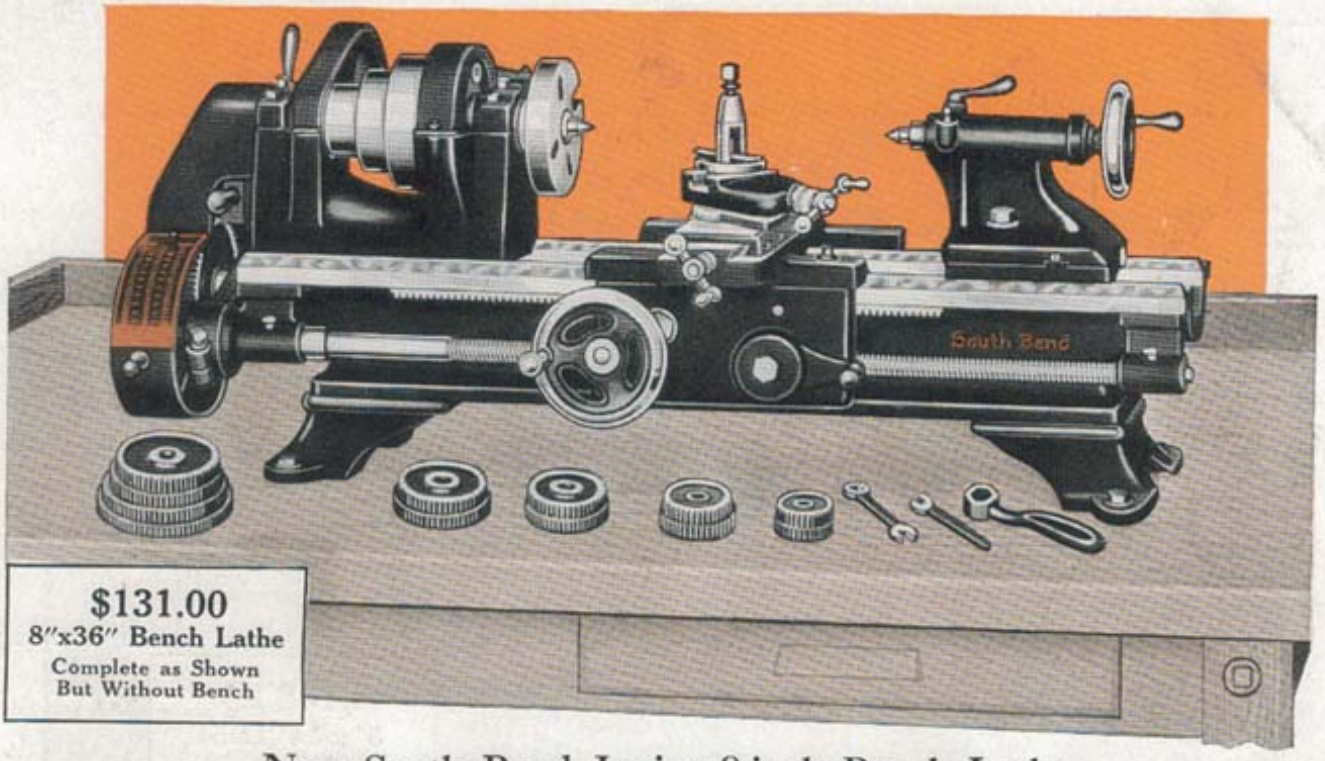


$131.00
8"x36" Bench Lathe
Complete as Shown But Without Bench

New South Bend Junior 8-inch Bench Lathe

Back-Geared, Screw Cutting Precision Lathe—Countershaft Drive

For Use In

Manufacturing Plants	Auto Repair Shops	Electrical Shops	Schools
Tool Rooms	Auto Service Stations	Laboratories	Home Shops
Machine Shops	Auto Electric Shops	Model Makers Shops	Farm Repair Shops
Maintenance Shops	Fleet Service Shops	Gunsmith Shops	Apprentice Shops

Product of 25 Years' Experience. The 8-inch Junior Lathe illustrated above and shown throughout this booklet in countershaft drive, horizontal motor drive, simplex motor drive and silent motor drive, is a precision back-geared, screw cutting lathe. It represents the latest development of this company which has specialized for twenty-five years in building back-geared, screw cutting lathes, exclusively. All the experience gained in building over 55,000 lathes has gone into building this high quality precision lathe.

