{16}$ " Collet	4310	1 in.	$\frac{1}{16}$ in. up to $\frac{11}{16}$ in.	Cibah
10 in. 1" Collet	4312	$1\frac{3}{8}$ in.	$\frac{1}{16}$ in. up to 1 in.	Cihak
13 in.	4313	$1\frac{1}{2}$ in.	$\frac{1}{16}$ in. up to $\frac{11}{16}$ in.	About
14 $\frac{1}{2}$ in.	4314	$1\frac{1}{2}$ in.	$\frac{1}{16}$ in. up to $\frac{3}{4}$ in.	Cilam
16 in.	4316	$1\frac{3}{8}$ in.	$\frac{1}{16}$ in. up to 1 in.	Adore
16-24 in.	4317	$1\frac{3}{8}$ in.	$\frac{1}{16}$ in. up to 1 in.	Cileq



Lathe Equipped with Hand Wheel Type Draw-in Collet Chuck Attachment



Cross Section of Headstock Showing Construction of Hand Wheel Type Draw-in Collet Chuck Attachment



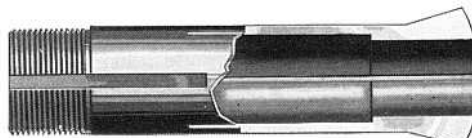
Set of Round Split Collets for Draw-in Collet Chuck Attachment

## Collets for Round Work

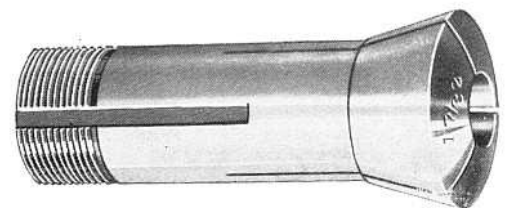
### Used with Draw-in Collet Chuck Attachment

Collets for round work, illustrated at right, are for use with either the hand wheel type draw-in collet chuck attachment described above, or the hand lever type draw-in collet chuck attachment shown on page 79. Collets are made of tool steel, hardened and tempered. They are ground both outside and inside to insure accuracy.

The work held in the collet should not be more than .001 in. smaller or .001 in. larger than the collet size. If the diameter of the work varies more than this, it will impair the accuracy and efficiency of the collet. A separate collet should be used for each diameter of the work.



Cross Section View of Split Collet Showing Its Construction



Collets with Standard Hole Sizes for Round Work

Size of Lathe	Catalog Number	Hole in Spindle	Collet Capacity in Sixty-fourths	Code Word
9 in. "Workshop"	609-W	$\frac{3}{4}$ in.	$\frac{1}{16}$ in. up to $\frac{1}{2}$ in.	Catra
10 in. $\frac{11}{16}$ " Collet	1721	1 in.	$\frac{1}{16}$ in. up to $\frac{11}{16}$ in.	Cagin
10 in. 1" Collet	1722	$1\frac{3}{8}$ in.	$\frac{1}{16}$ in. up to 1 in.	Cagot
13 in.	613	1 in.	$\frac{1}{16}$ in. up to $\frac{11}{16}$ in.	Chose
14 $\frac{1}{2}$ in.	1713	$1\frac{1}{2}$ in.	$\frac{1}{16}$ in. up to $\frac{3}{4}$ in.	Cepas
16 in.	616	$1\frac{3}{8}$ in.	$\frac{1}{16}$ in. up to 1 in.	Clear
16-24 in.	1724	$1\frac{3}{8}$ in.	$\frac{1}{16}$ in. up to 1 in.	Cepew

### Special Collets with Metric and Decimal Hole Sizes

Collets for odd diameter round work measured in thousandths of an inch or in millimeters, also collets for diameters less than  $\frac{1}{16}$ -inch and for odd diameter drills and wire gauges, can be supplied to order. See price list.

ATTACH-  
MENTS

# Hand Lever Type Draw-in Collet Chuck Attachment

## For Rapid Production Work

The Hand Lever Type Draw-in Collet Chuck permits releasing and feeding bar stock through the collet, without stopping the lathe. The gripping action of the collet can be set to any desired tension by adjusting the cylinder of the adjustable chuck closer.

The rapid production and accuracy of the Hand Lever Draw-in Collet Chuck Attachment makes it a very economical tool for use in manufacturing small interchangeable parts requiring accuracy and precision.

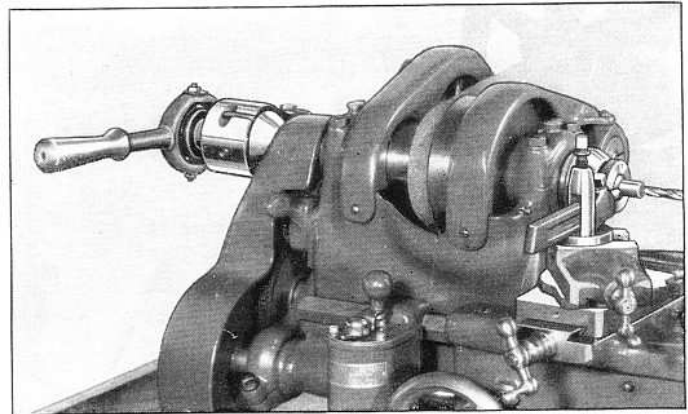
## Equipment Included in Price

The price of the Hand Lever Draw-in Collet Chuck Attachment includes adjustable chuck closing mechanism and hollow draw bar, spindle nose cap, spanner wrench for nose cap, tapered steel closing sleeve, and one round split collet of any standard size. The tapered closing sleeve is made of tool steel, hardened and ground to minimize wear and to insure accuracy.

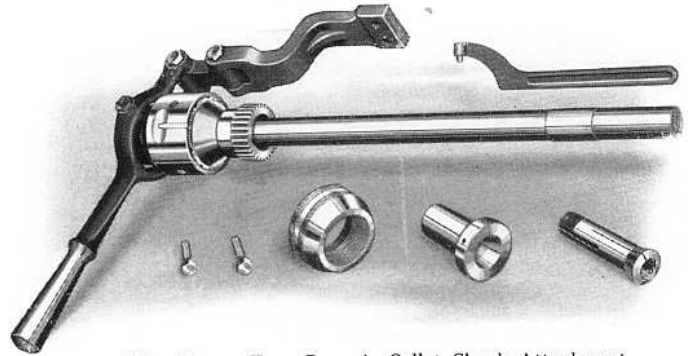
### Hand Lever Draw-in Collet Chuck Attachment with One Round Split Collet\*

Size of Lathe	Catalog Number	Hole in Lathe Spindle	Collet Capacity in 64ths (for Round Work)	Code Word
9 in. "Workshop"	5206-W	3/4 in.	1/16 in. up to 1 1/2 in.	Abpat
10 in. 11/16" Collet	5210	1 in.	1/16 in. up to 1 7/16 in.	Cahew
10 in. 1" Collet	5219	1 3/8 in.	1/16 in. up to 1 11/16 in.	Cahum
13 in.	5213	1 in.	1/16 in. up to 1 1/2 in.	Andes
14 1/2 in.	5214	1 1/8 in.	1/16 in. up to 1 3/4 in.	Ciked
16 in.	5216	1 3/8 in.	1/16 in. up to 1 in.	Aster
16-24 in.	5217	1 3/8 in.	1/16 in. up to 1 in.	Cikon

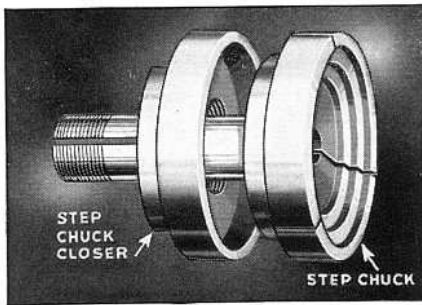
\*Should be fitted at factory. For prices of extra collets see price list.



Lathe Equipped with Hand Lever Type Draw-in Collet Chuck Attachment



Hand Lever Type Draw-in Collet Chuck Attachment



Step Chuck and Closer for Lathe

## Step Chucks and Closers For Holding Discs and Gear Blanks

The Step Chuck and Closer are used with either the hand wheel type or the hand lever type draw-in chuck attachment for holding discs and similar round, flat work. The closer screws onto the threaded end of the lathe spindle nose and the step chuck screws into the threaded hole in the draw bar of the draw-in collet chuck attachment.

Step chucks are made to order in various sizes, having a maximum capacity of 2", 3", 4", 5" and 6" respectively. The 2" size does not require a special closer, but all other sizes must be used with a closer of corresponding diameter.

Step chucks can be supplied with steps machined to standard diameters, or with the head blank so that it can be machined by the customer. Prices on request.



Square



Hexagon



Step Collet

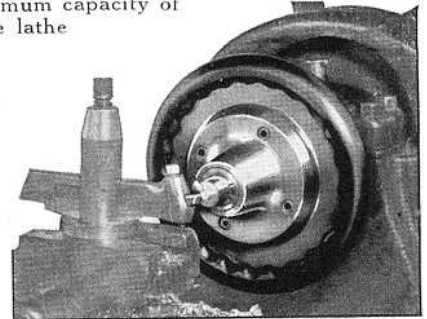
## Special Collets

Special collets for holding square, round or hexagonal stock can be supplied to order.

SOUTH BEND, INDIANA, U.S.A.

## Spindle Nose Collet Chuck

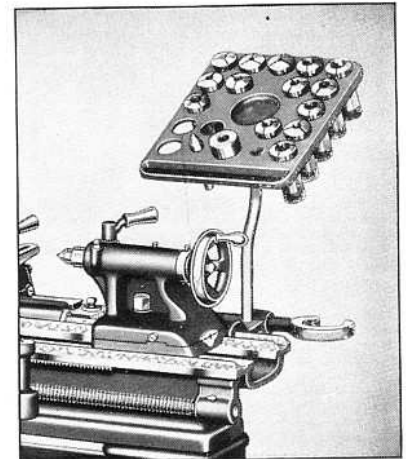
With this collet chuck, bar or rod work up to the maximum capacity of the hole through the lathe spindle can be machined. The chuck screws onto the spindle nose of the lathe, and collets are opened and closed by turning the hand wheel. No draw bar is required. Information and prices on request.



## Collet Rack

Made entirely of metal, this collet rack provides a suitable place for keeping collets, centers, spindle sleeve and draw bar. Clamp for attaching to back V-way of lathe bed is supplied. Price does not include collets.

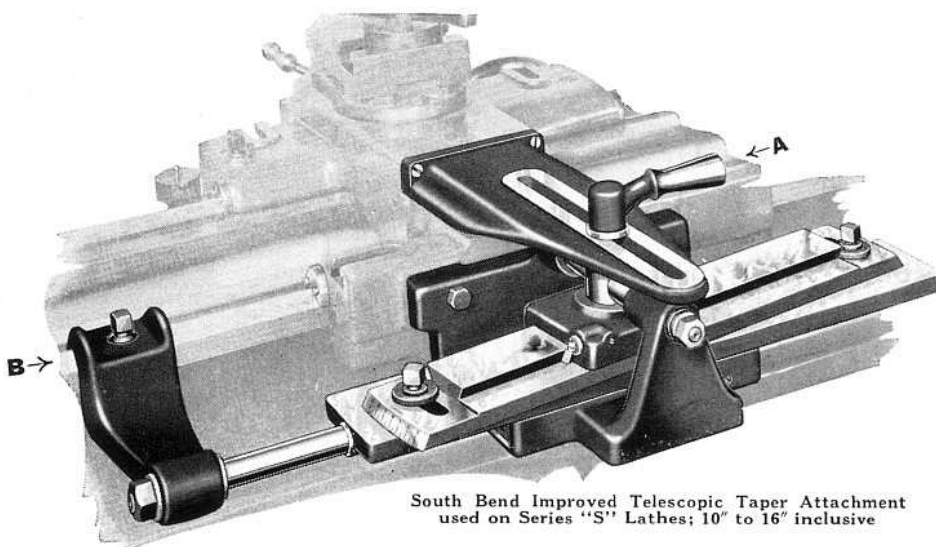
Size of Lathe	Catalog No.	Code Word
9 in. W.S.	1770-W	Rabah
10" 11/16" Coll.	1752	Rawik
10"-1" Collet	1753	Razuk
13 in.	1772	Rajaw
14 1/2 in.	1791	Rakaw
16 in.	1774	Rajuc
16-24 in.	1792	Rakok



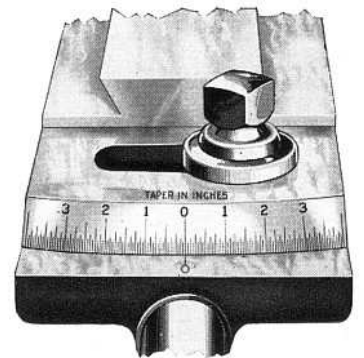
Collet Rack for Lathe

ATTACH-  
MENTS





South Bend Improved Telescopic Taper Attachment used on Series "S" Lathes; 10" to 16" inclusive



Close-up of Taper Attachment Swivel Bar Showing Graduations in Inches per Foot of Taper

## Taper Turning Attachment for South Bend Lathes

With Telescopic Cross Feed Screw and Tapered Gibs

Taper turning and boring is as easily accomplished as straight turning on lathes equipped with the South Bend Improved Taper Turning Attachment. Accuracy and smooth operation are assured by the practical design and rugged construction of this attachment. A telescopic cross feed screw eliminates the necessity of disconnecting the cross feed nut when the taper attachment is to be used.

The ease with which tapers may be produced on lathes equipped with this taper attachment makes it especially popular for tool room work and for production operations involving taper turning and boring. All tapers up to  $3\frac{1}{2}$  inches per foot may be turned and bored.

The attachment is permanently mounted on the lathe carriage and is always ready for use in any position along the entire length of the lathe bed. It does not in any way interfere with straight turning and boring, and only a few seconds are required to change over from straight to taper work.

To set up the lathe for taper turning, the swivel bar, which is graduated in both degrees and taper per foot, is first set to the required angle. The cross feed screw is then used to adjust the lathe tool for the required diameter, and binding screws "A" and

"B" are locked. The lathe is now set for taper turning and either hand or power longitudinal feed may be used. To change back to straight turning it is necessary to release binding screws "A" and "B".

When binding lever "A" is tightened the cross slide of the lathe carriage is rigidly locked to the taper attachment swivel slide, and the thrust is removed from the cross feed screw.

Taper attachment must be fitted to lathe at factory.

### Adjustable Tapered Gibs

Both the top and bottom slides of the taper attachment are dovetailed and have adjustable tapered gibs. The dovetails are accurately hand-scraped and fitted. The entire attachment is excellently designed and substantially constructed.

Telescopic Graduated Taper Attachment Must Be Ordered with Lathe

Catalog Number	Size of Lathe	Maximum Taper			Approx. Shipping Weight	Code Word
		At One Setting	Per Foot	In Degrees		
1545	10 in.	$8\frac{1}{2}$ in.	$3\frac{1}{2}$ in.	$16\frac{1}{2}$	40 lbs.	Mekoe
379	13 in.	$9\frac{1}{4}$ in.	$3\frac{1}{2}$ in.	$16\frac{1}{2}$	65 lbs.	Mokil
399	$14\frac{1}{2}$ in.	$9\frac{1}{4}$ in.	$3\frac{1}{2}$ in.	$16\frac{1}{2}$	80 lbs.	Mokux
381	16 in.	$11\frac{1}{2}$ in.	$3\frac{1}{2}$ in.	$16\frac{1}{2}$	100 lbs.	Munar
383	16-24 in.	$11\frac{1}{2}$ in.	$3\frac{1}{2}$ in.	$16\frac{1}{2}$	100 lbs.	Moyix

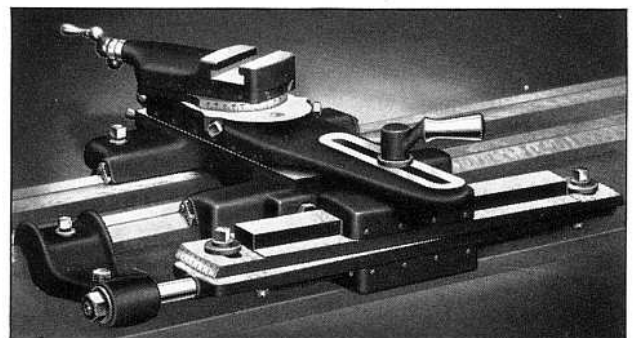
## Taper Attachment for 9-inch "Workshop" Lathes

The plain taper attachment shown at right is supplied for turning and boring all classes of taper work on the 9-inch "Workshop" Lathes. The attachment is bolted to the lathe carriage and can be used in any position along lathe bed. Does not interfere with straight turning.

This taper attachment has plain cross feed screw and straight gibs. The cross feed screw and nut must be disconnected before the taper attachment can be engaged for taper turning and boring. Telescopic cross feed screw cannot be supplied.

The swivel bar which controls the taper is graduated and can be set for cutting any taper up to  $3\frac{1}{2}$ " per foot and up to 7" in length at one setting; maximum taper  $16\frac{1}{2}$  degrees, in either direction. Attachment must be fitted to lathe at factory.

Cat. No. 428-W. Plain Taper Attachment for 9-in. "Workshop" Lathes. W't 35 lbs. Code, "Hapwo."



Taper Attachment for 9" "Workshop" Lathe

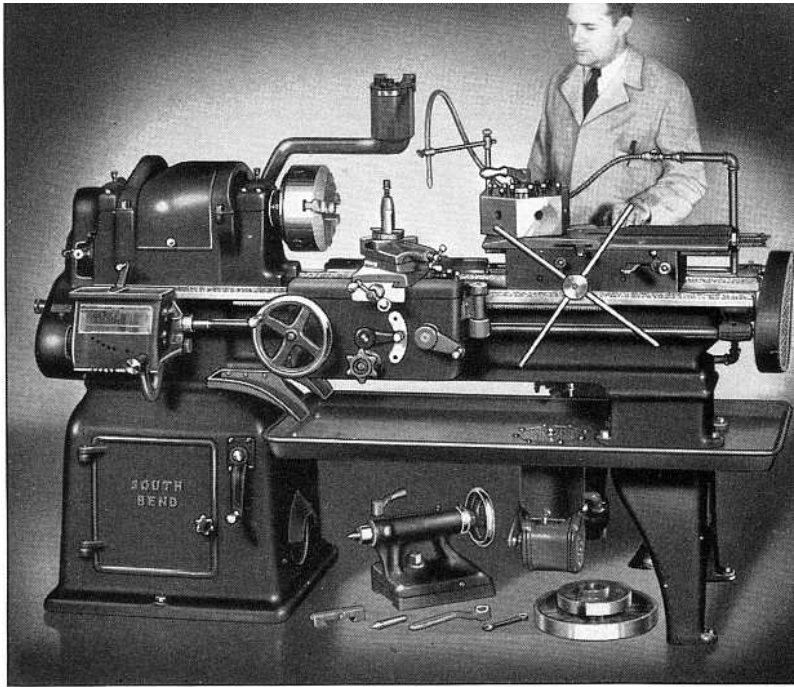
ATTACHMENTS

## Chip Pans, and Oil Pans

Chip pans, and oil pans for South Bend Lathes are made of heavy gauge sheet steel with welded corners and roll rim. Pans should be specified at the time the lathe is ordered and fitted at the factory.

Chip Pans are intended for collecting chips only and are not necessarily oil tight. Chip Pans extend the full length of the lathe bed, except on Underneath Motor Driven Lathes on which they extend from headstock leg to tailstock end of bed as shown.

Oil Pans are intended for collecting both oil and chips and are oil tight. Oil Pans extend full length of the lathe bed, except on Underneath Motor Driven Floor Leg Lathes on which they extend from headstock leg to tailstock end of bed as shown. Prices of oil pans do not include oil reservoir, oil pump or piping, which are listed at bottom of page.



### Chip Pans for Floor Leg Lathes

Size Lathe	Cat. No.	LENGTH OF BED										
		3'	3½'	4'	4½'	5'	6'	7'	8'	10'	12'	
<b>Countershaft Driven and Pedestal Motor Driven Lathes</b>												
9" W.S.	1180-W	Boten	Curad	Delar	Fikae							
10 in.	1180-N	Zaroh	Conah	Deluk	Fowae							
13 in.	1182			Delum		Heyod	Kejax	Losag				
14½ in.	1183					Heyur	Kejuf	Losok	Memas	Nemap		
16 in.	1184						Kejob	Lotex	Memiw	Nemet	Paxer	
16-24 in.	1185						Kejar	Lotib	Memuh	Nemod	Paxoe	
<b>Underneath Belt Motor Driven Lathes</b>												
10 in.	1987-N	Zemoh	Casoz	Dihon	Fehar							
13 in.	1989			Dadiz		Hewob	Kecah	Lepab				
14½ in.	1990					Hewuh	Kecip	Lepif	Menab	Nenac		
16 in.	1991						Kecov	Lepop	Menop	Nenog	Pakey	
16-24 in.	1992						Keclub	Leput	Menux	Nenik	Pakie	

### Oil Pans for Floor Leg Lathes

Size Lathe	Cat. No.	LENGTH OF BED										
		3'	3½'	4'	4½'	5'	6'	7'	8'	10'	12'	
<b>Countershaft Driven and Pedestal Motor Driven Lathes</b>												
9" W.S.	1994-W	Bifue	Cudaw	Darec	Fimor							
10 in.	1994-N	Zinak	Cuker	Dimos	Fiboc							
13 in.	1996			Darus		Hinew	Kowah	Lerac				
14½ in.	1997					Hinog	Kowel	Lerik	Mepac	Neyaz		
16 in.	1998						Kowip	Lerot	Mepik	Neyid	Pazes	
16-24 in.	1999						Kowub	Leruw	Mepur	Nezem	Paziw	
<b>Underneath Belt Motor Driven Lathes</b>												
10 in.	2020-N	Zokem	Cokun	Disoz	Fucam							
13 in.	2022			Dafik		Hineg	Kucar	Litaz				
14½ in.	2023					Himuz	Kuenc	Lited	Mesar	Nekuh		
16 in.	2024						Kueiz	Liton	Mesiz	Nemix	Penim	
16-24 in.	2025						Kueof	Lituk	Mesok	Nerim	Penuk	

### Production Equipment

The illustration above shows a 16-inch South Bend Underneath Belt Motor Driven Lathe equipped with a power feed turnstile bed turret attachment, oil pan, and oil pump for production operations in the manufacturing plant. With this equipment, the production capacity of the lathe on duplicate work is greatly increased. Any size of South Bend Lathe can be supplied with similar attachments.