Latest Improvements. The 8-inch Junior Bench Lathe is new. It has new features and mechanical improvements which make it the most modern small lathe on the market in 1932. It is practical in large industries which manufacture small articles in great quantities, such as hardware, typewriters, sewing machines, firearms, radios, etc.

Chart for Threads and Feeds

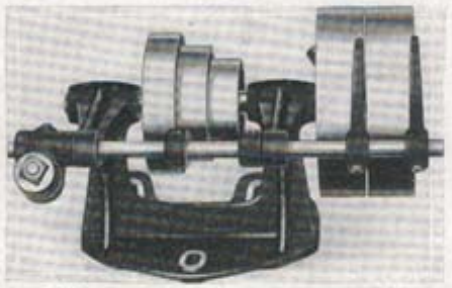
A South Bend Lathe. This new lathe carries the South Bend name and is a South Bend Lathe throughout in its high quality, precision and versatility. We are proud to rank this lathe as one of our finest machines and to apply to it the South Bend Guarantee which insures perfect satisfaction or your money back. See Guarantee on page 12.

FEATURES OF JUNIOR 8-INCH LATHES—See Page 8

Back-geared headstock, six spindle speeds.
Hollow steel spindle, ¾" hole.
Reverse for feeds and threads.
Plain rest or graduated compound rest.
Tailstock set-over for taper turning.
Carriage lock for accurate facing.
Micrometer collar on cross feed screw.
Micrometer collar on compound rest screw.
Precision lead screw for cutting threads.
Change gears for threads and feeds.
Index plate for thread cutting.
Automatic longitudinal screw feed.
Wrenchless bull gear lock.
Half-nuts for thread cutting.
Forged steel adjustable tool post.
Tailstock spindle lock.
Semi-steel seasoned bed.
"V" ways and flat ways hand scraped.

Features and Specifications of the lathe are listed below, and on page 2, and are described in detail and at length on pages 6, 7 and 8 of this book. These features and specifications apply to every lathe illustrated in this book as the 8-inch Bench Lathe has one basic design and the motor drives and floor leg models are adaptations to suit varying shop and power conditions. The lathe you get is precisely the same regardless of the type of drive or the type of mounting you select.

Regular Lathe Equipment included in price consists of choice of tight and loose pulley countershaft, as illustrated below or horizontal drive unit shown on page 7; plain rest (or compound rest at extra cost); face plate; tool post, ring and wedge; two 60° lathe centers and spindle sleeve; change gears for screw thread cutting and power carriage feed; wrenches; lag screws and washers; installation plan and instruction book, "How to Run a Lathe." Bench is extra, for prices and illustration, see page 11.

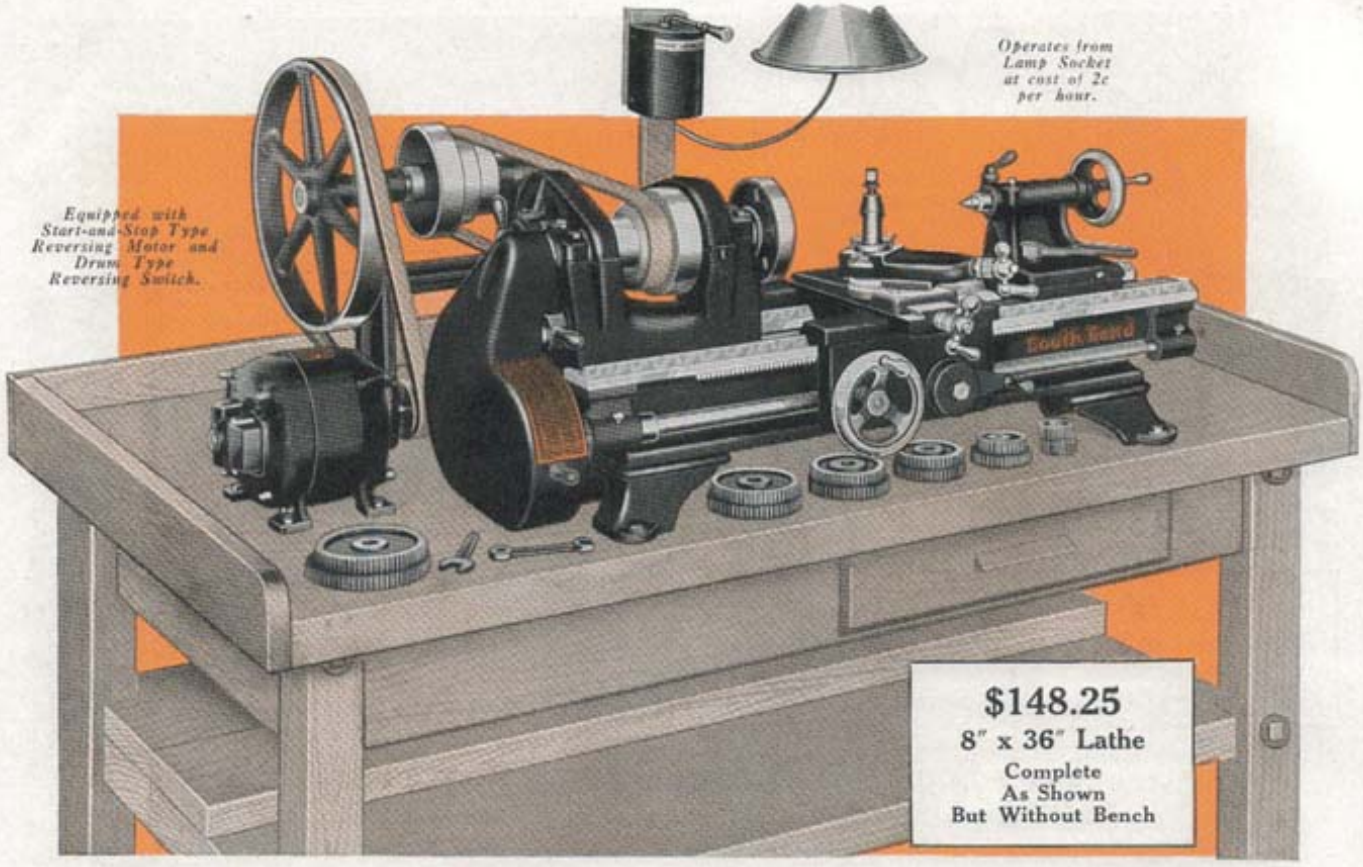


Tight and Loose Pulley Countershaft

Prices of New Junior 8-inch Bench Lathes with Tight and Loose Pulley Countershaft and Regular Equipment

Swing Over Bed	Length of Bed	Distance Between Centers	Hole Thru Spindle	Swing Over Carriage	Countershaft Speed	Power Required	Approx. Weight Crated	With Plain Rest			With Compound Rest		
								Cat. No.	Code Word	Net Factory Price	Cat. No.	Code Word	Net Factory Price
8½ in.	24 in.	6½ in.	⅝ in.	5½ in.	290 R.P.M.	½ H.P.	225 lbs.	8-TPB	Pukeg	$100.00	8-TB	Conec	$115.00
8½ in.	30 in.	12½ in.	⅝ in.	5½ in.	290 R.P.M.	½ H.P.	240 lbs.	8-XPB	Pulag	108.00	8-XB	Conug	123.00
8½ in.	36 in.	18½ in.	⅝ in.	5½ in.	290 R.P.M.	½ H.P.	255 lbs.	8-YPB	Pulmy	116.00	8-YB	Copuh	131.00
8½ in.	42 in.	24½ in.	⅝ in.	5½ in.	290 R.P.M.	½ H.P.	270 lbs.	8-ZPB	Pumol	125.00	8-ZB	Cosmy	140.00
8½ in.	48 in.	30½ in.	⅝ in.	5½ in.	290 R.P.M.	½ H.P.	290 lbs.	8-APB	Punek	140.00	8-AB	Cotah	155.00

If Double Friction Countershaft is wanted instead of Tight and Loose Pulley Countershaft, add $5.00 to above prices.
If neither Tight and Loose Pulley Countershaft nor Horizontal Drive Unit, as furnished with lathe, is wanted, deduct $5.00.



Junior 8-inch Horizontal Motor Driven Bench Lathe

A Back-Geared, Screw Cutting Precision Lathe

The Horizontal Motor Driven Lathe. The illustration above shows the 8-inch Junior South Bend Bench Lathe mounted on a bench and operated by an electric motor drive from an ordinary lamp socket. The motor shown is an A.C., 110-volt, split phase, start and stop reversing type, and is controlled by a drum reversing switch. See page 9.