### Chip Pans for Bench Lathes

Size Lathe	Cat. No.	LENGTH OF BED				
		3'	3½'	4'	4½'	
<b>Countershaft Driven and Horizontal Motor Driven Bench Lathes</b>						
9" W.S.	1297-W	Boxal	Cupac	Domav	Fokaw	
10 in.	1297-N	Zubar	Cumob	Dobac	Fowik	
<b>Underneath Belt Motor Driven Bench Lathes</b>						
9" W.S.	1377-W	Buyat	Cusar	Dotal		
10 in.	1377-N	Zasuk	Cuxek	Doxer	Femah	

### Oil Pans for Bench Lathes

Size Lathe	Cat. No.	LENGTH OF BED			
		3'	3½'	4'	4½'
<b>Countershaft Driven and Horizontal Motor Driven Bench Lathes</b>					
9" W.S.	1497-W	Buzag	Cunab	Dopen	Fopal
10 in.	1497-N	Zaeus	Cokex	Diwek	Fuxen
<b>Underneath Belt Motor Driven Bench Lathes</b>					
9" W.S.	1597-W	Birok	Cieez	Dosay	
10 in.	1597-N	Zehoc	Canez	Dozik	Fumar

## Oil Pump, Reservoir, and Piping for Countershaft and Motor Driven Lathes

The oil pump equipment described below is intended for use with South Bend Lathes equipped with oil pans as described above. The oil pump is self-priming as it is beneath the oil level.

Oil Pump Equipment for Countershaft Driven Lathes include oil pump, piping, reservoir, and a flat pulley for the countershaft to drive the oil pump. Leather belting for use between

countershaft and pump is supplied to order at extra cost.

Oil Pump Equipment for Motor Driven Lathes includes a motor driven oil pump, tubing, reservoir, ¼ H.P. motor, as listed below, with switch wired to motor. When ordering specify voltage, phase and cycle of motor wanted.

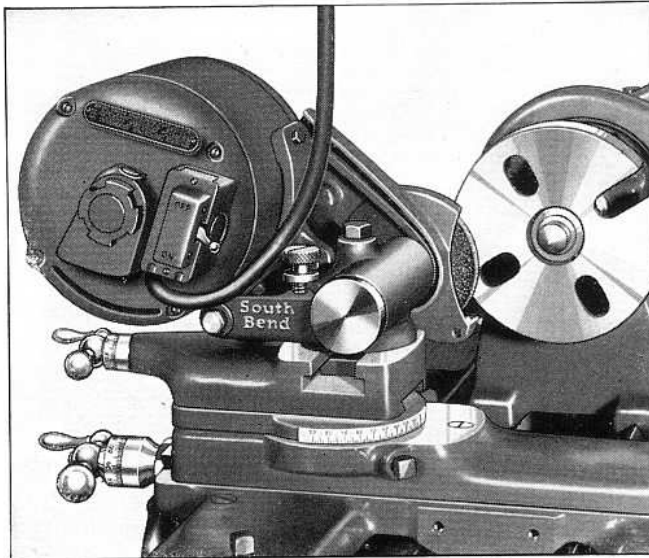
### Oil Pump, Reservoir, and Piping Fitted to Lathe at Factory

Size of Lathe Inches	FOR FLOOR LEG LATHES											FOR BENCH LATHES										
	C'shaft Driven Floor Leg Lathes		Pedestal Motor Driven Floor Leg Lathes			Underneath Motor Driven Floor Leg Lathes			C'shaft Driven Bench Lathes		Horizontal Motor Driven Bench Lathes			Underneath Motor Driven Bench Lathes								
	Cat. No.	Code Word	Cat. No.	3-Phase 50/60 Cy.A.C. 220 V. or 440 V.	1-Ph. 60 Cycle V., or 115 V.*	D. C. 110-120 V. or 230-250 Volt	Cat. No.	3-Phase 50/60 Cy.A.C. 220 V. or 440 V.	1-Ph. 60 Cycle V., or 115 V.*	D. C. 110-120 V. or 230-250 Volt	Cat. No.	Code Word	Cat. No.	3-Phase 50/60 Cy.A.C. 220 V. or 440 V.	1-Ph. 60 Cycle V., or 115 V.*	D. C. 110-120 V. or 230-250 Volt	Cat. No.	3-Phase 50/60 Cy.A.C. 220 V. or 440 V.	1-Ph. 60 Cycle V., or 115 V.*	D. C. 110-120 V. or 230-250 Volt		
9 W.S.	1264-W	Hiwak	1664-W	Jawic	Jupen	Jivec	1674-N	Lowem	Limen	Lutan	1681-W	Pihax	1854-W	Rugix	Rucay	Ruhan	1901-W	Sanep	Soxax	Sudam		
10	1264-N	Hizor	1664-N	Jawke	Jusen	Jivom	1675-N	Lowsa	Linar	Lutbo	1681-N	Pigak	1854-N	Rugoz	Ruber	Ruhoc	1901-N	Sanoz	Soeuz	Sudoc		
13	1266	Hixeb	1666	Jazem	Jurak	Jivus	1676	Loweu	Lipax	Luter												
14½	1267	Hixol	1667	Jazib	Juris	Jiwam	1677	Loxav	Lipeb	Lutiv												
16	1268	Hixur	1668	Jazob	Jusig	Jiweo	1678	Loxez	Lipol	Lutoc												
16-24	1269	Hiyep	1669	Jazud	Jusom	Jiwug	1679															

\*Oil Pump for operation on 1-phase 60-cycle A.C. 230 Volt can be supplied at extra cost.



# Electric Grinding Attachment for South Bend Lathes



No. 30 Electric Grinder Mounted on Compound Rest of Lathe

## Equipped with Ball Bearing Spindle

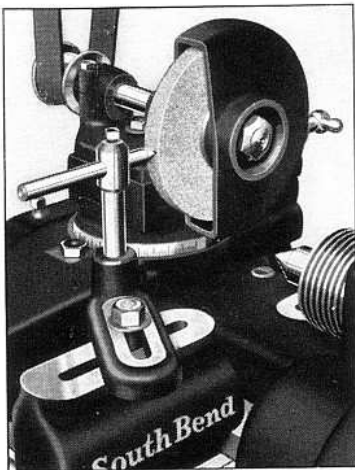
This powerful and efficient Grinding Attachment is recommended for external grinding. The grinding spindle revolves on pre-lubricated, precision ball bearings which are sealed to protect them from damage by dust and grit from the grinding wheel.

Price includes  $\frac{1}{4}$  H.P. Motor, 1725 R.P.M., ball bearing grinding spindle, V-belt, belt guard, one 4" x  $\frac{1}{2}$ " Alundum grinding wheel (grain 46-N, grade 5-B), and mounting clamp. 3-phase motor is supplied with extension cord but *not* switch or plug. 1-phase, and D.C. motors are supplied with extension cord, switch, and plug. When ordering Grinder specify exact voltage, phase, and cycle. For extra grinding wheels, see price list.

Size of Lathe	Diameter Will Grind	3-Phase 50/60 Cycle A.C. 220 or 440 V. Motor		1-Phase 60-Cycle A.C. 115 V. Motor*		Direct Current 110-120 V., or 230-250 V. Motor	
		No.	Code	No.	Code	No.	Code
9-in. W.S.	5 $\frac{1}{4}$ -in.	30-WT	Raton	30-W	Sunar	30-WD	Kusaz
10 -in.	5 $\frac{7}{8}$ -in.	30-NT	Rater	30-N	Sunev	30-ND	Kused
13 -in.	8 -in.	30-DT	Rativ	30-D	Suniz	30-DD	Kuson
14 $\frac{1}{2}$ -in.	9 -in.	30-KT	Ratoc	30-K	Surat	30-KD	Kuxes
16 -in.	9 $\frac{1}{4}$ -in.	30-GT	Raxet	30-G	Surex	30-GD	Kuxiw
16-24-in.	18 $\frac{3}{4}$ -in.	30-HT	Raxla	30-H	Suroh	30-HD	Kuxob

\*1-phase 60-cycle A.C. 230-Volt motor can be supplied at extra cost.

## Combination Holding Fixture for Diamond Dresser and Reamer and Cutter Grinding Stop

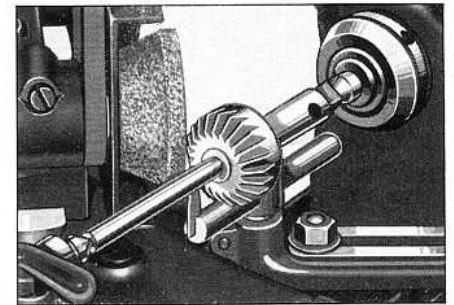


This Combination Holding Fixture is used to hold the No. 18 diamond dresser for truing grinding wheels, as shown at left, and also for holding spring stops for reamer and cutter grinding, as shown in the illustration at right. The spring stops for reamer and cutter grinding are included in the price of this fixture, but the diamond dresser is extra, as listed below. The fixture clamps directly to the lathe bed.

Cat. No.	Size	Code	Cat. No.	Size	Code
19-W	9" W.S.	Abnog	19-K	14 $\frac{1}{2}$ "	Quret
19-N	10"	Quhon	19-E	16"	Quirt
19-C	13"	Quest	19-H	16-24"	Qurem

### Diamond Dresser for Combination Holder

No. 18,  $\frac{1}{3}$  carat Diamond Dresser with  $\frac{5}{8}$ " x 6" shank to fit above Combination Holding Fixture. Code word "Quaft."

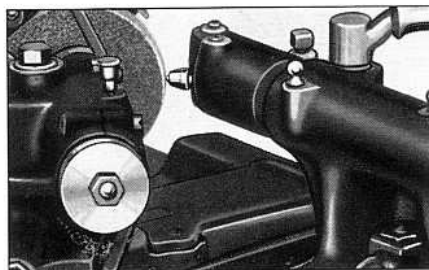


### Cup Wheel for Cutter Grinding

A cup grinding wheel is preferable for grinding reamers and cutters because the face of the grinding wheel produces a straight surface back of the cutting edge. Cat. No. 3236. Cup Grinding Wheel. Ship. wt., 14 oz. Code word ... "Lapom"

## Tailstock Holding Fixture for Diamond Dresser

This Tailstock Holding Fixture clamps to the tailstock spindle of lathe. Holds No. 406 diamond dresser for truing grinding wheel for valve refacing and general grinding work.



Cat. No.	Size	Code	Cat. No.	Size	Code
91-W	9" W.S.	Kibaf	91-K	14 $\frac{1}{2}$ "	Kezin
91-N	10"	Kinar	91-F	16"	Kiroz
91-D	13"	Kirav	91-H	16-24"	Kofoz

### Diamond Dresser for Tailstock Fixture

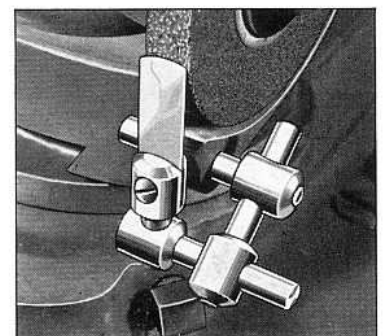
No. 406,  $\frac{1}{3}$  carat Diamond Dresser with  $\frac{3}{8}$ " x  $\frac{13}{16}$ " shank to fit Tailstock Holding Fixture. Code word "Kirwe."



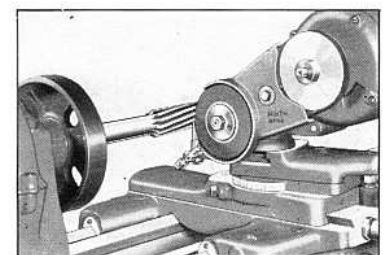
## Reamer and Cutter Grinding Stop

The cutter stop must travel with the grinding wheel when sharpening spiral fluted reamers. The adjustable stop shown at right is attached direct to the grinding attachment and may be used for grinding either straight fluted or spiral fluted reamers as shown. This stop can also be used for grinding spiral milling cutters.

Cat. No. 1362. Shipping weight, 14 ounces. Code word ..... "Maccoc"



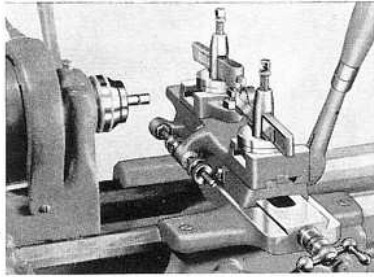
Reamer and Cutter Grinding Stop



Sharpening a Spiral Reamer

ATTACHMENTS

# Production Equipment for South Bend Lathes



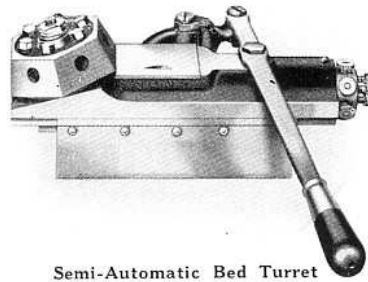
## Double Tool Slide

For mounting front and back tools on lathe. May be operated by either hand lever or cross feed screw. Top slide is operated by hand lever and has adjustable stops for both front and back tools. Bottom slide is operated by cross feed screw. Price includes tool post for back tool rest. Front rest takes tool post supplied with lathe.

Double Tool Slide (Cannot be used with Taper Attachment)

Cat. No.	Size of Lathe	Clearance Over Slide	Code Word
738-W	9" W.S.	2 3/4 in.	Buwew
1561	10 in.	2 7/8 in.	Debug
746	13 in.	4 1/2 in.	Diced
772	14 1/2 in.	4 3/4 in.	Dapax
748	16 in.	4 7/8 in.	Drain

## Hand Lever Bed Turret

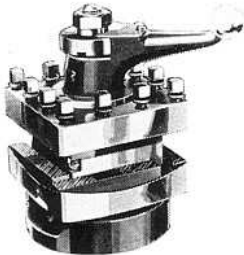


### Semi-Automatic Bed Turret

This Turret automatically indexes one-sixth of a turn by the backward movement of the hand lever. Adjustable stops are provided for each of the six faces of the turret for regulating the depth of each tool. The feed of the turret slide is controlled by the hand lever. Power feed cannot be supplied. Price includes fitting turret to lathe bed, and finish boring 6 turret holes.

Cat. No.	Size of Lathe	Std. Turret Hole	Length Turret Base	Max. Turret Feed	Code Word
1509-W	9" W.S.	5/8 in.	9 1/2 in.	4 1/4 in.	Jarim
1517	10 in.	5/8 in.	9 1/2 in.	4 1/4 in.	Jekis
1513	13 in.	5/8 in.	9 1/2 in.	4 1/4 in.	Jilts

## 4-Way Turret Tool Post



May Be Fitted with 4 Tool Holders

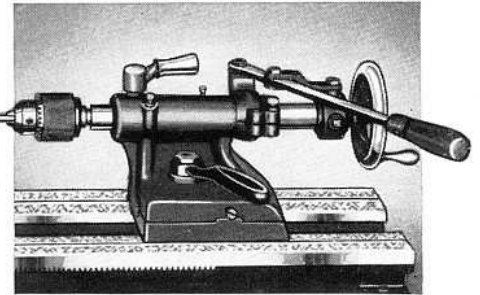
This 4-Way Turret Tool Post clamps on the compound rest of the lathe in place of the regular tool post. Takes four standard tool holders. Turret operates easily and indexes accurately.

Price includes fitting to lathe, but does not include extra tool holders.

Cat. No.	Size of Lathe	Size Square	Takes Tools	Code Word
5225	10 in.	4 1/4 in.	3/8" x 3/8"	Nubec
5230	13 in.	4 3/4 in.	1/2" x 1 1/8"	Nudah
5235	14 1/2 in.	5 1/4 in.	1/2" x 1 1/2"	Nudel
5232	16 in.	5 3/4 in.	5/8" x 1 3/8"	Nudip
5236	16-24 in.	5 3/4 in.	5/8" x 1 3/8"	Nudub

## Hand Lever Tailstock

The hand lever tailstock is a practical attachment for drilling, reaming, tapping, and centering operations in manufacturing production work. May be set for drilling to any depth up to maximum length of feed. Spindle may be operated by either hand lever or hand wheel.



Size Lathe	Length of Feed	In Lieu of Regular Tailstock		In Addition to Regular Tailstock	
		Cat. No.	Code	Cat. No.	Code
9" W.S.	2 5/8	519-W	Jibet	1197-W	Hitid
10"	2 5/8	1656	Jibuh	1194	Hokee
13"	4 3/8	902	Jebot	1199	Hokus

# High Speed Electric Grinder

## For Internal and External Grinding

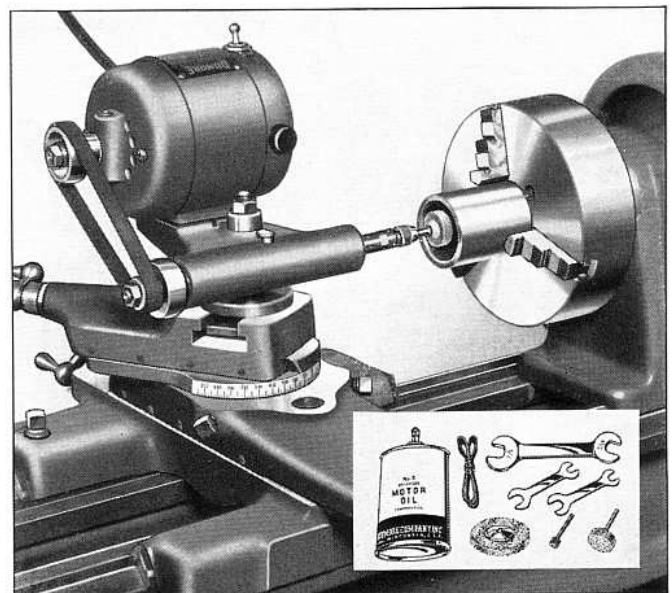
This is a small grinding attachment for either internal grinding or light external grinding. Internal capacity down to 1/8" in diameter and depth to 2 1/4". It is suitable for use on 9-inch, and 10-inch swing lathes. The grinder clamps on the compound rest of the lathe in place of tool post, as shown at right.

A double pulley drive provides two spindle speeds, one for internal, and the other for external grinding. The spindle is mounted on high speed precision ball bearings and operates smoothly at the maximum speed, which is 19,000 R.P.M.

Equipment consists of: 1/14 H.P. high speed universal motor, suitable for operation on either A.C. or D.C. electric current; switch; extension cord; wrenches; precision ball bearing grinding spindle; two belts; one wheel for external grinding (2" x 1/4"); balanced chuck for mounting internal grinding wheels; and three mounted wheels for internal grinding (3/4" x 1/4", 1/2" x 1/4", and 3/4" x 1/4").

Cat. No. 1204. For 115-volt A.C. or D.C. current. Shipping weight, 10 lbs. Code word....."Giboz"

Cat. No. 1207. For 230-volt A.C. or D.C. current. Shipping weight, 10 lbs. Code word....."Gesep"

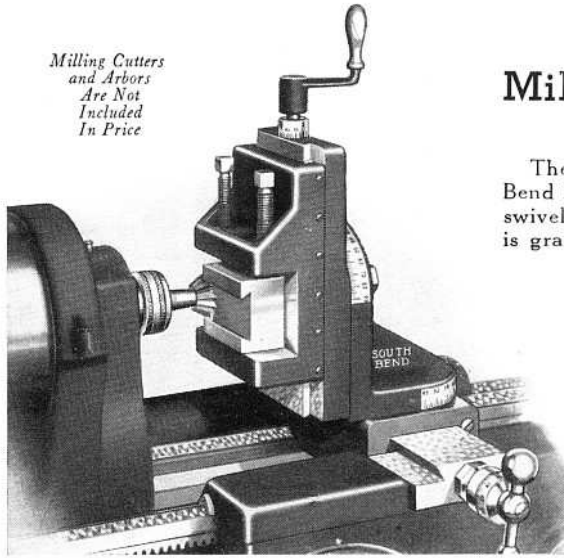


Grinding the Inside of a Bushing with the High Speed Grinder

ATTACHMENTS



Milling Cutters  
and Arbors  
Are Not  
Included  
In Price



Milling Attachment for South Bend Precision Lathes.

## Milling and Keyway Cutting Attachment

For All Sizes and Types of South Bend Lathes

The Milling and Keyway Cutting Attachment is made for all sizes of South Bend Lathes from 9-inch to 16-24-inch swing. It fits on compound rest base, swivels all the way around in a horizontal plane like the compound rest and is graduated 180 degrees. In addition, the upright Angle Plate to which the vise is attached swivels in a vertical plane, and is graduated 180 degrees. The vertical adjusting screw at the top of the attachment is equipped with a micrometer graduated collar. The automatic cross and longitudinal feeds of carriage can be used as well as hand feeds.

A lathe fitted with a milling and keyway cutting attachment makes an excellent equipment for small shops not having enough work to invest in an expensive milling machine.

### Equipment Included in Price

The equipment consists of: milling and keyway cutting attachment, two standard V-blocks for holding round work, one crank handle for feed screw, one double end wrench, and necessary bolts and nuts for installing attachment to lathe.