Features and Specifications. The lathe illustrated is precisely the same as the lathe described on pages 1, 6, 7 and 8, having the same specifications and features as given below. The only difference is that the lathe has individual motor drive instead of countershaft drive.

The Horizontal Motor Drive is recommended for the shop wishing a compact unit where power, speed, accuracy and economy of operation are wanted. The lathe is widely used in manufacturing plants, machine shops, laboratories, auto service shops and electrical shops.

Motor Drive Equipment. We recommend that motor, switch and drive equipment, as shown below, be ordered with the lathe, because motors and switches we supply are tested for efficiency before they leave the factory. However, if you have a motor of your own and prefer to use it, we can supply the lathe without motor and can furnish the motor pulley if you will specify the diameter of shaft, speed of motor and type of belt to be used. See page 9.

Regular Lathe Equipment included in price consists of: Horizontal drive unit; face plate; tool post, ring and wedge; two 60° lathe centers and spindle sleeve; change gears for thread cutting and power carriage feed; wrenches; lag screws; installation plan and book, "How to Run a Lathe."

Graduated Compound or Plain Rest. The prices below include the compound rest which is illustrated on the lathe. Plain rest may be substituted for compound rest if desired and $15.00 deducted from these prices. For plain rest and compound rest see page 8.

Motors and Switches listed for this lathe are suitable only for 1-phase, 60-cycle, 110-volt A.C. If direct current motor is wanted instead of split phase motor, add $13.00 to prices quoted. Information and prices on electrical equipment for other electric current furnished on request.

SPECIFICATIONS OF JUNIOR 8-INCH LATHES

Swing over bed	8½ in.
Swing over carriage	5½ in.
Hole through spindle	¾ in.
Thread cutting range	4 to 40 per in.
Spindle speeds	43, 73, 130, 222, 380, 675 R.P.M.
Countershafts (all types) speed	290 R.P.M.
Countershaft (Horizontal) pulley	11/16 in. x 1⅝ in.
Countershafts (Overhead) pulleys	6⅝ in. x 1⅝ in.
Width of cone pulley belt	1 in.
Size of spindle nose	1⅝ in. diam., 10 threads
Head and tail spindle centers	No. 1 Morse Taper
Collet capacity	1/64 in. to ½ in.
Lead screw, Acme thread	⅜ in. diam., 8 threads
Angular travel of compound rest top	1⅝ in.
Travel of tailstock spindle	1¾ in.
Size of lathe tool shank	½ in. x ¾ in.
Size of turning tool cutter bits	⅝ in. x ⅝ in.
Tailstock set-over	⅛ in.
Back gear ratio	5.2 to 1

Chart for Threads and Feeds.

Prices of New South Bend Junior 8-inch Horizontal Motor Driven Bench Lathe

DESCRIPTION OF LATHE	8" x 24" 408-TF Pocit	8" x 30" 408-XF Pocov	8" x 36" 408-YF Pofuz	8" x 42" 408-ZF Pogix	8" x 48" 408-AF Pogoz
8-inch Junior South Bend Back-Geared, Screw Cutting, Precision Bench Lathe with Graduated Compound Rest, Horizontal Drive Unit and Lathe Equipment	$115.00	$123.00	$131.00	$140.00	$155.00
Price of Motor Drive Equipment					
¼ H.P. Start-and-Stop Type Split Phase Reversing Motor, 1725 R.P.M. (single phase, 60-cycle, A.C. 110 volt)	10.00	10.00	10.00	10.00	10.00
"V"-Groove Pulley for Motor	.50	.50	.50	.50	.50
Reversing Switch (Drum Type)	5.00	5.00	5.00	5.00	5.00
"V"-Belt, Motor to Drive Unit	.75	.75	.75	.75	.75
Flat Leather Belt, Drive Unit to Lathe Spindle (1" x 49")	1.00	1.00	1.00	1.00	1.00
Total Price, Motor Driven Lathe and Equipment, Complete	$132.25	$140.25	$148.25	$157.25	$172.25

If Knife Switch is wanted instead of Reversing Switch, deduct $3.50 from above prices.
If Horizontal Drive Unit is not wanted with lathe, deduct $5.00 from above lathe prices.