### Milling and Keyway Cutting Attachment

Catalog Number	Size of Lathe	Vertical Feed	Cross Feed	Vise Will Hold	Depth of Jaws	Width of Jaws	Weight Each	Code Word
9-W	9 in. W.S.	2½ in.	5⅞ in.	1½ in.	1⅝ in.	3 in.	13 lbs.	Vabif
1-N	10 in.	3 in.	5⅞ in.	1¾ in.	1⅝ in.	3½ in.	25 lbs.	Vahek
3	13 in.	4¼ in.	8⅞ in.	2⅞ in.	1⅞ in.	4⅞ in.	40 lbs.	Victo
4-K	14½ in.	6 in.	10 in.	4 in.	2 in.	5¼ in.	50 lbs.	Vulat
5	16 in.	6 in.	10½ in.	4 in.	2 in.	5¼ in.	65 lbs.	Varen
7-H	16-24 in.	6 in.	10½ in.	4 in.	2 in.	5¼ in.	65 lbs.	Vulex

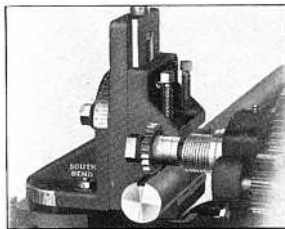


### Arbor for Side and Plain Milling Cutters

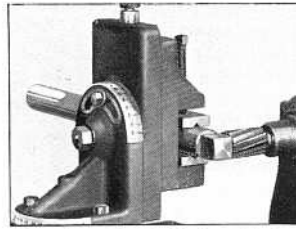
For holding cutters with standard 1-inch hole. Capacity between nut and shoulder is 1½ inches. Three spacing collars and hardened nut are furnished with each arbor. The Taper Shank is ground to fit the head spindle of the lathe

### Arbors for Milling Cutters

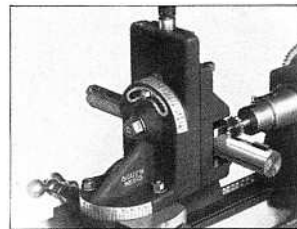
Cat. No.	Size of Lathe	Morse Taper	Code Word
109-W	9" W.S.	No. 3	Kael
1548	10 in.	No. 3	Kahee
113-M	13 in.	No. 3	Keite
114-M	14½ in.	No. 3	Kezaf
116-M	16 in.	No. 3	Kemny
224-M	16-24 in.	No. 3	Kezik



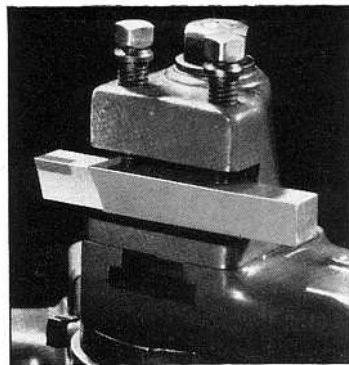
Milling a Standard Keyway.



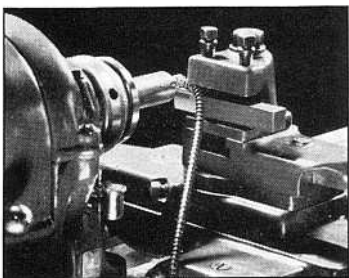
Squaring the End of a Shaft.



Milling a Woodruff Keyway.



Tungsten Carbide Tipped Cutting Tool Mounted in Open Side Tool Post



Machining a Steel Shaft at High Speed with Tantalum Carbide Tipped Cutting Tool

## Carbide Cutting Tools for Lathes

### Tungsten Carbide Cutting Tools

Tungsten carbide tipped cutting tools are used for manufacturing operations where maximum cutting speeds are desired, and are highly efficient for machining cast iron, alloyed cast iron, copper, brass, bronze, aluminum, babbitt, and abrasive non-metallic materials such as fibre, hard rubber, and bakelite. Cutting speeds may vary from 110 to 650 surface feet per minute, depending on the depth of cut and the feed.

Tungsten carbide tipped cutter bits must be ground on a special grade of grinding wheel, as they are so hard they cannot be satisfactorily ground on the ordinary grinding wheel. The cutting edge must be well

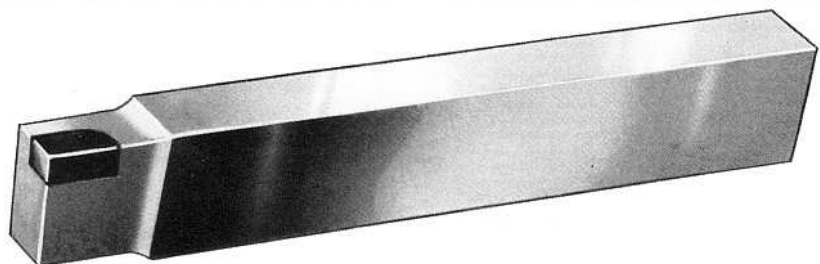
supported to prevent chipping and should have just enough clearance to permit the tool to cut freely.

### Tantalum Carbide Cutting Tools

Tantalum carbide is a term applied to a combination of tungsten carbide and tantalum carbide. Tantalum carbide tipped cutting tools are similar to tungsten carbide tools, but are used mostly for machining steel.

### Titanium Carbide Cutting Tools

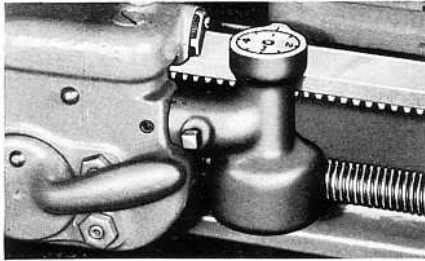
Titanium carbide is a term applied to a combination of tungsten carbide and titanium carbide. Titanium carbide is interchangeable with tantalum carbide in its uses.



Tungsten Carbide Tipped Turning Tool

ATTACH-  
MENTS

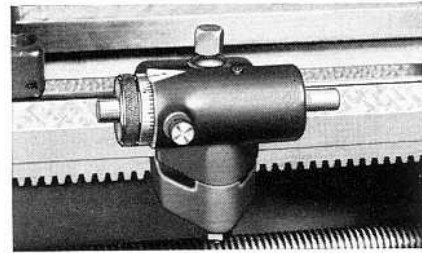
# Tools, Attachments, and Accessories for South Bend Lathes



**Thread Dial Indicator**

This attachment eliminates the necessity of reversing the lathe to return the carriage to the starting point to catch the thread at the beginning of each successive cut that is taken. The dial is numbered and graduated to show when to close the half-nuts on the lead screw for the next cut.

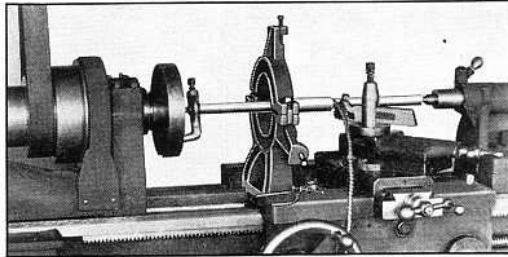
Size Lathe	Cat. No.	Code	Size Lathe	Cat. No.	Code
9 in. W.S.	810-W	Adnok	14 1/2 in.	814-K	Dabaq
10 in.	1588	Dahuk	16 in.	816	Aflot
13 in.	813	Advis	16-24 in.	824-H	Dabiy



**Micrometer Carriage Stop**

This attachment is useful for accurate facing, turning, boring, etc. It is used for locating the carriage at any point along lathe bed. Can be used on either side of carriage. Has a micrometer adjustment. The stop is hardened on both ends and may be locked for doing duplicate work.

Size Lathe	Cat. No.	Code	Size Lathe	Cat. No.	Code
9 in. W.S.	968-W	Capys	14 1/2 in.	1502	Ciwot
10 in.	1518	Cegab	16 in.	975	Climb
13 in.	973	Chain	16-24 in.	1503	Ciwuz

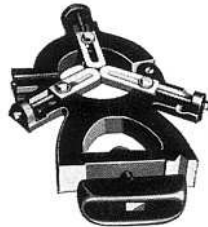


Using center rest to support long slender shaft while being machined

## Center Rest

The center rest clamps onto the inside ways of the lathe bed and is used for supporting long shafts, boring spindles, etc. The three jaws are adjustable to accommodate various sizes of work, and the top of the center rest is hinged to facilitate inserting and removing shafts.

The jaws are made of cast iron, and if properly lubricated, will wear very little. The jaws are machined all over and have adjusting screws and lock screws for setting them in the desired position.

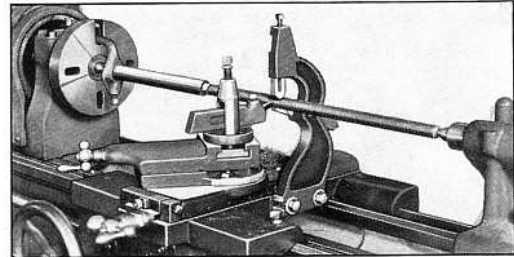


Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9 in. W.S.	125-W	3 in.	1/4 in.	Cegke
10 in.	1177	3 in.	1/4 in.	Nuzic
13 in.	341	3 3/4 in.	3/8 in.	Nygas
14 1/2 in.	1174	4 3/4 in.	3/8 in.	Nuzas
16 in.	720	4 3/4 in.	3/8 in.	Nyjou
16-24 in.	1175	4 3/4 in.	3/8 in.	Nuzum

## Center Rests for Raising Block Lathes

Center rests for lathes equipped with raising blocks (shown on page 92) are similar to the above center rests, but are fitted with a raising block to bring the center rest to the correct height.

Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9 in. W.S.	905-W	3 in.	1/4 in.	Cejix
10 in.	1579	3 in.	1/4 in.	Ceboz
13 in.	1573	3 3/4 in.	3/8 in.	Cesud
14 1/2 in.	1578	4 3/4 in.	3/8 in.	Cewaj
16 in.	1575	4 3/4 in.	3/8 in.	Cexaw
16-24 in.	1175	4 3/4 in.	3/8 in.	Nuzum

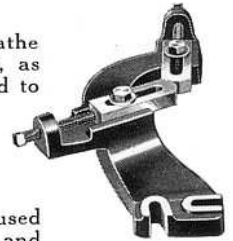


Cutting a screw thread on a long shaft with the aid of a follower rest

## Follower Rest

The follower rest is attached to the lathe carriage and travels with the carriage, as shown above. The follower rest is used to support long, slender shafts while being machined between the lathe centers. Adjusting screws and lock screws are provided for setting the jaws in position.

Slots in bottom of follower rest are used for attaching follower rest to carriage, and permit attaching or removing quickly, as it is not necessary to remove the screws from the saddle.



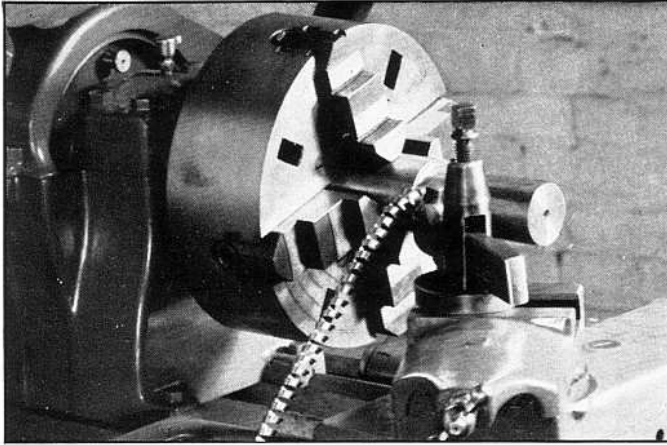
Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9 in. W.S.	34-W	2 in.	3/16 in.	Cegmo
10 in.	1353	2 1/2 in.	3/16 in.	Fanus
13 in.	376	3 1/4 in.	3/16 in.	Fanba
14 1/2 in.	1351	4 1/4 in.	3/16 in.	Felat
16 in.	730	4 1/4 in.	3/16 in.	Famuf
16-24 in.	1352	4 1/4 in.	3/16 in.	Felex

## Follower Rests for Raising Block Lathes

Follower rests for lathes equipped with raising blocks (shown on page 92) are similar to the above follower rests, but are fitted with a raising block to bring the follower rest to the correct height.

Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9 in. W.S.	938-W	2 in.	3/16 in.	Bezok
10 in.	1549	2 1/2 in.	3/16 in.	Bowir
13 in.	1395	3 1/4 in.	3/16 in.	Banic
14 1/2 in.	1398	4 1/4 in.	3/16 in.	Baqir
16 in.	1397	4 1/4 in.	3/16 in.	Bapig
16-24 in.	1352	4 1/4 in.	3/16 in.	Felex





A chuck mounted on the spindle of the lathe

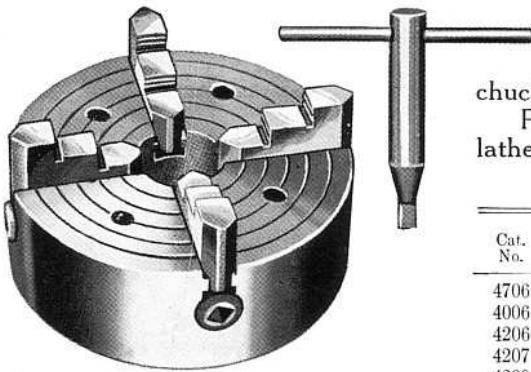
## Chucks for South Bend Lathes

### Selecting the Chuck for the Lathe

A 4-jaw Independent chuck is recommended if the lathe is to have but one chuck, as this type of chuck will hold square, round and irregular shapes in either a concentric or eccentric position. The jaws of the Independent chuck may be reversed so that work may be chucked either on the inside or outside.

The 3-jaw Universal chuck is used for chucking round and hexagonal work quickly, as the jaws move simultaneously and automatically center the work. Two sets of jaws are supplied with each 3-jaw Universal chuck, one set for external chucking and one set for internal chucking.

### 4-Jaw Independent Lathe Chucks with Reversible Jaws Fitted With Chuck Plate Threaded for Lathe Spindle



4-jaw Independent lathe chuck with reversible jaws fitted to lathe spindle nose ready for use

These chucks have four independent solid jaws with individual screw adjustment. The jaws may be reversed for chucking work either inside or outside. Chuck body is ground and chuck jaws are hardened and ground.

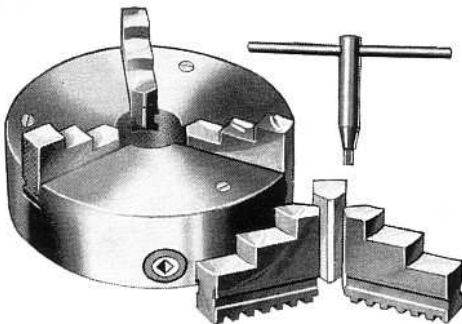
Prices include chuck, wrench, and threaded chuck plate fitted to lathe spindle and to chuck. Manufactured in the United States.

#### 4-Jaw Independent Lathe Chucks—Fitted to Lathe Spindle

Cat. No.	Size of Chuck	Approximate Shipping Weight	9-inch "Workshop"	10-inch 1/16" Col. Lathes	10-inch 1" Collet Lathes	13-inch Lathes	14 1/2-inch Lathes	16-inch Lathes	16-24-in. Lathes
4706	6"	10 1/4 lbs.	Fetol						
4006	6"	13 lbs.	<b>Fabew</b>						
4206	6"	18 lbs.	Padkn	<b>Fazos</b>	<b>Fecik</b>	Fajub	Pamez		
4207	7 1/2"	37 lbs.		Padlo	Padxa	<b>Cawoc</b>	Celaq	Pamfa	Pamid
4209	9"	50 lbs.				Cayes	<b>Celly</b>	Cocet	Cenar
4210	10"	60 lbs.					Celuk	<b>Cocuj</b>	<b>Cenev</b>
4212	12"	80 lbs.						Codik	Cenof

Recommended sizes are shown in **Bold Face Type**.

### 3-Jaw Universal Lathe Chucks with Two Sets of Jaws Fitted With Chuck Plate Threaded for Lathe Spindle



3-jaw Universal lathe chuck with two sets of jaws fitted to lathe spindle nose ready for use

Chuck jaws are moved simultaneously by a scroll, and work is automatically centered. Two sets of jaws furnished, one set for chucking internally and the other for chucking externally. Chuck body is ground and jaws are hardened. Prices include chuck with two sets of jaws, wrench, and threaded chuck plate fitted to lathe spindle. Made in the United States.

#### 3-Jaw Universal Lathe Chucks—Fitted to Lathe Spindle

Cat. No.	Size of Chuck	Approx. Shipping Weight	9-inch "Workshop"	10-inch 1/16" Col. Lathes	10-inch 1" Collet Lathes	13-inch Lathes	14 1/2-inch Lathes	16-inch Lathes	16-24-in. Lathes
3705	5"	8 1/4 lbs.	Fonis						
3005	5"	12 1/2 lbs.	<b>Faput</b>						
3505	5"	16 lbs.	Cauco	<b>Focew</b>	<b>Cukan</b>	Fomol	Cawbo	Catay	Caygu
3506	6"	22 lbs.		Caulx	Cosax	<b>Bafuk</b>	Bosaw	Cateca	Cayao
3507	7 1/2"	37 lbs.				Baguy	<b>Bosok</b>	<b>Balat</b>	<b>Baqaj</b>
3509	9"	64 lbs.					Bosuq	Bapoj	Baqen

Recommended sizes are shown in **Bold Face Type**.

### Chucks Fitted to Lathe at Factory

The illustration at the right shows a chuck that has been fitted with a threaded chuck plate to fit the spindle nose of the lathe. This chuck plate is carefully fitted to the back of the chuck so that the chuck will run true when mounted on the lathe spindle.



Chuck with Chuck-Back Attached

### Threaded Chuck Plates

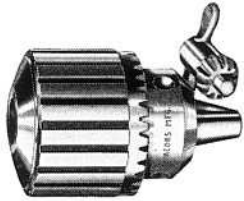
Threaded chuck plates fitted to spindle nose of lathe are supplied for those who wish to fit their own chucks to South Bend Lathes. When ordering threaded chuck plates specify size and serial number of lathe and diameter of recess in back of chuck.



Size Lathe	9-inch "Workshop"	10-inch 1/16" Collet	10-inch 1" Collet	13-inch	14 1/2-inch	16-inch	16-24-inch
Catalog No. ....	126-W	1932	1933	1937	1946	1939	1947
Code Word .....	Somak	Soken	Sokir	Sonur	Sonax	Sopig	Sopom

# Drill Chucks for South Bend Lathes

## Jacobs Three-Jaw Drill Chuck



This Chuck is practical for general drilling work in the lathe. The jaws are of tempered steel and are operated by a heavy screw. The geared sleeve and key assure a powerful grip. Price and weight include pinion key, but not arbors, which are listed below. We recommend this chuck.

Jacobs Three-Jaw Drill Chuck

Cat. No.	Capacity	Diam.	Length	Net Wt.	Ship. Wt.	Code
1200	0 to 3/8 in.	1 3/4 in.	2 1/4 in.	1 1/4 lbs.	1 7/8 lbs.	Cleve
1201	0 to 1/2 in.	2 1/8 in.	2 1/2 in.	1 3/4 lbs.	2 3/8 lbs.	Wauko
1202	3/8 to 3/4 in.	2 3/8 in.	3 1/8 in.	3 1/4 lbs.	3 1/2 lbs.	Falao
1206	3/8 to 1 in.	3 1/8 in.	5 3/8 in.	6 5/8 lbs.	7 1/2 lbs.	Faped

## Almond Three-Jaw Drill Chuck

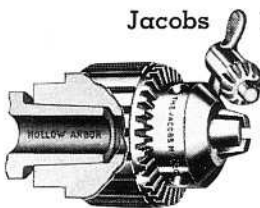


This Chuck is practical, powerful, well-balanced and accurate for all drilling work in the lathe. The jaws are of tempered steel and are operated by a heavy screw. Price and weight include pinion key, but not arbors which are listed below.

Almond Three-Jaw Drill Chuck

Cat. No.	Capacity	Diam.	Length	Net Wt.	Ship. Wt.	Code
219	0 to 3/8 in.	1 7/8 in.	2 1/4 in.	1 3/8 lbs.	1 7/8 lbs.	Acpen
220	0 to 1/2 in.	2 1/8 in.	2 3/8 in.	1 3/4 lbs.	2 1/2 lbs.	Acpi
327	1/2 to 3/4 in.	2 1/2 in.	3 3/8 in.	3 1/8 lbs.	3 3/4 lbs.	Rulid
328	3/8 to 1 in.	3 in.	4 3/8 in.	5 3/8 lbs.	6 3/8 lbs.	Rulof

## Jacobs Hollow Arbor Chuck

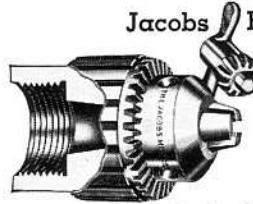


This is an ideal chuck for holding small rods and bar work for machining in the lathe. It is also practical for holding all kinds of engine valves, centered and centerless, for refacing in the lathe. Price and weight include pinion key and hollow steel arbor (No. 3 Morse Taper).

Hollow Arbor Chuck with No. 3 Morse Taper Hollow Arbor

Cat. No.	Size Lathe	Capacity	Net Wt.	Ship. Wt.	Code
645	10", 13", 14 1/2", 16", 16-24"	1/8" to 5/8"	2 5/8 lbs.	3 1/4 lbs.	Ceroh
646	10", 13", 14 1/2", 16", 16-24"	1/8" to 3/4"	4 3/8 lbs.	5 3/4 lbs.	Cerun

## Jacobs Hollow Threaded Chuck



Chuck screws on spindle nose of lathe, and has hollow body for holding small automobile engine valves for refacing. Also used for holding small rods, bars and tubes for machining. 5/8-inch chuck can be used in tailstock of lathe when fitted with solid arbor listed below. Price includes pinion key.

Jacobs Hollow Threaded Chuck

Cat. No.	Size Lathe	Capacity	Net Wt.	Ship. Wt.	Code
907-W	9" "Workshop"	1/8" to 5/8"	3 1/4 lbs.	3 3/4 lbs.	Robal
925-W	9" "Workshop"	3/16" to 3/4"	3 3/4 lbs.	4 1/4 lbs.	Rodna
925-N	*10"-11 1/16" Collet	3/16" to 3/4"	3 3/4 lbs.	4 1/4 lbs.	Ronez
925-C	13 in.	3/16" to 3/4"	3 3/4 lbs.	4 1/4 lbs.	Rodro

\*For 10-inch 1" Collet Lathe use Hollow Arbor Chuck at left.

## Arbors for Fitting Drill Chucks



Solid Arbor for Fitting Drill Chuck to Lathe

Solid Arbors are used for fitting drill chucks to lathe. When ordering drill chuck arbor only, state size and make of drill chuck, diameter and depth of arbor socket and size of lathe on which the chuck is to be used so that we can supply the correct size arbor.

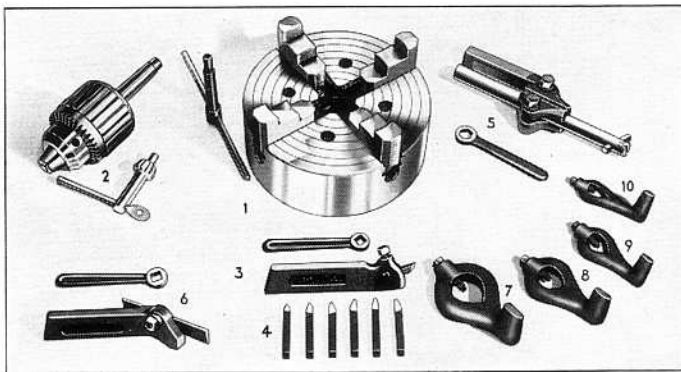
Arbors for Fitting Drill Chucks

Cat. No.	Size Lathe	Morse Taper	Net Wt.	Ship. Wt.	Code
709-W	9" W.S.	No. 2	1/2 lb.	3/4 lb.	Achuk
709-N	10 in.	No. 2	1/2 lb.	3/4 lb.	Tizak
713	13, 14 1/2-in.	No. 3	1/2 lb.	1 lb.	Adams
716	16, 16-24-in.	No. 3	1/2 lb.	1 lb.	Agate

## Chuck and Tool Assortments For South Bend Lathes

The chuck and tools shown in the assortment at left and listed below are recommended for use in the various sizes of South Bend Lathes. This is the basic equipment required for the average shop for handling general machine work, such as turning, boring, drilling, cutting-off, chucking, etc.

The 4-jaw Independent lathe chuck is listed in each assortment because this chuck will handle round, square and irregular shaped work. However, if a 3-jaw Universal chuck is wanted instead it can be furnished at additional cost.



Assortment for Each Size Lathe . . .	9" Workshop	10"-11/16" Collet Lathe	10"-1" Collet Lathe	13-inch	14 1/2 -inch	16-inch	16-24-inch
4-Jaw Independent Lathe Chuck fitted to lathe ready for use, size . . .	Fabew 6 in.	Fazos 6 in.	Fecik 6 in.	Cawoc 7 1/2 in.	Celiy 9 in.	Cocuj 10 in.	Cenev 10 in.
3-Jaw Drill Chuck (Jacobs) . . . . .	Wauko	Wauko	Wauko	Falao	Falao	Faped	Faped
Capacity of Drill Chuck . . . . .	1/2 in.	1/2 in.	1/2 in.	3/4 in.	3/4 in.	1 in.	1 in.
Arbor Fitted to Above Drill Chuck . . .	Achuk	Tizak	Tizak	Adams	Adams	Agate	Agate
Straight Shank Tool Holder . . . . .	Acump	Sahuc	Sahuc	Axcol	Awdpk	Awdpk	Awdpk
Six Ground Cutters for Tool Holders . . .	Adwos	Cimuz	Cimuz	Ciqik	Cirix	Cirix	Cirix
Boring Tool Holder, Style "D" . . . . .	Adyot						
Boring Tool Holder, Style "B" . . . . .		Hacem	Hacem	Hcoil	Hdeal	Hdeal	Hdeal
Cutting-Off Tool Holder, Right Hand . . .	Cemso	Rechuc	Rechuc	Clain	Cmolt	Cmolt	Cmolt
Four Malleable Lathe Dogs (sizes . . . . .)	1/2, 3/4, 1, 1 1/4" Dawob	1/2, 3/4, 1, 1 1/4" Dazeg	1/2, 3/4, 1, 1 1/4" Dazeg	1/2, 3/4, 1, 1 1/2" Docaq	1/2, 3/4, 1, 1 1/2" Docaq	1/2, 3/4, 1, 1 1/2" Docaq	1/2, 3/4, 1, 1 1/2" Docaq
Catalog No., Assortment Complete . . . . .	105-WT	110-T	110-L	113-T	114-T	116-T	124-T
Code Word, Assortment Complete . . . . .	Lobak	Lobis	Locig	Locus	Lohan	Loher	Lohiv

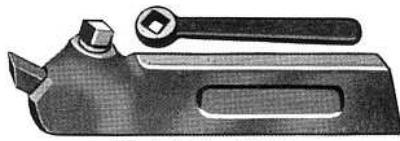


# Tool Holders for South Bend Lathes

## Lathe Tool Holders

Drop-forged steel, heat-treated and hardened lathe tool holders. Supplied in three styles: straight, right-hand, and left-hand as illustrated.

Price includes: tool holder with hardened steel set screw, one unground hardened high speed steel cutter bit, and a hardened drop-forged steel wrench.



Straight Tool Holder



Right-Hand Tool Holder



Left-Hand Tool Holder

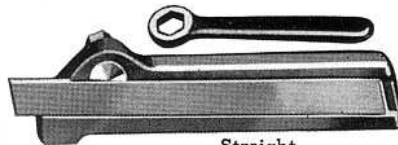
### Lathe Tool Holders—Straight, Right-Hand, and Left-Hand

Size of Lathe	Size of Shank, Inches	Size of Cutter, Inches		Straight	Right Hand	Left Hand
9" W.S.	5/8 x 13/16	1/4 x 1/4	{ Cat. No. . . . .	847-S	847-R	847-L
			{ Code . . . . .	Acump	Acurt	Acvet
10"	5/8 x 13/16	1/4 x 1/4	{ Cat. No. . . . .	846-S	846-R	846-L
			{ Code . . . . .	Sahuc	Rinas	Lekam
13"	1/2 x 1 1/8	5/16 x 3/16	{ Cat. No. . . . .	852-S	852-R	852-L
			{ Code . . . . .	Axcol	Anmyb	Ashtg
14 1/2" } 16" } 16-24" }	5/8 x 1 3/8	3/8 x 3/8	{ Cat. No. . . . .	853-S	853-R	853-L
			{ Code . . . . .	Awdpk	Amnza	Ariuf

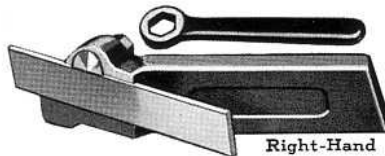
## Cutting-off Tool Holders

Cutting-off tool holders are made of drop-forged steel, heat-treated and hardened. Supplied in three styles: straight, right-hand, and left-hand as illustrated.

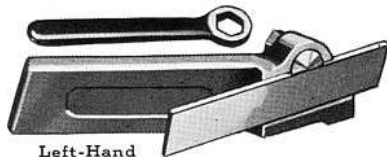
Price includes: tool holder with hardened steel set screw, one high speed ground cutter blade, and a hardened drop-forged steel wrench.



Straight



Right-Hand



Left-Hand

### Cutting-off Tool Holders—Straight, Right-Hand, and Left-Hand

Size of Lathe	Size Shank, Inches	Size Cutter, Inches		Straight	Right Hand	Left Hand
9" W.S.	5/8 x 13/16	3/16 x 3/16	{ Cat. No. . . . .	833-S	833-R	Not Supplied
			{ Code . . . . .	Adeat	Cemso	
10"	5/8 x 13/16	3/16 x 1/2	{ Cat. No. . . . .	736-S	736-R	736-L
			{ Code . . . . .	Sohie	Reeuh	Lebic
13"	1/2 x 1 1/8	1/8 x 3/4	{ Cat. No. . . . .	883-S	883-R	883-L
			{ Code . . . . .	Ajame	Clain	Alrok
14 1/2" } 16" } 16-24" }	5/8 x 1 3/8	1/8 x 3/8	{ Cat. No. . . . .	884-S	884-R	884-L
			{ Code . . . . .	Akilt	Cmolt	Alego

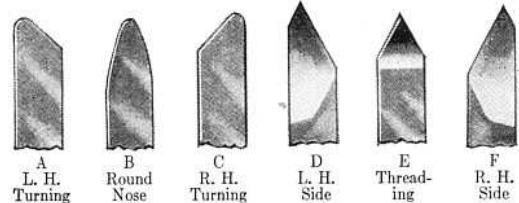
## High Speed Steel Cutter Bits



### Ground to Shape—Ready to Use

Made of best quality high speed steel. (Rex AA, Red Cut Superior, or equal) heat-treated, hardened and ground to the forms shown and ready to use in lathe tool holders.

The illustration below shows six cutter bits ground to the shapes that are most practical for general work. When ordering be sure to specify catalog numbers, and the letters designating the shapes of cutter bits wanted.



A L. H. Turning  
B Round Nose  
C R. H. Turning  
D L. H. Side  
E Threading  
F R. H. Side

### Ground High Speed Steel Cutter Bits

Size of Lathe	Size Square, Inches	Length Cutter, Inches	Single Bit		Set of 6 Bits	
			Cat. No.	Code Word	Cat. No.	Code Word
9" W.S.	1/4	2	1355	Adwap	291	Adwos
10"	1/4	2	1305	Fihet	1779	Cimuz
13"	5/16	2 1/2	1313	Alptx	1777	Ciqik
14 1/2" } 16" } 16-24" }	3/8	3	1316	Amquy	1778	Cirix

## Cutter Bits—Not Ground



### High Speed Steel Cutter Bits

Made of best quality high speed steel. (Rex AA, Red Cut Superior, or equal) heat-treated and hardened but not ground. For use in lathe tool holders.

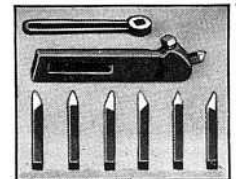
Cutter Bits may be ordered singly or in sets of six or more. Specify catalog number when ordering.

### Unground High Speed Steel Cutter Bits

Size of Lathe	Size Square, Inches	Length Cutter, Inches	Single Bit		Set of 6 Bits	
			Cat. No.	Code Word	Cat. No.	Code Word
9" W.S.	1/4	2	1460	Adwir	1629	Cixas
10"	1/4	2	1417	Gewoc	1622	Cizah
13"	5/16	2 1/2	1422	Avzdh	1632	Civog
14 1/2" } 16" } 16-24" }	3/8	3	1423	Awaei	1633	Ciwar

## Tool Holder and Cutter Bit Set

Set consists of tool holder (choice of straight, right-hand, or left-hand) with one unground H. S. steel cutter bit and a set of 6 H. S. steel cutter bits ground to forms A to F shown at right.



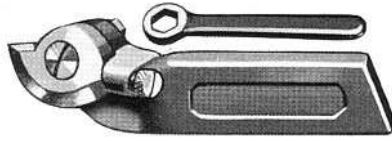
### Tool Holder and Cutter Bit Set

Size Lathe	9" W.S.	10"	13"	14 1/2"	16", 16-24"
Cat. No. . . . .	323-A	603-N	603-D	603-E	603-E
Code Word. . . .	Aetit	Cigur	Civev	Civiz	Civiz

# Tool Holders, and Boring Tools for South Bend Lathes

## Threading Tool Holder

Made of drop-forged steel. Cutter requires grinding on top edge only to sharpen. Price includes: threading tool holder with hardened steel set screw, one high speed steel single point cutter (choice of V; U.S.S.; or Whitworth Standard—Sharp V cutter furnished unless otherwise ordered); and wrench. When ordering specify cutter wanted and give pitch or number of threads per inch to be cut.

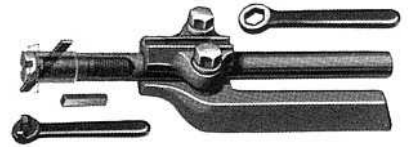


Threading Tool Holder

Size of Lathe	Threading Tool Complete			Extra Cutters (H. S. Steel)	
	Cat. No.	Size of Shank, Inches	Code Word	Cat. No.	Code Word
9" W.S.	845	3/8 x 3/4	Adfob	S14	Adurp
10"	648	5/16 x 3/4	Ganut	638	Giwen
13"	867	1/2 x 1 1/8	Adtir	S62	Airdw
14 1/2"	868	5/8 x 1 3/8	Acujq	S63	Ahgev
16"					
16-24"					

## Style "B" Boring Tool Holder

Made of drop-forged steel. Cutter can be set either straight or at a 45-degree angle. Price includes: drop-forged steel boring tool holder with hardened steel set screws, sleeve bar, end cap, two wrenches and two unground high speed steel cutter bits.

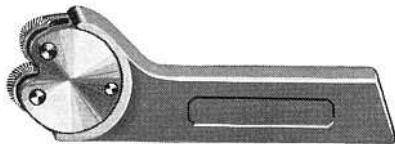


Style "B" Boring Tool Holder

Size of Lathe	Tool Complete				Extra Cutter Bits		
	Cat. No.	Size of Shank, Inches	Size of Bar, Inches	Code Word	Cat. No.	Size of Cutter, Inches	Code Word
9" W.S.	423	3/8 x 3/4	1/2 x 8	Hayun	454-W	3/16	Hopoc
10"	546	5/16 x 3/4	1/2 x 8	Hacem	506	3/16	Hoseg
13"	431	1/2 x 1 1/8	3/4 x 12 1/8	Heoil	456	1/4	Heino
14 1/2"	432	5/8 x 1 3/8	15/16 x 14 1/8	Hdeal	457	3/16	Hdzat
16"							
16-24"							

## Knurling Tool Holder

Knurling tool holder is made of drop-forged steel, heat-treated and hardened. Knurls are made of tool steel, tempered. Price includes: holder with choice of knurls; in coarse, medium straight, fine straight, or diamond shape. When ordering, specify pattern of knurls wanted; otherwise medium straight knurls will be supplied.



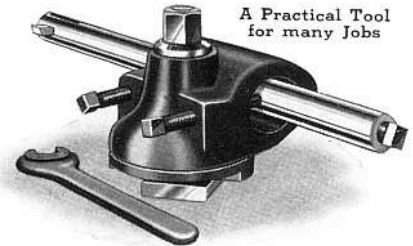
Knurling Tool

Extra Knurls

Size of Lathe	Tool Complete			Coarse, Medium or Fine Straight or Diamond Shape				
	Cat. No.	Size of Shank, Inches	Code Word	Cat. No.	Dimensions, Inches			Code Word
					Dia.	Face	Hole	
9" W.S.	820	3/8 x 3/4	Domta	S17	5/8	3/16	7/32	Digmo
10"	665	5/16 x 3/4	Dozah	666	5/8	3/16	7/32	Dikam
13"	893	1/2 x 1 1/8	Dilge	888	3/4	1/4	1/4	Deram
14 1/2"	894	5/8 x 1 3/8	Djoma	889	3/4	1/4	1/4	Demon
16"								
16-24"								

## Heavy Duty Boring and Turning Tool

This is a very rigid combination tool for boring, turning, and facing operations. Holder takes bars from 3/8" up to size listed in tabulation.



A Practical Tool for many Jobs

Tool may be swiveled to any angle and holder may be reversed for turning extra large diameters. Bar may be turned in holder to adjust angle of cutter bit and height of cutting edge.

Provides rigid support for the cutter bit and is a practical tool as it may be used for many unusual jobs. Price includes: holder, boring bar, cutter bit, and wrench.

## Heavy Duty Boring and Turning Tool

Size of Lathe	Tool Complete			Holder Only		Bar Only	
	Cat. No.	Size of Bar, Inches	Code Word	Cat. No.	Code Word	Cat. No.	Code Word
9" W.S.	469-W	3/4 x 14	Hamon	3677-W	Bahen	2119-W	Kaday
10"	1658	3/4 x 14	Habic	3676	Bimon	2125	Kasur
13"	471	1 1/4 x 18	Hares	3679	Bahev	2121	Kafaz
14 1/2"	472	1 1/2 x 20	Hezok	3680	Bahoc	2122	Kafed
16"	473	1 1/2 x 20	Heboz	3681	Balag	2123	Kafih
16-24"							

## Style "D" Boring Tool Holder

For boring work of small internal diameter, and for threading, turning, etc. Price includes drop-forged steel boring tool holder, one boring bar and wrench. Will take the following sizes of boring bars: 9" and 10" Lathes, 1/8" to 1/2"; 13" Lathes, 1/4" to 3/4"; 14 1/2", 16" and 16-24" Lathes, 3/8" to 1".



Style "D" Boring Tool Holder

Size of Lathe	Tool Complete				Extra Boring Bars*		
	Cat. No.	Size of Shank, Inches	Size of Bar, Inches	Code Word	Cat. No.	Size of Bar, Inches	Code Word
9" W.S.	505-F	3/8 x 3/4	1/4 x 5	Advot	3856-E	1/8 x 4	Buroq
10"	505-N	5/16 x 3/4	1/4 x 5	Pahuz	3856-F	5/16 x 4 1/2	Busaq
13"	505-C	1/2 x 1 1/8	3/8 x 7	Pagas	3856-A	1/4 x 5	Bebis
14 1/2"	505-D	5/8 x 1 3/8	7/16 x 8	Pagew	3856-B	5/8 x 6	Beboy
16"					3856-C	5/8 x 7	Bedit
16-24"					3856-D	7/16 x 8	Bedok

\*For use in any size Style "D" or Style "B" Boring Tool Holder.

## Combination Center Drill and Countersink

For drilling center hole and countersinking 60° angle for lathe center. Made of carbon tool steel, hardened and ground.



## Combination Center Drill and Countersink

Diam. of Work	Diam. of Drill	Diam. of Body	Single Drill	
			Cat. No.	Code
3/16 to 5/16 in.	1/16 in.	15/64 in.	898-A	Xmqib
3/8 to 1 in.	3/32 in.	.302 in.	898-B	Xnrjc
1 1/4 to 2 in.	1/8 in.	.302 in.	898-C	Xoskd
2 3/4 to 4 in.	5/32 in.	7/16 in.	898-D	Xpoez



# Lathe Dogs, and Centers for South Bend Lathes



Heavy Type Standard Lathe Dog



Heavy Type Safety Lathe Dog

## Standard and Safety Lathe Dogs

Made of heavy malleable iron and are properly designed for strength and service. The Standard Dog has square head alloy steel set screw. The Safety Dog has a headless alloy steel set screw and wrench.

### Heavy Type Lathe Dogs

For 13-inch to 16-24-inch Swing Lathes

Capacity of Lathe Dog	Standard Lathe Dogs		Safety Lathe Dogs	
	Cat. No.	Code Word	Cat. No.	Code Word
3/8 in.	1-M	Holal	1-MH	Kelig
1/2 in.	2-M	Holep	2-MH	Kelom
5/8 in.	4-M	Holit	4-MH	Kelus
1 in.	6-M	Holoz	6-MH	Kenam
1 1/4 in.	8-M	Holuf	8-MH	Kemug
1 1/2 in.	10-M	Homaz	10-MH	Kenaz
1 3/4 in.	11-M	Homih	11-MH	Kened
2 in.	12-M	Homon	12-MH	Kenih
2 1/2 in.	14-M	Homut	14-MH	Kenom
3 in.	15-M	Honam	15-MH	Kenut
3 1/2 in.	16-M	Honeq	16-MH	Keqes
4 in.	17-M	Honug	17-MH	Keqiw



Light Pattern Standard Lathe Dog

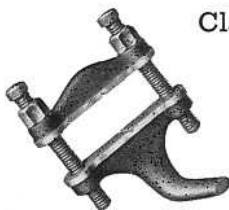


Light Pattern Safety Lathe Dog

### Light Pattern Lathe Dogs

For 9-inch and 10-inch Swing Lathes

Capacity of Lathe Dog	Standard Lathe Dogs		Safety Lathe Dogs	
	Cat. No.	Code Word	Cat. No.	Code Word
3/8 in.	1-MJ	Kamuk	1-JH	Tacey
1/2 in.	2-MJ	Kanad	2-JH	Tacie
5/8 in.	4-MJ	Kaneh	4-JH	Tadah
1 in.	6-MJ	Kanil	6-JH	Tadip
1 1/4 in.	8-MJ	Kanar	8-JH	Tebac
1 1/2 in.	10-MJ	Kanux	10-JH	Tebeg



## Clamp Lathe Dogs

Made of heavy drop-forged steel, carefully machined and hardened. Practical for holding round, hexagonal or rectangular work. Each clamp lathe dog is boxed separately.

### Clamp Lathe Dogs

Catalog Number	Capacity		Size Lathe Used on	Code Word
	Maximum Opening	Distance Between Screws		
160	1 5/8"	1 3/4"	9" W.S.; 10"; 13"; 14 1/2"; 16"; and 16-24"	Laqat
161	1 7/8"	2 1/4"	13"; 14 1/2"; 16"; and 16-24"	Laqib
162	2 1/8"	2 3/4"	13"; 14 1/2"; 16"; and 16-24"	Laqoh
163	3 1/4"	3 1/2"	14 1/2"; 16"; and 16-24"	Laqun

## 60° Head Spindle Lathe Center



Made of tool steel, accurately ground all over. For use in headstock spindle of the lathe. Not hardened.

Size Lathe	9" W.S.	10 in.	13 in.	14 1/2 in.	16 in.	16-24 in.
Cat. No.	725-W	725-N	725-C	725-K	725-E	725-J
Code Word	Adgud	Hosik	Hexop	Hexuv	Heyap	Heyet

## 60° Tail Spindle Lathe Center

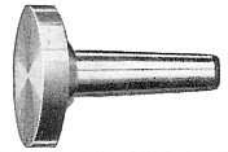
Made of tool steel, hardened and ground all over. For use in tailstock spindle of the lathe.



Size Lathe	9" W.S.	10 in.	13 in.	14 1/2 in.	16 in.	16-24 in.
Cat. No.	726-W	726-N	726-C	726-K	726-E	726-J
Code Word	Centre	Cehob	Cheat	Cepog	Clase	Cepum

## Drill Pad

Used in tailstock spindle to support flat work while being drilled. Shank is ground to fit taper in tailstock spindle.



Size Lathe	9" W.S.	10 in.	13 in.	14 1/2 in.	16 in.	16-24 in.
Cat. No.	727-W	727-N	727-C	727-K	727-E	727-J
Code Word	Donav	Dasug	Dahex	Dacim	Dahib	Dabuk

## Crotch Center



Used in tailstock for drilling cross holes in shafts, oil holes in bushings, etc.

Cat. No.	Size of Lathe	Code Word
728-W	9" W.S.	Fanid
728-N	10 in.	Fenic
728-C	13 in.	Fevay
728-K	14 1/2 in.	Fijes
728-E	16 in.	Fomur
728-J	16-24 in.	Fomax

## Large Face Plate for 9" Lathe

The large face plate is threaded to fit the spindle nose of the lathe, has slots for clamping work or special face plate fixtures. It is heavily constructed and is ribbed on the back. May be used for general work and machine shop work.

Cat. No. 40-W. Face Plate for 9" Workshop lathe. Outside diameter 7 3/8". Code, "Cehak."



## Adjustable Thread Cutting Stop for 9" Lathe

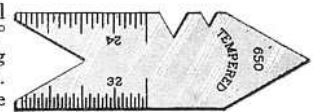
The adjustable thread cutting stop is used for regulating the depth of each chip when cutting screw threads. This attachment may also be used for regulating the depth of the cut for regular turning operations. The attachment clamps on the cross slide dovetail of the lathe and can be locked in any position.

Cat. No. 67-W. Thread Cutting Stop for 9" Workshop lathe. Code Word, "Cegpy."



## Center Gauge

The center gauge is a useful tool for the lathe operator. The 60° included angle is used for checking the angle of the lathe center point. The two small 60° notches in the side of the tool are used for grinding and setting the point of the lathe tool for cutting screw threads. Made of good quality tool steel, hardened and tempered. Cat. No. 650. Center Gauge. Code "Xutje."

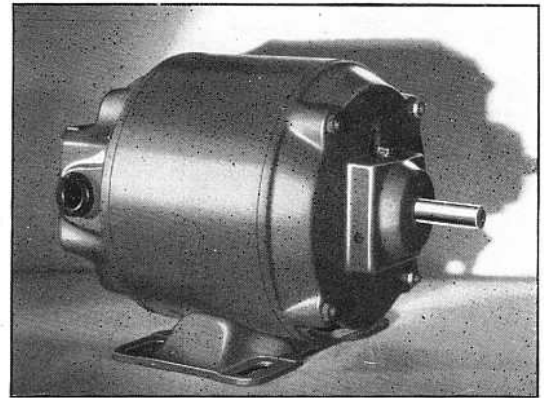


## Motors for South Bend 16", 14 1/2", 13", and 10" Lathes

The motor is included in the price of all 10-inch swing and larger South Bend Motor Driven Lathes. Equipment also includes drive unit, drum type reversing switch, wiring between motor and switch, and necessary belting. Instant reversing motors are supplied to permit reversing the lathe spindle for cutting screw threads, tapping, grinding, and other classes of work that require reversing the lathe spindle instantly. Motors are General Electric, Westinghouse, or equal make.

When ordering motor driven lathes, be sure to specify the correct motor. If you are not sure of the exact voltage, phase and cycle of the current supplied to your shop, get this information from the power company before you order.

When ordering by telegram or cablegram use code words below to indicate motor specifications. If motor characteristics differ from those listed below, give the exact voltage, phase and cycle.



Reversing Motor

### Code Words for Ordering Motors for 10-inch and Larger Lathes

Code	
Zapin	1-phase, 60-cycle, 115-volt*, A.C. Inst. Rev. Motor
Zutam	1-phase, 50-cycle, 115-volt*, A.C. Inst. Rev. Motor
Zbras	1-phase, 60-cycle, 230-volt*, A.C. Inst. Rev. Motor
Zuren	1-phase, 50-cycle, 230-volt, A.C. Inst. Rev. Motor
Zompe	3-phase, 50/60-cycle, 220-volt, A.C. Inst. Rev. Motor
Zuwar	3-phase, 50/60-cycle, 440-volt, A.C. Inst. Rev. Motor
Zuwom	3-phase, 50/60-cycle, 550-volt, A.C. Inst. Rev. Motor
Zurik	115-volt, D.C. Instant Reversing Motor
Zuwel	230-volt, D.C. Instant Reversing Motor

\*Single phase motors are made to NEMA (National Electrical Manufacturer's Association) standards for 115-volt and 230-volt current and will operate satisfactorily on 110-volt current and 220-volt current respectively.

### Omission of Motor, Switch or Wiring

South Bend Motor Driven Lathes can be supplied without motor, switch or wiring for those who prefer to furnish their own electrical equipment. Deductions for the omission of motor, switch or wiring are listed in price list.

An extra charge must be made if customer's motor and switch are fitted to lathe by us here at the factory. Charges for fitting motors, switches, etc., are quoted on request.

### Special Motors in Lieu of Standard Motors

Special motors having greater horse power than the standard motors; voltage ratings other than shown at left; 25, 30, or 40 cycle A.C. motors; special motors for marine or tropical service; and other special electrical equipment can be supplied to order. See price list for additional cost; or write for quotation, and delivery on lathe with special motor equipment.

## Motors for South Bend 9-inch "Workshop" Lathes—Models A, B, and C

Motors are not included in the prices of South Bend 9-inch "Workshop" Lathes, but are extra as listed below. The 1/4 h.p. motors are recommended for horizontal motor drive, pedestal motor drive, and underneath motor drive lathes operating at standard spindle speeds (41 to 658 R.P.M.) The 1/2 h.p. motors are recommended for twelve speed lathes and tool room lathes operating at high spindle speeds (41 to 1270 R.P.M.), also for lathes operating at standard spindle speeds on heavy duty work.

Prices of single phase and direct current motors include 6 ft. extension cord and plug. Prices of 3-phase motors do not include extension cord and plug. Prices of all D.C. motors and all A.C. motors over 230 volts include an extra charge for No. 790 switch in lieu of switch for 110-volt to 230-volt A.C. motors, which is regularly supplied with lathe.

The motors listed below are high quality General Electric, Westinghouse or equal make. They operate at approximately 1750 R.P.M. under full load and are the correct type for satisfactory lathe operation. The single phase A.C. motors are capacitor type. Split phase motors are not recommended for operating South Bend Lathes because of their low starting torque and high starting amperage.

Both instant reversing and start-stop reversing motors are supplied for 9-inch "Workshop" Lathes. The instant reversing motor will reverse instantly when the switch is thrown from the forward position to the reverse position. The start-stop reversing motor cannot be reversed instantly but must be permitted to come to a stop before throwing the switch from forward to reverse position.

Standard motors, listed in bold face type, are carried in stock for prompt shipment. Special motors, listed in light

face type, are made to order and delivery is dependent on the motor manufacturer. Single phase motors are made to NEMA (National Electrical Manufacturers Association) standards for 115-volt and 230-volt current and will operate satisfactorily on 110-volt current and 220-volt current respectively.

### Motors for 9-inch "Workshop" Lathes

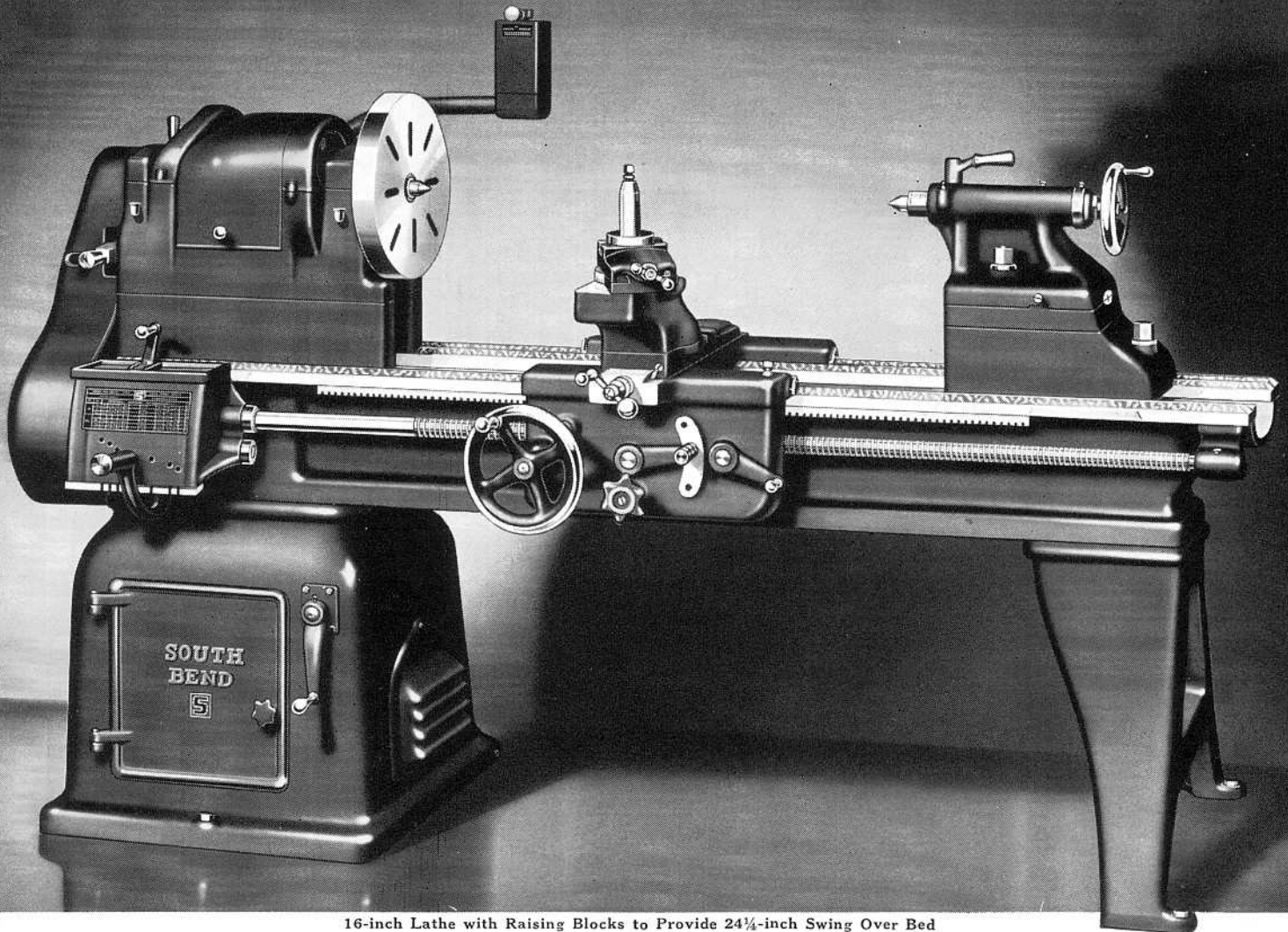
Standard motors listed in Bold Face type are carried in stock.  
Special motors listed in Light Face type are made to order.

Type of Current	Phase	Cycle	Voltage	Reversing Feature	1/4 H.P. Motors		1/2 H.P. Motors	
					Cat. No.	Code	Cat. No.	Code
A.C.	1	60	115	Start-Stop	<b>1369</b>	<b>Zural</b>	.....	.....
A.C.	1	50/60	115/230		<b>1376</b>	<b>Zutar</b>	.....	.....
A.C.	1	50 or 60	240	Start-Stop	1380*	Zawek	.....	.....
A.C.	1	60	115	Instant	<b>1346</b>	Zeeiv	1118	Zathe
A.C.	1	60	230	Instant	<b>1381</b>	Zecas	1100	Zacep
A.C.	1	50	115	Instant	<b>1317</b>	Zuwas	1111	Zacor
A.C.	1	50	230	Instant	<b>1319</b>	Zecwo	1130	Ziran
A.C.	1	50	120	Instant	1320	Zigae	1150	Zirpe
A.C.	1	50	125	Instant	1329	Ziguh	1151	Zirus
A.C.	1	60	125	Instant	1336	Zikag	1152	Ziter
A.C.	1	60	150	Instant	1348	Zikul	1154	Zadir
A.C.	1	50	240	Instant	1349*	Zelog	1155*	Zadso
A.C.	3	50/60	220	Instant	<b>1347</b>	Zecte	1172	Zesak
A.C.	3	50/60	440	Instant	<b>1350*</b>	Zecux	1179*	Zeson
A.C.	3	50/60	550	Instant	1390*	Zebit	1170*	Zecue
A.C.	3	50/60	220/440	Instant	.....	.....	1119*	Zatok
A.C.	3	60	208	Instant	1354	Zeluh	1120	Zatul
A.C.	3	50/60	190	Instant	1358	Zemad	1156	Zadut
A.C.	3	50/60	350	Instant	1360*	Zemug	1159*	Zagov
A.C.	3	50/60	400	Instant	1361*	Zenuk	1167*	Zirna
A.C.	3	50/60	420	Instant	1379*	Zabme	1168*	Zisap
D.C.	.....	.....	110-120	Instant	1359*	Zedat	.....	.....
D.C.	.....	.....	230-250	Instant	1373*	Zedoy	.....	.....
D.C.	.....	.....	115	Instant	.....	.....	1160*	Zavik
D.C.	.....	.....	230	Instant	.....	.....	1161*	Zavum

\*Includes No. 790 switch in lieu of switch as regularly supplied with lathe for A.C.

See Price List for motors not listed.





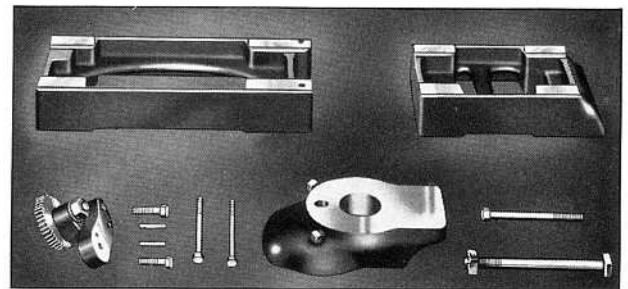
16-inch Lathe with Raising Blocks to Provide 24 $\frac{1}{4}$ -inch Swing Over Bed

## Raising Block Equipment for South Bend Lathes

### Increased Swing Over Bed and Carriage for All Sizes and Types of Lathes

Raising blocks are used to increase the swing over the lathe bed and carriage for machining light work of large diameter. Raising Blocks are preferable to a Gap Bed because the increased swing is available the entire length of the lathe bed and is not limited to face plate and chuck work.

Raising blocks ordered with the lathe will be fitted and aligned at the factory and should not be removed from the lathe. If it is necessary to remove the raising blocks from the lathe, this must be specified when the lathe is ordered, as an extra charge is made for special fitting and accessories required when the lathe is to be used both with and without the raising blocks.



Raising Block Equipment for Quick Change Gear Lathe

Raising Block Equipment includes gearing to connect lathe spindle and lead screw for cutting all the regular screw threads and for all automatic power feeds provided on lathes without raising blocks.

### Raising Block Equipment for Various Sizes and Types of South Bend Lathes

Swing Size of Lathe	Height of Raising Blocks	Swing Over Bed With Raising Blocks	Swing Over Carriage With Raising Blocks*	Approx. Shipping Weight Pounds	For C'shaft, Pedestal, or Horizontal Drive Lathes				For Underneath Motor Drive Lathes			
					Standard Change Gear		Quick Change Gear		Standard Change Gear		Quick Change Gear	
					Catalog No.	Code Word	Catalog No.	Code Word	Catalog No.	Code Word	Catalog No.	Code Word
9" W.S.	1"	11 $\frac{1}{4}$ "	7 $\frac{1}{4}$ "	36	1001-W	Jacis	1121-W	Jabuq	1581-N	Lesuk	1635-N	Kuroz
10"	1 $\frac{7}{16}$ "	12 $\frac{3}{8}$ "	9 $\frac{1}{4}$ "	45	1000-N	Jesob	1121-N	Jexor	1583	Lewas	1637	Kesix
13"	2 $\frac{5}{8}$ "	18"	13 $\frac{1}{2}$ "	100	1003	Japux	1123	Jafig	1584	Lewew	1638	Kesod
14 $\frac{1}{2}$ "	2 $\frac{3}{4}$ "	19 $\frac{3}{4}$ "	14 $\frac{3}{4}$ "	125	1009	Jagur	1162	Jaqar	1585	Lewog	1639	Kesuj
16"	2 $\frac{1}{2}$ "	20 $\frac{7}{8}$ "	15 $\frac{5}{8}$ "	170	1005	Japor	1125	Jalop	1587	Lewum	1641	Kerop
16"	4 $\frac{3}{4}$ "	24 $\frac{1}{4}$ "	19 $\frac{3}{4}$ "	200	1039	Jataf	1163	Jelur				

\*Swing over carriage with chip guard removed.

RAISING BLOCKS

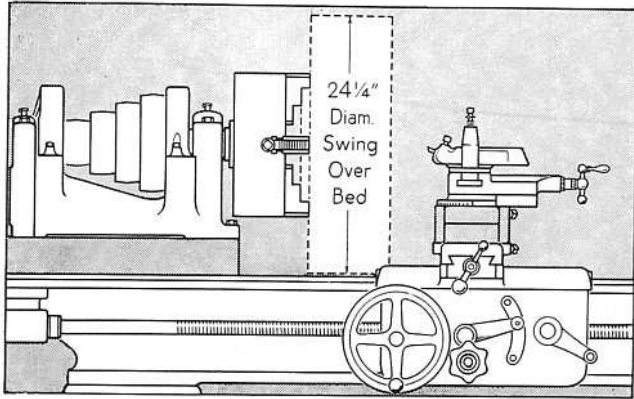


Fig. Q. Lathes with Raising Blocks have increased swing the entire distance between centers.

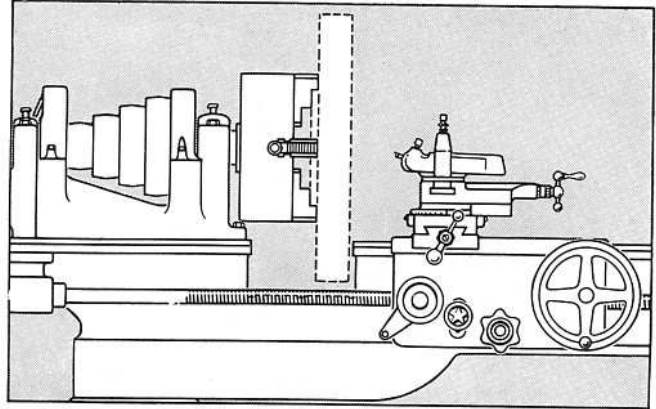


Fig. R. The increased swing of Gap Bed Lathes is limited to the width of the gap in the bed.

## Raising Block Equipment for Lathes

### The Advantages of Raising Block Lathes over Gap Bed Lathes

For machining large diameter work, raising block construction is preferable to gap bed construction because the increased swing over the lathe bed is available the entire distance between centers. This permits mounting large diameter work of any length (within the capacity of the lathe) in the chuck or between centers.

In Europe the gap bed design has been popular in the past, largely because well designed raising block equipment was not available. The disadvantage of the gap bed construction is obvious. The increased swing is available only for the width of the gap in front of the headstock, and no increased capacity is available over the lathe carriage. See Fig. R, above. This limits the large diameter work that can be done on the gap lathe to narrow jobs that do not extend beyond the width of the gap.

When a heavy chuck must be used, the available width for work is even less, because most of the width of the gap is taken up by the lathe chuck as shown in Fig. R, at top of page.

The improved offset design of the South Bend raising block for the tool rest, shown in Fig. S, below,

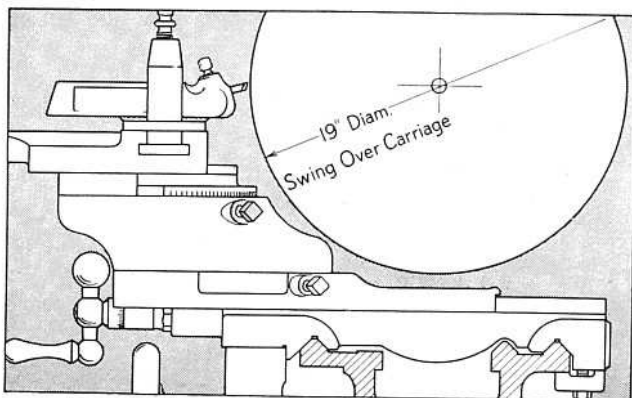


Fig. S. Offset Raising Block for Tool Rest provides increased swing over the lathe carriage.

SOUTH BEND, INDIANA, U.S.A.

permits machining large diameter work over the lathe carriage, as well as over the lathe bed.

The standard right hand saddle and apron are used on all South Bend lathes with raising blocks, as shown in Fig. Q, above. Note that the apron hand wheel is on the left and the half-nut lever is on the right side of the apron as on lathes not equipped with raising blocks.

The left hand saddle and apron as used in gap lathe construction (shown in Fig. T) is awkward to the mechanic who is accustomed to standard lathe design. The saddle can overhang the gap, which is objectionable to fine accurate work.

Lathes with raising blocks are practical for the small general shop which has only one or two lathes, yet must be equipped to take care of a wide variety of work. The lathe fitted with raising blocks has unusual capacity for machining large diameters, yet is not too heavy and cumbersome for accurate work on any of the smaller jobs.

The manufacture of gap bed lathes has been discontinued by the South Bend Lathe Works, and in their place lathes with raising blocks are recommended.

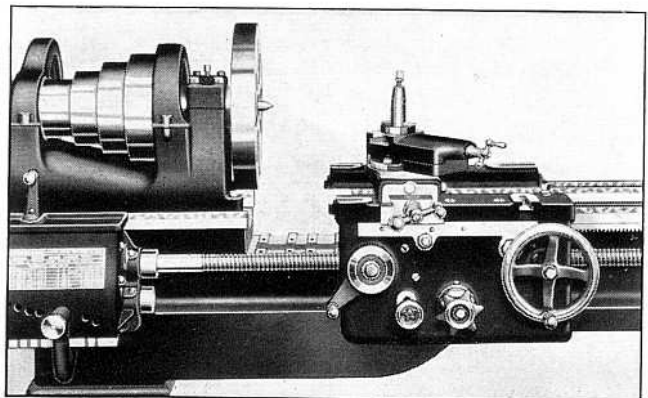
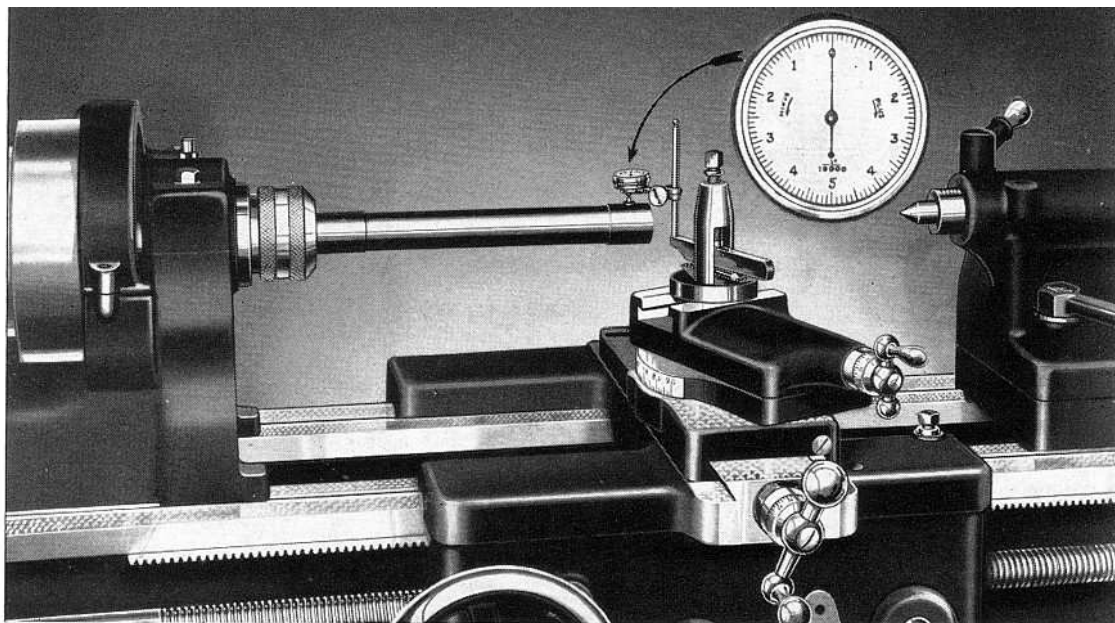


Fig. T. The overhang of the saddle on Gap Bed Lathes leaves saddle unsupported when machining work.

RAISING  
BLOCKS

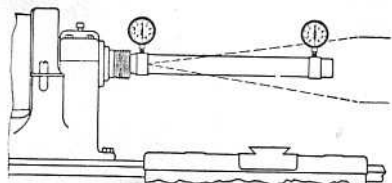




## Accuracy of South Bend Lathes

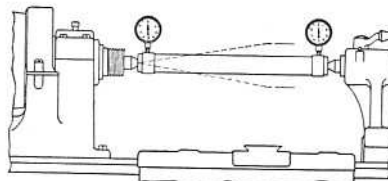
### Each Lathe Must Pass a Series of Rigid Tests

Precision accuracy is built into every South Bend Lathe. From the planing of the lathe bed to the final testing of the finished lathe, the highest standards of inspection are maintained. Sixty-four major tests are made on each lathe during the process of manufacture. The illustrations on this page show a few of the more important tests. The maximum variation allowed on any of these tests is .001".



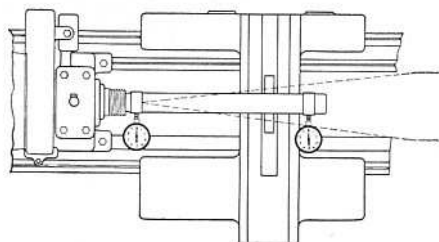
#### Spindle Alignment—Vertical Plane

The alignment of the headstock spindle with the V-ways of the lathe bed is tested in the vertical plane with a test bar and dial indicator.



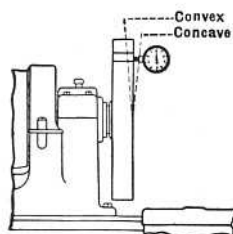
#### Tailstock Center Height

The height of the tailstock center is tested with a dial indicator and a precision test bar mounted between centers, as shown above.



#### Spindle Alignment—Horizontal Plane

The alignment of the headstock spindle with the V-ways of the lathe bed is tested in the horizontal plane as shown in the illustration above.



#### Saddle Cross Slide Test

The saddle cross slide dovetail is tested for squareness by machining the face plate and then testing with a dial indicator.

Date .....

### FACTORY TEST CARD

**Lathe Tested Under Own Power At Correct Spindle Speed**

Size of Lathe ..... Cat. No. ....  
 Type of Lathe ..... Serial No. ....  
 Type of Drive ..... Type of Bed .....

TESTS	Test Record	Tested By
<b>HEADSTOCK SPINDLE</b>		
Outer end of Test Bar runs true		
Test Bar parallel with Bed (Top)		
Test Bar parallel with Bed (Side)		
End Play Test		
Shoulder Test (Cam action)		
<b>HEADSTOCK &amp; TAILSTOCK ALIGNMENT</b>		
Parallel with Lathe Bed (Top)		
Tailstock Spindle In		
Parallel with Lathe Bed (Top)		
Tailstock Spindle Extended		
Parallel with Lathe Bed (Side)		
Tailstock Spindle In		
Parallel with Lathe Bed (Side)		
Tailstock Spindle Extended		
<b>FACE PLATE—Concave</b>		
LEAD SCREW—Cam Action, Forward		
Cam Action, Reverse		
<b>SADDLE</b>		
Saddle Gib Adjustment		
Cross Slide Test		
Bearing on Lathe Bed		
<b>COMPOUND REST</b>		
Bearing on Swivel		
Bearing on Top Slide		
<b>COUNTERSHAFT—Clutch Test</b>		
<b>ADJUSTMENTS MADE IN FINAL TEST</b>		
.....		
.....		
.....		
ASSEMBLED BY .....		
GENERAL INSPECTION .....		
DATE TESTED .....		
Form 251 (10/17/31)		

#### Factory Test Card

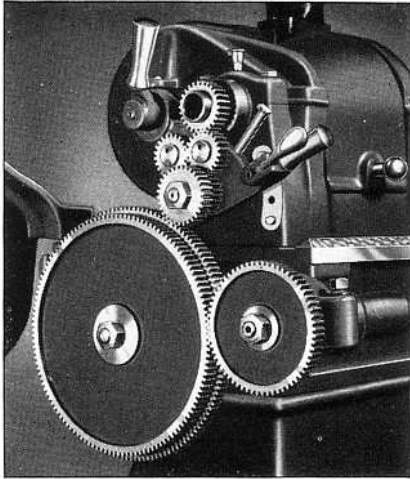
The illustration above is a reproduction of a factory test card on which records of the final inspection tests of each South Bend Lathe are kept. This test card is filed in our office for permanent record when the lathe is shipped.

For other lathe tests see pages 2 and 3.

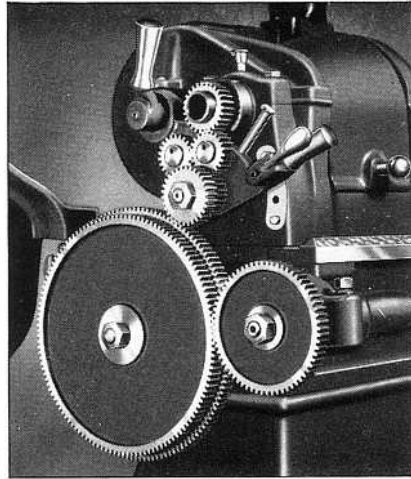
SOUTH BEND LATHE WORKS

**WE GUARANTEE** every South Bend Lathe to be accurate and mechanically perfect; to give you entire satisfaction and the service you have a right to expect. We will replace free of charge, F.O.B., South Bend, Indiana, U. S. A., within one year from the date of purchase, any lathe part that proves defective, either in material or workmanship.

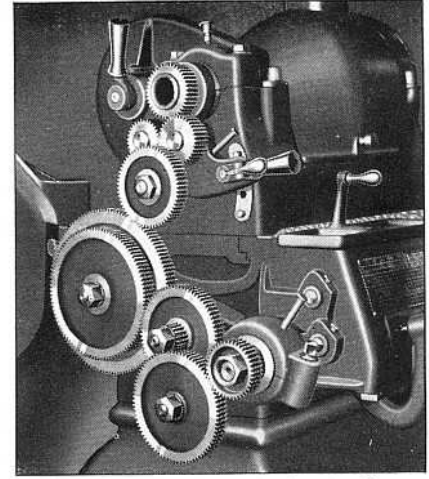
SOUTH BEND LATHE WORKS



English Transposing Gears for Cutting English Threads on Standard Change Gear Lathe with Metric Lead Screw



Metric Transposing Gears for Cutting Metric Threads on Standard Change Gear Lathe with English Lead Screw



Metric Change Gears for Cutting Metric Threads on Quick Change Gear Lathe with English Lead Screw

## Metric and English Transposing Gears

For Cutting Both English and Metric Screw Threads on South Bend Lathes

Any size or type of South Bend Lathe, whether equipped with English lead screw or metric lead screw, can be used for cutting both English and metric screw threads when equipped with a set of transposing gears.

Metric Transposing Gears are supplied for cutting metric screw threads on lathes having English lead screws.

English Transposing Gears are supplied for cutting English screw threads on lathes having metric lead screws.

Graduated Collars on the cross feed screw and compound rest screw and graduations on tailstock spindle can be supplied in either the English or the metric system, as described at bottom of page 97.

Standard Change Gear Lathes are recommended if the lathe is to be used equally for English and metric thread cutting. Metric lathes equipped with metric lead screws are more convenient if the lathe is to be used mostly for cutting metric screw threads. See pages 96 and 97.

### Metric Transposing Gears (M)

English Lead Screw—English Graduations

For cutting metric screw threads in addition to English screw threads on lathes having English lead screws. All graduations in English system. (A special gear guard is required if ordered after lathe leaves factory. Price on request.)

Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1759-W	Kazaj	1955-W	Lupal
10"	1765-N	Kunox	1955-N	Lucem
13"	1767	Kazox	1957	Luhov
14½"	1790	Kehex	1961	Lukaw
16"	1769	Kebab	1959	Lujem
16-24"	1787	Koref	1960	Lujow

### English Transposing Gears (O)

Metric Lead Screw—Metric Graduations

For cutting English screw threads in addition to metric screw threads on lathes having metric lead screws. All graduations in metric system. (A special gear guard is required if ordered after lathe leaves factory. Price on request.)

Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1281-W	Gejex	1971-W	Helur
10"	1281-N	Gozam	1971-N	Hozas
13"	1283	Gemiq	1973	Heqit
14½"	1284	Gemuq	1974	Heray
16"	1285	Genoj	1975	Herig
16-24"	1286	Gepuq	1976	Heroy

### Metric Transposing Gears (N)

English Lead Screw—Metric Graduations

For cutting metric screw threads in addition to English screw threads on lathes having English lead screws. Metric graduations in lieu of English graduations. This equipment can be supplied only when ordered with lathe.

Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1781-W	Kobaj	1941-W	Lupep
10"	1781-N	Kunir	1941-N	Luram
13"	1783	Kobox	1943	Ludin
14½"	1789	Koeob	1949	Lukok
16"	1785	Kobud	1945	Luduz
16-24"	1788	Koeax	1948	Lufag

### English Transposing Gears (P)

Metric Lead Screw—English Graduations

For cutting English screw threads in addition to metric screw threads on lathes having metric lead screws. English graduations in lieu of metric graduations. This equipment can be supplied only when ordered with lathe.

Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1291-W	Gater	1981-W	Hedar
10"	1291-N	Gohue	1981-N	Hosam
13"	1293	Gayog	1983	Higuw
14½"	1294	Gazof	1984	Hihap
16"	1295	Gazej	1985	Hihet
16-24"	1296	Gazuz	1986	Hihix

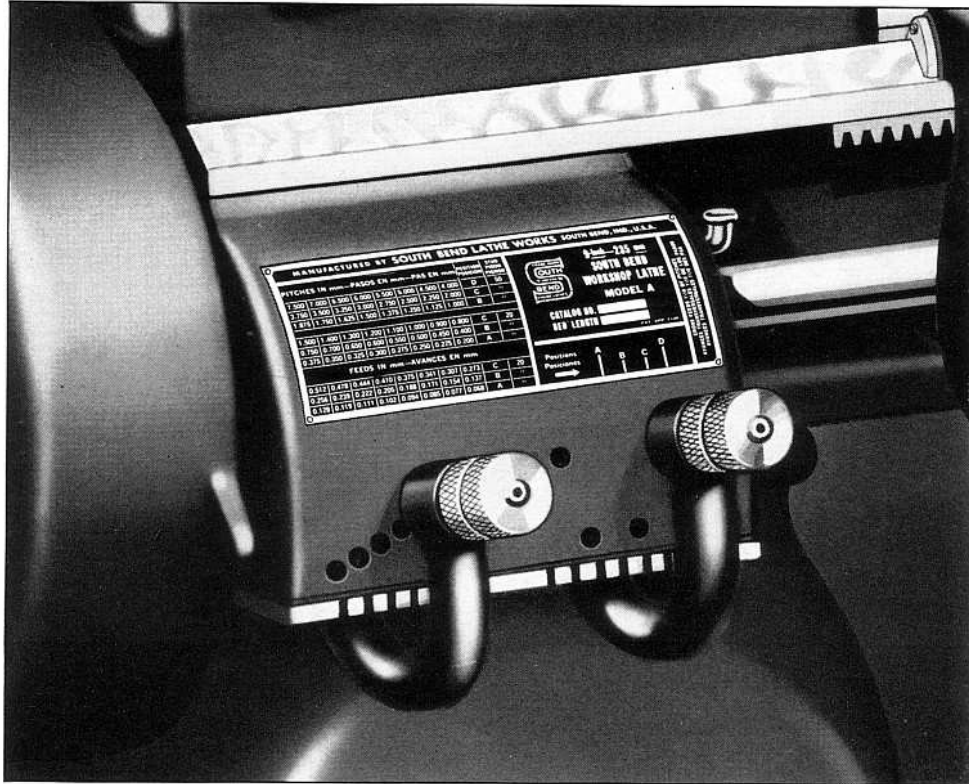
TRANSPOSING GEAR CHART				ENGLISH SCREW THREADS	
				METRIC PITCH LEAD SCREW	
THREADS PER INCH	STUD GEAR	IDLER GEAR	SCREW GEAR	FIG.	STUD GEAR
4	54	FIG. 1	24		
4½	56	FIG. 1	28		
5	54	FIG. 1	30		
5½	36	FIG. 1	22		
6	36	FIG. 1	24		
6½	36	FIG. 1	26		
7	36	FIG. 1	28		
7½	36	FIG. 2	30		
8	36	FIG. 2	32		
9	32	FIG. 2	32		
10	36	FIG. 2	40		
11	36	FIG. 2	44		
12	36	FIG. 2	48		
12½	36	FIG. 2	52		
14	36	FIG. 2	56		
16	36	FIG. 2	64		
18	32	FIG. 2	64		
20	18	FIG. 2	40		
22	18	FIG. 2	48		
24	18	FIG. 2	56		
26	18	FIG. 2	64		
27	18	FIG. 2	64		
28	18	FIG. 2	64		
30	18	FIG. 2	60		
32	18	FIG. 2	64		
35	16	FIG. 2	64		
40	18	FIG. 2	80		
44	18	FIG. 3	44		
48	18	FIG. 3	48		
52	18	FIG. 3	52		
54	18	FIG. 3	54		
56	18	FIG. 3	56		
60	18	FIG. 3	60		
64	18	FIG. 3	64		
72	16	FIG. 3	64		
80	18	FIG. 3	80		

TRANSPOSING GEAR CHART				METRIC SCREW THREADS	
				ENGLISH PITCH LEAD SCREW	
M/M PITCH	STUD GEAR	IDLER GEAR	SCREW GEAR	FIG.	STUD GEAR
6.00	48	FIG. 1	20		
5.50	44	FIG. 1	20		
5.00	40	FIG. 1	20		
4.50	36	FIG. 1	20		
4.00	32	FIG. 1	20		
3.50	28	FIG. 1	20		
3.00	24	FIG. 1	20		
2.75	44	FIG. 1	40		
2.50	32	FIG. 1	20		
2.25	36	FIG. 1	40		
2.00	32	FIG. 1	40		
1.75	56	FIG. 2	80		
1.50	48	FIG. 2	80		
1.40	56	FIG. 2	100		
1.30	52	FIG. 2	100		
1.25	40	FIG. 2	80		
1.20	48	FIG. 2	100		
1.18	44	FIG. 2	100		
1.00	40	FIG. 2	100		
0.90	36	FIG. 2	100		
0.80	32	FIG. 2	100		
0.75	24	FIG. 2	80		
0.70	28	FIG. 2	100		
0.65	24	FIG. 2	100		
0.60	24	FIG. 2	100		
0.55	22	FIG. 2	100		
0.50	20	FIG. 2	100		
0.45	18	FIG. 2	100		
0.40	16	FIG. 2	100		
0.35	56	FIG. 3	100		
0.30	48	FIG. 3	100		
0.25	40	FIG. 3	100		
0.20	32	FIG. 3	100		

Index Chart Showing English Threads Cut on Metric Lathe with English Transposing Gears

Index Chart Showing Metric Threads Cut on English Lathe with Metric Transposing Gears





Metric Quick Change Gear Box for South Bend Lathes

## Metric Quick Change Gear South Bend Precision Lathes Made in All Sizes with All Types of Drives

All sizes and types of South Bend Quick Change Gear Precision Lathes can be supplied with full metric equipment including metric quick change gear box, metric lead screw, metric cross feed screw, and metric graduations. See page 97.

The metric quick change gear box supplied on all Metric Quick Change Gear South Bend Lathes is illustrated above. Changes for the various metric screw threads and power feeds are made by shifting the two levers on front of the quick change gear box and by changing the stud gear.

The screw threads cut range from 0.2 mm pitch to 7.5 mm pitch, as listed on the index chart at right. Power longitudinal feeds obtained through the gear box range from 0.068 mm to 0.512 mm per revolution of the spindle.

The direct reading index chart attached to the gear box shows the arrangement of the levers for the various threads and feeds. This quick change gear mechanism is so designed that it is impossible to lock the gears.

Screw threads from 0.2 mm pitch to 1.5 mm pitch and power feeds are instantly available by shifting the levers on the gear box when the regular stud gear is in use.

Coarse pitch screw threads ranging from 1. mm pitch to 7.5 mm pitch are obtained by replacing the regular stud gear with a special stud gear which is supplied with the lathe.

All Gears in the gear box are made of steel and are precision cut and tested for accuracy. Large bearing surfaces and ample oiling facilities assure smooth operation and long life.

Prices of all Metric Quick Change Gear Lathes are the same as for the same size and type of Quick Change Gear Lathe with the English lead screw, English quick change gear box and English graduations, as listed in the price list.

MANUFACTURED BY SOUTH BEND LATHE WORKS SOUTH BEND, IND., U.S.A.									
PITCHES IN mm—PASOS EN mm—PAS EN mm								POSITION	STUD PINION PIGNON
7.500	7.000	6.500	6.000	5.500	5.000	4.500	4.000	D	50
3.750	3.500	3.250	3.000	2.750	2.500	2.250	2.000	C	"
1.875	1.750	1.625	1.500	1.375	1.250	1.125	1.000	B	"
FEEDS IN mm—AVANCES EN mm								POSITION <td>STUD PINION PIGNON</td>	STUD PINION PIGNON
1.500	1.400	1.300	1.200	1.100	1.000	0.900	0.800	C	20
0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400	B	"
0.375	0.350	0.325	0.300	0.275	0.250	0.225	0.200	A	"
FEEDS IN mm—AVANCES EN mm								POSITION <td>STUD PINION PIGNON</td>	STUD PINION PIGNON
0.512	0.478	0.444	0.410	0.375	0.341	0.307	0.273	C	20
0.256	0.239	0.222	0.205	0.188	0.171	0.154	0.137	B	"
0.128	0.119	0.111	0.102	0.094	0.085	0.077	0.068	A	"

TRADE MARK  
**OUTR**  
TWIN  
**BEND**  
ENGINE LATHES

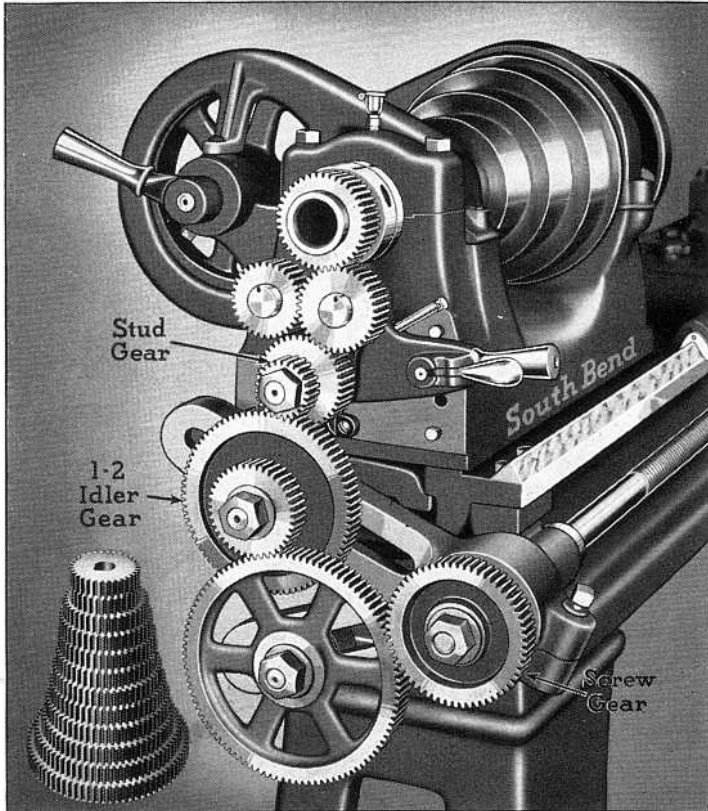
**9-inch—235 mm**  
**SOUTH BEND**  
**WORKSHOP LATHE**  
**MODEL A**

CATALOG NO. \_\_\_\_\_  
BED LENGTH \_\_\_\_\_

POSITIONS  
A B C D

CROSS FEEDS 1/10 OF PITCHES  
AVANCES TRANSVERSALES 1/10 DE LOS PASOS  
AVANCES TRANSVERSALES 1/10 DES PAS

Chart Showing Threads and Feeds Available on South Bend Metric Quick Change Gear Lathes



Metric Standard Change Gear Lathe with Gear Guard Removed to Show Change Gears

METRIC STANDARD CHANGE GEAR LATHE SCREW THREADS AND POWER FEEDS METRIC LEAD SCREW—3 M M PITCH						
M M PITCH	STUD GEAR	IDLER GEARS	SCREW GEAR	CROSS FEEDS	LONG. FEEDS	
7.00	56	FIG. 1	24			AUTOMATIC POWER FEEDS THROUGH FRICTION CLUTCH IN M.M. PER REVOLUTION OF HEADSTOCK SPINDLE
6.50	52	FIG. 1	24			
6.00	48	FIG. 1	24			
5.50	44	FIG. 1	24			
5.00	40	FIG. 1	24			
4.50	36	FIG. 1	24			
4.00	32	FIG. 1	24			
3.50	28	FIG. 1	24			
3.00	32	FIG. 1	32			
2.75	44	FIG. 1	48			
2.50	40	FIG. 1	48			
2.25	36	FIG. 1	48			
2.00	32	FIG. 1	48			
1.75	28	FIG. 1	48			
1.50	24	FIG. 1	48			
1.40	28	FIG. 1	60			
1.30	52	FIG. 2	30			AUTOMATIC POWER FEEDS THROUGH FRICTION CLUTCH IN M.M. PER REVOLUTION OF HEADSTOCK SPINDLE
1.25	40	FIG. 2	24			
1.20	48	FIG. 2	30	.126	.410	
1.10	44	FIG. 2	30	.115	.375	
1.00	40	FIG. 2	30	.105	.341	
0.90	36	FIG. 2	30	.094	.307	
0.80	32	FIG. 2	30	.084	.273	
0.75	32	FIG. 2	32	.079	.256	
0.70	28	FIG. 2	30	.073	.239	
0.65	52	FIG. 2	60	.068	.222	
0.60	48	FIG. 2	60	.063	.205	
0.55	44	FIG. 2	60	.058	.188	
0.50	40	FIG. 2	60	.052	.171	
0.45	36	FIG. 2	60	.047	.154	
0.40	32	FIG. 2	60	.042	.137	
0.35	28	FIG. 2	60	.037	.119	
0.30	24	FIG. 2	60	.031	.102	
0.25	16	FIG. 2	48	.026	.085	
0.20	16	FIG. 2	60	.021	.068	



FIG. 1

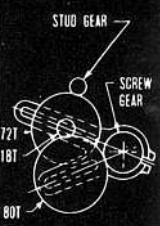


FIG. 2

Index Chart Showing Threads and Feeds on Metric Standard Change Gear Lathes

## Metric Standard Change Gear South Bend Precision Lathes Made in All Sizes with All Types of Drives

All sizes and Types of South Bend Standard Change Gear Precision Lathes can be supplied in the metric type with full metric equipment, including metric lead screw, metric cross feed screw and metric graduations.

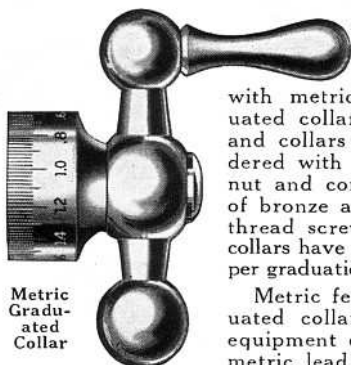
The metric lead screw and a set of independent change gears supplied with the lathe permit cutting right and left hand screw threads from 0.2 mm pitch to 7.0 mm pitch, as listed on the index chart above. In addition, the change gears provide a wide range of automatic power cross feeds and automatic power

longitudinal feeds. The automatic feeds are operated by a worm which is driven by a spline in the lead screw so that the threads of the lead screw and half-nuts are used only when cutting screw threads.

Prices of all Metric Standard Change Gear Lathes are the same as for the same size and type of Standard Change Gear Lathe with English lead screw and change gears and English graduations, as listed in the General Price List.

### Metric Graduations for South Bend Lathes

#### Metric Cross Feed and Compound Rest Screws With Metric Collars



Metric Graduated Collar

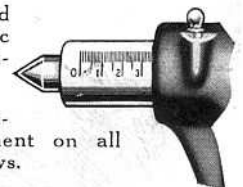
Cross feed screws and compound rest feed screws can be supplied with metric thread and metric graduated collar in lieu of regular screws and collars at no extra cost when ordered with the lathe. The cross feed nut and compound rest nut are made of bronze and tapped to fit the metric thread screws. All metric feed screw collars have graduations reading 0.02 mm per graduation.

Metric feed screws and metric graduated collars are supplied as regular equipment on all lathes equipped with metric lead screws.

#### Metric Graduations on Tailstock Spindle

The tailstock spindle can be supplied with graduations reading in the metric system in addition to English graduations at no extra cost.

Metric graduations on tailstock spindle are supplied as regular equipment on all lathes equipped with metric lead screws.



#### Metric Graduations on Attachments

The taper attachment and micrometer carriage stop can be supplied with metric graduations at no extra cost when ordered with the lathe.

Metric graduations supplied as regular equipment on all taper attachments and micrometer carriage stops ordered with lathes equipped with metric lead screws.





# Export Information on South Bend Precision Lathes

Informes con Respecto a la Exportación de Tornos South Bend

**South Bend Lathes Have Been Exported** to all parts of the world for more than twenty-six years. In that time shipments have been made to 102 different countries or colonies. The reputation of South Bend Lathes is, therefore, world-wide and users everywhere can testify to their high quality.

**Your Order Carefully Handled.** Your order receives careful and prompt attention at our hands. You may entrust it to our care, secure in the knowledge that we will do our part to fulfill your every requirement.

**The Latest Export Information** is available to our friends overseas at all times. We maintain a special department in our offices having the latest information on steamship rates, shipping data, insurance premiums, consular charges, and other details that our customers may be interested in when purchasing a lathe. The services of this department are extended free of cost or obligation to our friends in other countries.

**C.I.F. Prices to Various Ports.** Write to us specifying the size and type of lathe in which you are interested and we will send you a detailed itemized C.I.F. quotation to your nearest port.

**Correspondence in Any Language.** You may write us in any language you wish and we will respond in your own language, the English language, or in any other you specify. We have competent translators in our Export Department for correspondence in various languages.

**Metric Lathes** with full metric equipment including metric lead screw, metric graduations on the cross feed screw, compound rest screw, taper attachment and tailstock spindle can be supplied to order, in all sizes of South Bend Lathes at no extra cost. See pages 95, 96, and 97.

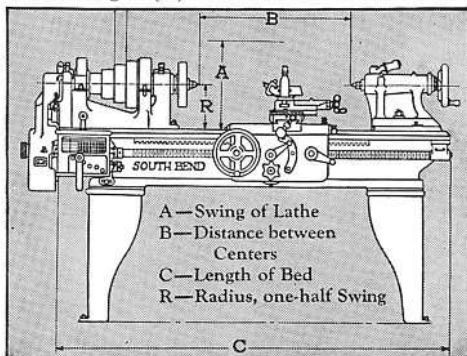
**Boxing for Export Shipment.** When boxing South Bend Lathes for export shipment, the lathe is dismantled and all parts removed are oiled, greased, wrapped and packed in one strong case as illustrated above. All parts are blocked and fastened solidly inside the case to prevent moving while in transit. The box is lined inside with waterproof paper, and bound with steel tape outside.

**Mule Back Packing.** When desired, we can pack South Bend Lathes for shipment in small boxes suitable for mule back transportation. Prices and information on request.

## The Size of a Lathe

The size of a Screw Cutting Lathe is determined by the Swing over the Bed and Length of the bed as indicated by the illustration below.

European tool manufacturers determine the size of a lathe by its radius or center height (R) and distance between centers (B): for example, an 8" center lathe is a lathe having a radius of 8 inches. What the European terms an 8" center height Lathe, United States manufacturers term a 16-in. swing lathe.



**Los Tornos South Bend** han sido exportados a todos los rincones del mundo durante los últimos veinte y cinco años. Durante este tiempo, se han hecho despachos a ciento y dos países. La reputación de los Tornos South Bend es, por lo tanto, mundial, y todos los que usan nuestros tornos pueden testificar su alta calidad y su adaptabilidad a todo trabajo fino y de gran exactitud.

**Tenemos a su disposición** los informes mas recientes sobre la exportación de nuestros productos a cualquier país. Tenemos un departamento dedicado a obtener los últimos informes sobre las tarifas de las compañías de vapores, los derechos consulares, las primas de seguro y otros detalles en los cuales nuestros clientes estan interesados al comprar tornos. Los servicios de este departamento son enteramente gratis.

**Su Pedido Recibirá Manejo Cuidadoso.** Su pedido tendrá nuestra más esmerada atención, pudiendo Ud. confiar en nuestro criterio, porque haremos lo posible para asegurarle satisfacción absoluta.

**Cotizaciones con Precios Costo, Seguro y Flete** hasta cualquier puerto serán suministradas a solicitud. Sírvase escribirnos indicando el tamaño y tipo de torno en el cual Ud. está interesado que nosotros le enviaremos una cotización-costo, seguro y flete hasta su puerto más cercano.

**Correspondemos en cualquier idioma.** Puede Ud. escribirnos en cualquier idioma que nosotros le contes, taremos en su lengua propia, en inglés, o en cualquier otro idioma que Ud. nos indique. Tenemos traductores de español, francés, y portugués en nuestro departamento de exportación. Podemos corresponder en los otros idiomas pues tenemos relaciones con traductores adiestrados.

**Tornos Métricos** con todo el equipo métrico incluyendo un tornillo guiador métrico, graduaciones métricas en los tornillos del avance transversal y del soporte compound, en el aditamento para torneado cónico, y en el husillo de la contrapunta pueden suministrarse a solicitud en todos los tamaños de los Tornos South Bend sin cargo extra. Véase las páginas 95, 96, y 97.

**El Empaque para Transporte Marítimo.** Al encajonar los Tornos South Bend para transporte marítimo, se desarmen y todas sus partes se aceitan, engrasan, envuelven y empaican en una caja fuerte como se puede ver en la ilustración de arriba. Todas las partes se fijan sólidamente en la caja para evitar su movimiento durante el tiempo que las máquinas están en camino. Las cajas tienen forros de papel impermeable, y están reforzadas por cintas de acero. Las cajas están marcadas de acuerdo con las indicaciones de nuestros clientes sin costo adicional de su parte. La maquinaria destinada a la República Méjicana se empaca del mismo modo que si fuera enviada dentro del país, o sea, en cajas hechas de tablillas de madera.

## Encajonamiento para Transporte a Lomo de Mula

A solicitud, podemos empacar Tornos South Bend en cajas pequeñas para permitir su transporte a lomo de mula. Se suministran precios y detalles a petición.

# Steel Bench for 10-inch. Underneath Motor Driven Bench Lathes

## Has Built-in Chip Pan

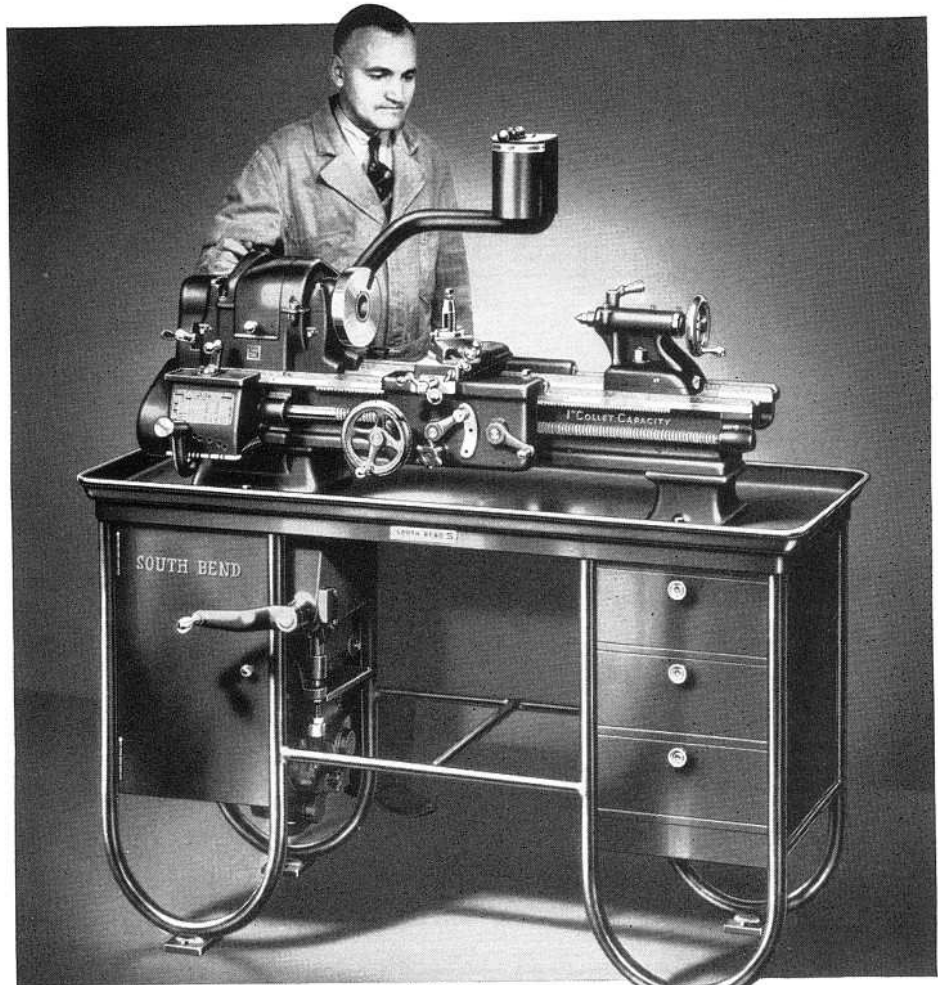
The tubular steel bench illustrated at right provides a rigid support for the lathe, as it is well braced and all joints are securely welded. The top of the bench has a roll rim all the way around and serves as a chip pan or oil pan. Drawers are provided in the right end of the bench for tool storage.

Space in left end of bench is provided for the underneath motor drive mechanism. When this bench is ordered with a South Bend Lathe, the entire unit is shipped fully assembled, as shown, and the lathe is ready to operate when connected to electric current.

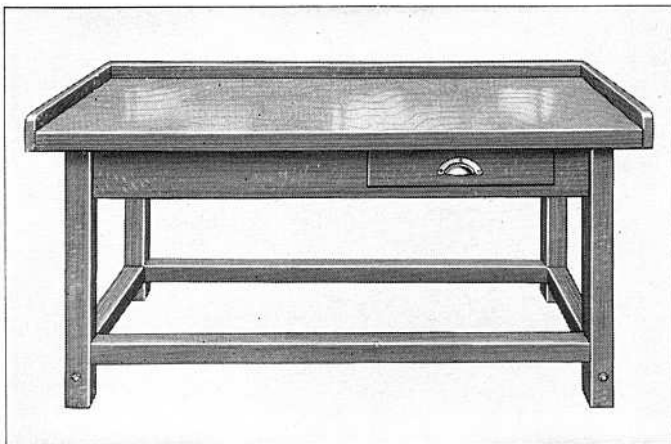
This bench is designed for use with the 10-inch 1" Collet Bench Lathe or 10-inch  $\frac{1}{16}$ " Collet Bench Lathe with Underneath Motor Drive. Price includes fitting lathe to bench when bench is ordered with the lathe.

### Steel Bench for 10-inch Lathes

Cat. No.	For Bed Length	Size Bench Top	Ship. Wt. Bench Only	Code Word
1795	3' or 3½'	51½" x 22"	265 lbs.	Pavom
1796	4' or 4½'	64½" x 22"	295 lbs.	Paveq



(Patents Applied For)  
Tubular Steel Bench for 10" Underneath Motor Driven Bench Lathes



Open Type Frame Bench



Cabinet Type Bench

## Blue Print Plans for Wood Bench

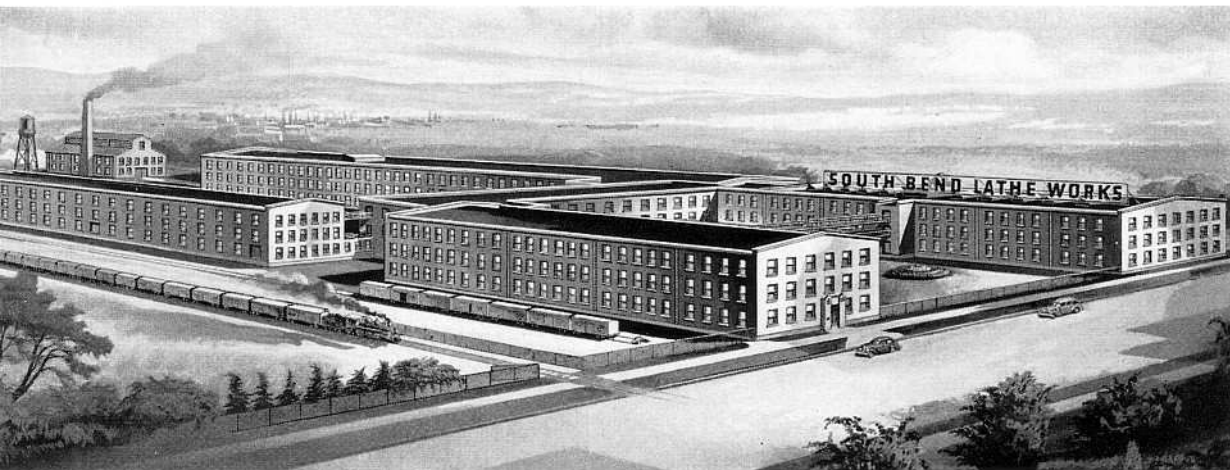
Free with South Bend Bench Lathes on Request

Blue print plans showing how to build either a cabinet type bench or an open type frame bench for the lathe will be supplied on request, postpaid, no charge, to any purchaser of a South Bend Lathe.

SOUTH BEND, INDIANA, U.S.A.

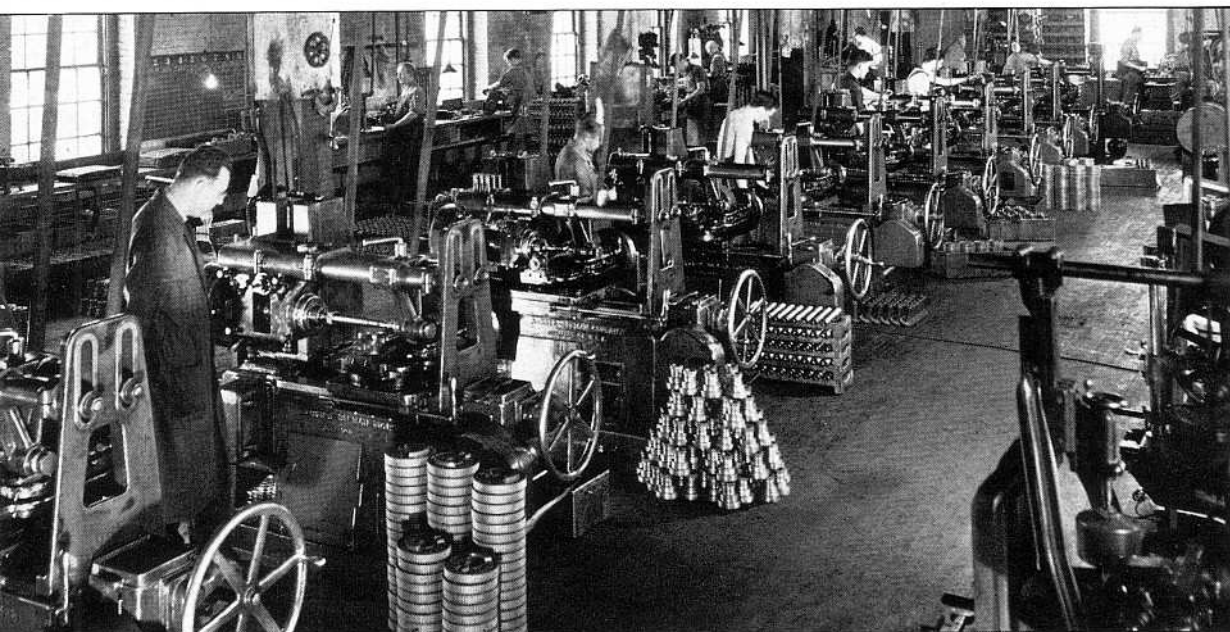
Bench may be constructed of maple, hard pine or any other suitable, well seasoned wood. Specify size and type of lathe and whether you wish to build a cabinet bench or open frame bench.





## FACTORY

The factory of the South Bend Lathe Works was established in 1906 and for 34 years has been devoted to manufacturing lathes exclusively.



## GEAR CUTTING

The latest type of precision hobbing and gear testing machines are used in the production of all gears for South Bend Lathes.

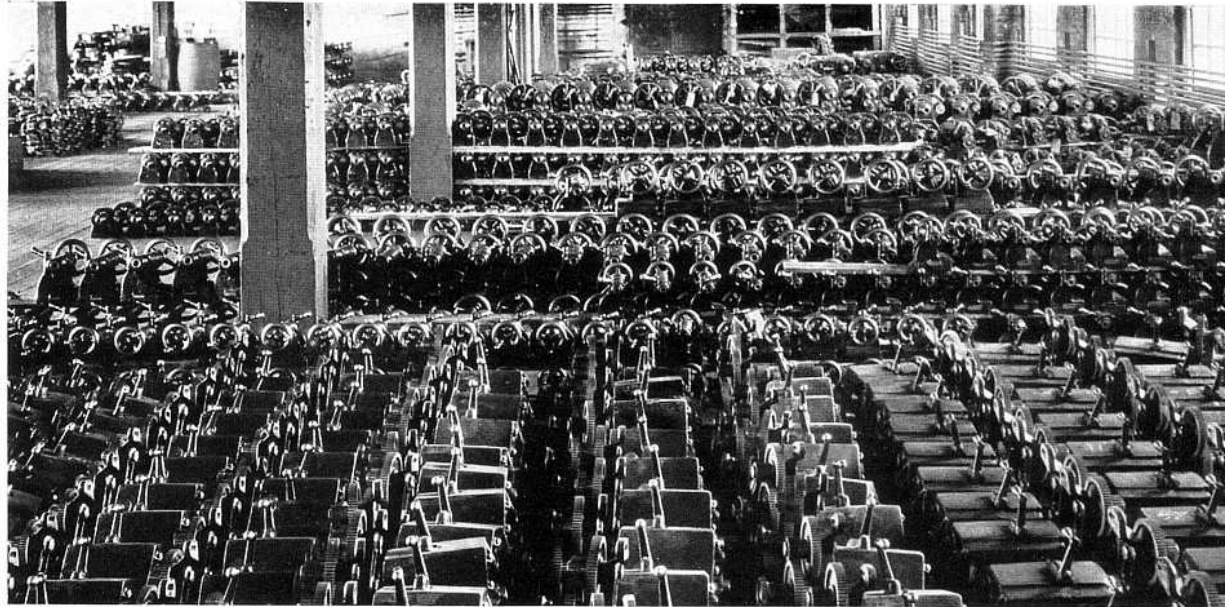


## ASSEMBLY

This is the final assembly floor for Underneath Belt Motor Driven Lathes. South Bend Lathes are assembled in large lots.

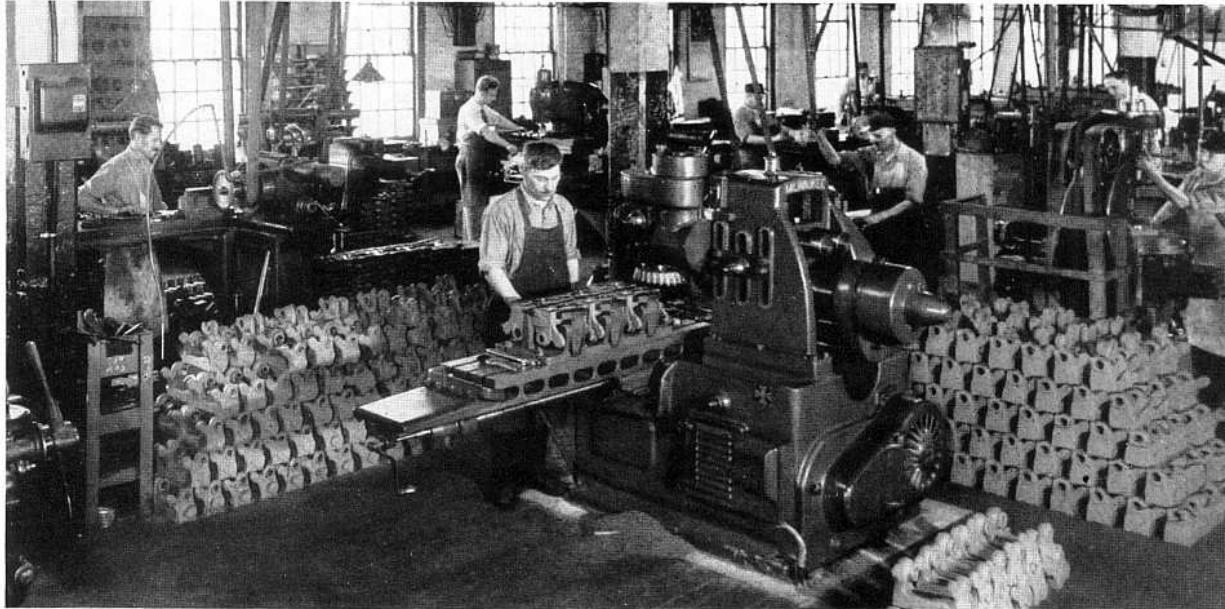
## STOCK

Units for each size lathe are manufactured in lots of 300 to 1000 and are carried in stock ready for assembling any size or type of lathe.



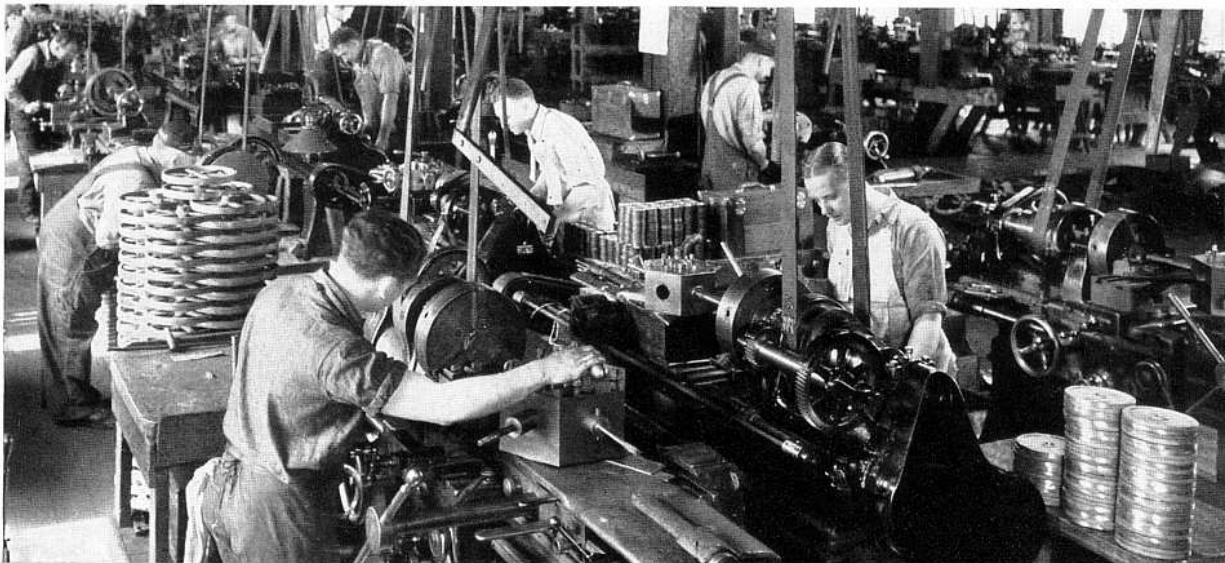
## PRODUCTION

Parts for South Bend Lathes are economically manufactured in our modern factory equipped with the most efficient production machinery.



## LATHES

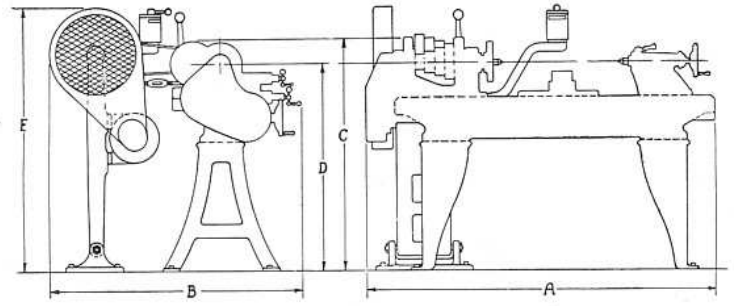
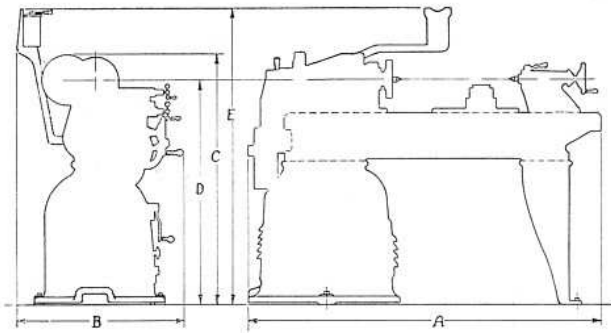
In this room there are more than 50 South Bend Lathes in operation machining parts for South Bend Lathes.





# Floor Space Required for All Size South Bend Lathes

Dimensions A to G given in tables below are in inches

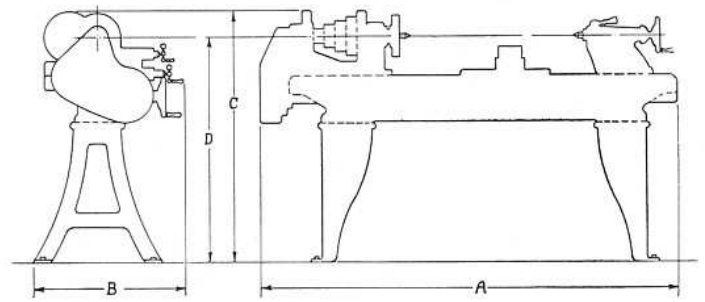
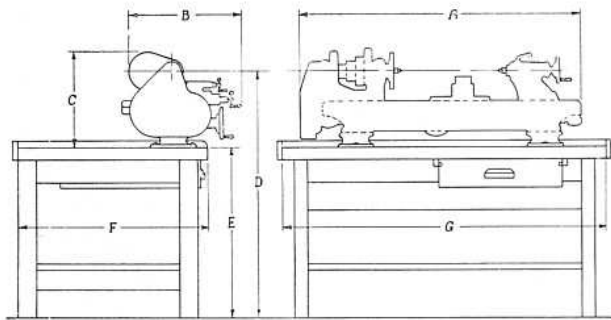


Underneath Motor Driven Lathes

Size Lathe	Bed Length	A	B	C	D	E
10"	3'	42 $\frac{3}{8}$	23 $\frac{1}{2}$	44 $\frac{11}{16}$	41 $\frac{13}{32}$	53 $\frac{1}{8}$
13"	5'	66 $\frac{5}{8}$	27 $\frac{7}{8}$	45 $\frac{1}{2}$	41 $\frac{1}{2}$	53 $\frac{3}{16}$
14 $\frac{1}{2}$ "	6'	80 $\frac{1}{2}$	29 $\frac{3}{8}$	46 $\frac{1}{8}$	41 $\frac{9}{16}$	53 $\frac{3}{4}$
16"	8'	105	29 $\frac{5}{8}$	46 $\frac{3}{4}$	42 $\frac{1}{2}$	55
16"-24"	8'	105	29 $\frac{5}{8}$	51 $\frac{1}{8}$	46 $\frac{3}{4}$	55

Pedestal Motor Driven Lathes

Size Lathe	Bed Length	A	B	C	D	E
9"-W	3'	39 $\frac{3}{8}$	37	44 $\frac{5}{16}$	41 $\frac{17}{32}$	49
10"	3'	42 $\frac{3}{8}$	40 $\frac{1}{4}$	44 $\frac{3}{8}$	41 $\frac{13}{32}$	49
13"	5'	66 $\frac{5}{8}$	42 $\frac{7}{8}$	45 $\frac{1}{2}$	41 $\frac{1}{2}$	49 $\frac{3}{8}$
14 $\frac{1}{2}$ "	6'	80 $\frac{1}{2}$	49	46 $\frac{1}{8}$	41 $\frac{9}{16}$	50 $\frac{3}{8}$
16"	8'	105	51 $\frac{7}{8}$	46 $\frac{13}{16}$	42 $\frac{1}{2}$	53
16"-24"	8'	105	51 $\frac{7}{8}$	47 $\frac{11}{16}$	42 $\frac{29}{32}$	53

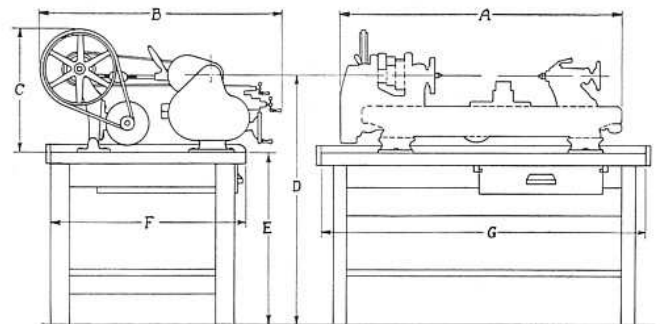
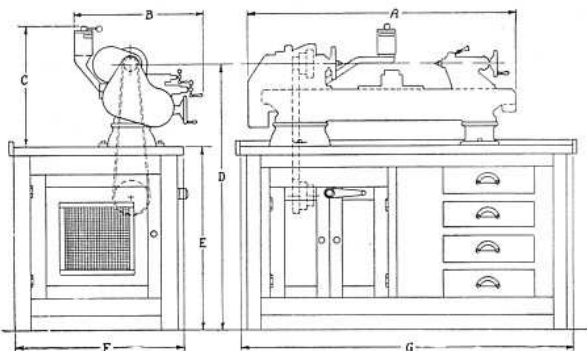


Countershaft Driven Bench Lathes

Size Lathe	Bed Length	A	B	C	D	E	F	G
9"-W	3'	39 $\frac{3}{8}$	16 $\frac{1}{4}$	15	42 $\frac{13}{32}$	30 $\frac{1}{2}$	28	54
10"	3'	42 $\frac{3}{8}$	18	17	41 $\frac{11}{16}$	27 $\frac{7}{8}$	32	54

Countershaft Driven Lathes

Size Lathe	Bed Length	A	B	C	D
9"-W	3'	39 $\frac{3}{8}$	19	44 $\frac{5}{16}$	41 $\frac{17}{32}$
10"	3'	42 $\frac{3}{8}$	21 $\frac{1}{4}$	44 $\frac{3}{8}$	41 $\frac{13}{32}$
13"	5'	66 $\frac{5}{8}$	25 $\frac{1}{8}$	45 $\frac{1}{2}$	41 $\frac{1}{2}$
14 $\frac{1}{2}$ "	6'	80 $\frac{1}{2}$	28 $\frac{1}{4}$	46 $\frac{1}{8}$	41 $\frac{9}{16}$
16"	8'	105	27 $\frac{1}{4}$	46 $\frac{25}{32}$	42 $\frac{1}{2}$
16"-24"	8'	105	27 $\frac{1}{4}$	47 $\frac{11}{16}$	42 $\frac{29}{32}$



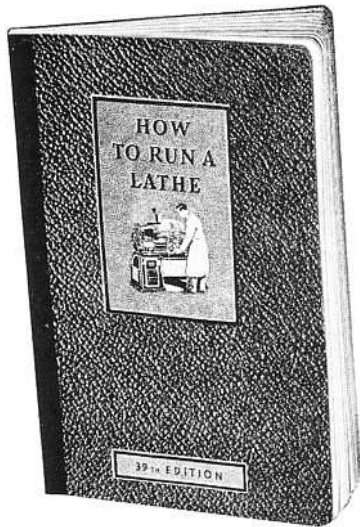
Underneath Motor Driven Bench Lathes

Size Lathe	Bed Length	A	B	C	D	E	F	G
9"-W	3'	39 $\frac{3}{8}$	16 $\frac{1}{4}$	15	42 $\frac{13}{32}$	30 $\frac{1}{2}$	28	54
10"	3'	42 $\frac{3}{8}$	24	25 $\frac{1}{2}$	41 $\frac{11}{16}$	27 $\frac{7}{8}$	32	60

Horizontal Motor Driven Bench Lathes

Size Lathe	Bed Length	A	B	C	D	E	F	G
9"-W	3'	39 $\frac{3}{8}$	31 $\frac{7}{8}$	18 $\frac{3}{8}$	42 $\frac{13}{32}$	30 $\frac{1}{2}$	28	54
10"	3'	42 $\frac{3}{8}$	35 $\frac{11}{16}$	18 $\frac{7}{8}$	41 $\frac{11}{16}$	27 $\frac{7}{8}$	32	54

## "How to Run a Lathe"—39th Edition



The English Edition of "How to Run a Lathe" is shown above. Other editions of this book translated into Spanish, Portuguese, and French, are illustrated below.

Revised Edition No. 39 of the book "How to Run a Lathe" contains 128 pages, size 5 $\frac{1}{8}$ " x 8", and more than 360 illustrations. All kinds of lathe operations are clearly explained and illustrated.

Detailed information is given on the care and operation of a back-gearred screw cutting lathe, grinding lathe tool cutter bits, taking accurate measurements, thread cutting, and other special classes of lathe work. Valuable reference tables, rules and kinks are also included in this book.

Many large industries use "How to Run a Lathe" for apprentice training. Schools and colleges all over the world accept it as a standard text and reference book on machine shop practice. Over 1,600,000 copies have been printed.

A copy of "How to Run a Lathe," English Edition No. 39, with paper binding, will be mailed anywhere in the world, postpaid, for 25c. Leatherette binding 75c. Stamps or money order of any country accepted.

"How to Run a Lathe" is also printed in the Spanish, Portuguese, and French languages, as described below.

### Manual del Tornero Edición en Español No. 36

La Edición No. 36 del libro "Manual del Tornero" (impreso en español) contiene 128 páginas del tamaño de 13 x 20 cm, y más de 360 ilustraciones. Se da la información completa sobre el cuidado y manejo de un torno con engranajes reductores para cortar roscas, el afilado de las cuchillas para las herramientas del torno, el tomado de las medidas exactas, el fileteado, y otras clases especiales de trabajo en el torno. Las tablas útiles de referencia las advertencias y las sugerencias se comprenden también en este libro. Más de 1,600,000 ejemplares se han impreso en varias lenguas.

Un ejemplar del "Manual del Tornero", Edición No. 36 escrito en español y encuadernado en papel, se enviará a todas partes del mundo con el porte pagado al equivalente de veinticinco centavos en moneda de los E.U.A. Aceptaremos sellos o giro postal de cualquier país.

### Manual do Torneiro Edição No. 38 em Português

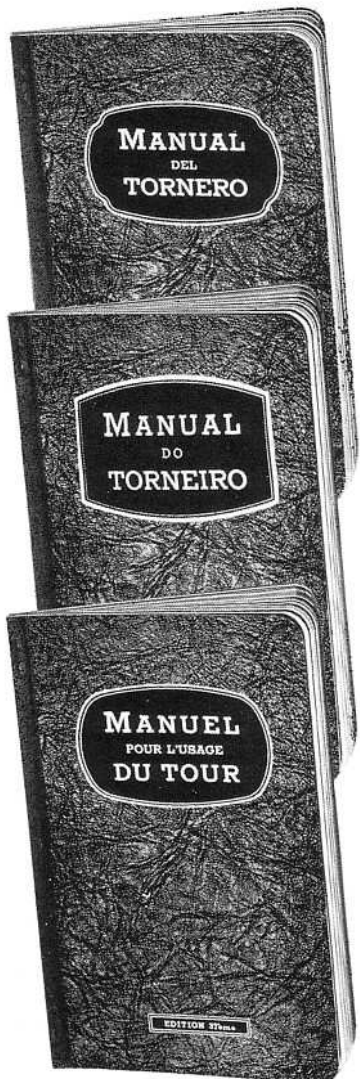
A edição No. 38 do livro "Manual do Torneiro" (impreso em português) contém 128 páginas, do tamanho 5 $\frac{1}{8}$ " x 8", e mais de 360 gravuras. Oferece as informações detalhadas sobre o cuidado e a operação de um torno para abrir roscas de parafuso, com engrenagens reductoras, e sobre a amolação das brocas cortantes de ferramentas de tornos, a maneira de tomar as medidas exactas, abrir roscas de parafuso e outras classes especiais do torneamento. Neste livro incluem-se também as valiosas tabelas de referência, regras e soluções práticas. Mais de 1,600,000 de exemplares têm-se impressos em varias linguas.

Um exemplar do "Manual do Torneiro", edição No. 38 em português, encadernado em papel, enviar-se-á portes pagos a qualquer parte do mundo pela equivalência de 25c em moeda americana. Aceita-se a selos ou vale postal de qualquer país.

### Manuel pour l'Usage du Tour Edition française No. 37

L'édition No. 37 du livre "Manuel pour l'Usage du Tour" (imprimée en français) consiste de 128 pages, 13 cm. x 20 cm. de dimension, et plus de 360 gravures. Des renseignements détaillés sont donnés concernant l'entretien et le fonctionnement du tour parallèle de précision, l'affûtage des lames, la manière de prendre des mesures précises, le filetage, et les travaux spéciaux. Des tableaux de référence très utiles, des instructions de service y sont également compris. Plus de 1.600.000 exemplaires de ce livre ont été imprimés ans les différentes langues.

Un exemplaire du "Manuel pour l'Usage du Tour", édition française No. 37, broché, sera expédié partout le monde, port payé, pour l'équivalent de 25c en monnaie américaine. Des timbres-poste ou mandats poste de tous pays seront acceptés.





## A Partial List of U. S. A. Industries Using South Bend Lathes

A few well-known users of South Bend Lathes are listed below. The names and addresses of several users in your locality will be furnished on request.

### Aircraft Industries

Allison Engineering Division  
Barnard Aviation Equipment Co.  
Bell Aircraft Corporation  
Bendix Aviation Corporation  
Boeing Aircraft Corporation  
Consolidated Aircraft Corp.  
Curtiss-Wright Corporation  
Douglas Aircraft Corporation  
Eaton Manufacturing Co.  
Fleetwings, Incorporated  
Holley Carburetor Company  
Link Aviation Corporation  
Martin Company, The Glenn L.  
Parker Appliances, Inc.  
Pratt & Whitney Aircraft Co.  
Ryan Aeronautical Company  
Sikorsky Aircraft Corporation  
Thompson Products Company  
Vega Airplane Company  
Vultee Aircraft Company  
Warner Aircraft Company  
Wilcox-Rich Mfg. Company  
Woodward-Governor Company  
Wright Aeronautical Company

### Instrument Manufacturers

Bausch & Lomb Optical Co.  
Bell Telephone Laboratories  
Dietzgen Company, Eugene  
Eastman Kodak Company  
Foxboro Instrument Company  
General Electric Company  
Leeds & Northrup Company  
Minneapolis-Honeywell Regulator Co.  
Sperry Gyroscope Company, Inc.  
Taylor Instrument Company  
Westinghouse Elec. & Mfg. Co.  
Wollensak Optical Company

### Machine Tool Manufacturers

Barber-Colman Company  
Brown & Sharpe Mfg. Company  
Bullard Company  
Gardner Machine Company  
Landis Tool Company  
Leland-Gifford Company  
Norton Company  
Van Norman Machine Tool Company  
Warner & Swasey Company

### Automotive Industries

Briggs Manufacturing Company  
Cadillac Motor Car Company  
Chrysler Corporation  
Fisher Body Corporation  
Ford Motor Company  
General Motors Corporation  
Hudson Motor Company  
International Harvester Company  
McQuay-Norris Company  
Packard Motor Company  
Perfect Circle Co.  
Sealed Power Corporation  
Studebaker Corp. of America

### U. S. Government Depts.

U.S. Army Ordnance Department  
U.S. Bureau of Marine Fisheries  
U.S. Bureau of Mines  
U.S. Bureau of Standards  
U.S. Coast & Geodetic Survey  
U.S. Coast Guard  
U.S. Dept. of Agriculture  
U.S. Dept. of Interior  
U.S. Dept. of Justice  
U.S. Dept. of State  
U.S. Forest Service  
U.S. Geological Survey  
U.S. Naval Air Stations  
U.S. Naval Observatory  
U.S. Naval Torpedo Station  
U.S. Navy Yards  
U.S. Post Office Department  
U.S. Signal Corps  
U.S. War Department

### Educational Institutions

California Institute of Technology  
Columbia, University of  
Harvard, University of  
Mass. Institute of Technology  
Minnesota, University of  
Northwestern, University of  
Notre Dame, University of  
Pennsylvania, University of  
Princeton, University of  
Purdue, University of  
Stanford, University of  
Yale, University of