Junior 8-inch Simplex Motor Driven Lathe

With Start-and-Stop Reversing Motor and Reversing Switch.

Back-Geared, Screw Cutting Lathe—Floor Leg Type

The Simplex Motor Driven Lathe. The illustration at left shows the 8-inch Junior South Bend Lathe with floor legs and Simplex Motor Drive Unit which may be mounted on the wall or on a post behind the lathe. The motor rests on a bracket below the drive unit. Drive is by "V"-belt from motor to drive unit and by flat leather belt from driving pulley to spindle cone. The motor is a ¼ H.P., split-phase start-and-stop reversing type (single-phase, 60-cycle, 110-volt A.C.) as described on page 9. A drum reversing switch controls the motor.

Prices of Lathe, Motor, Switch, Belting, etc., are itemized in the tabulation below so that you may order them separately if you wish.

Regular Lathe Equipment included in price consists of: Simplex motor drive unit; compound tool rest; face plate; tool post, ring and wedge; two 60° lathe centers and spindle sleeve; change gears for threads and feeds; wrenches; lag screws; installation plan and book, "How to Run a Lathe."

Prices of Junior 8-inch Simplex Motor Driven Lathe—Floor Leg Type

8-inch Junior South Bend Floor Leg Lathe with Graduated Compound Tool Rest, Simplex Drive Unit and Regular Lathe Equipment	8"x24" 508-T Tocay	8"x30" 508-X Tocez	8"x36" 508-Y Tocib	8"x42" 508-Z Tococ	8"x48" 508-A Tocud
	$125.00	$133.00	$141.00	$150.00	$165.00
Price of Motor Drive Equipment					
¼ H.P. Start-and-Stop Type Reversing Split-phase Motor, 1725 R.P.M. (1-phase, 60-cycle, A.C. 110-volts)	10.00	10.00	10.00	10.00	10.00
"V"-Groove Pulley for Motor	.50	.50	.50	.50	.50
Reversing Switch (Drum Type)	5.00	5.00	5.00	5.00	5.00
"V"-Belt, Motor to Drive Unit	.75	.75	.75	.75	.75
Flat Leather Belt 1"x64"	1.25	1.25	1.25	1.25	1.25
Price, Lathe and Equipment, Complete	$142.50	$150.50	$158.50	$167.50	$182.50

If Knife Switch is wanted instead of Reversing Switch, deduct $3.50 from above prices.
If Bench Legs are wanted, deduct $10.00 from lathe prices.

Junior 8-inch Silent "V" Motor Driven Lathe

With Start-and-Stop Reversing Motor and Reversing Switch.

Back-Geared, Screw Cutting Lathe—Floor Leg Type

Silent "V" Motor Driven Lathe. The illustration at the right shows the 8-inch Junior Lathe with floor legs, arranged with Silent "V" motor drive. The motor and driving pulley are mounted on an adjustable table and supported above the lathe by a bracket fastened to the lathe bed back of the headstock. An adjustment between driving pulley and spindle cone pulley provides for any desired belt tension. Drive is by "V"-belt from motor to driving pulley and by flat leather belt from driving cone pulley to spindle cone pulley. For features and specifications see pages 1, 2 and 6 to 9.

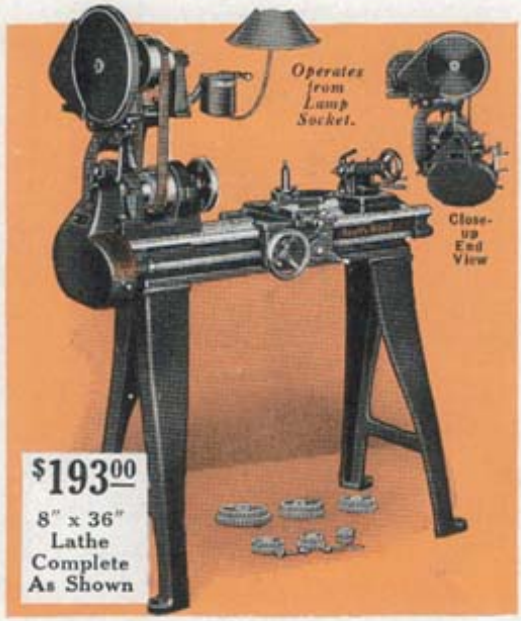
Regular Lathe Equipment Included in Price consists of: Silent motor drive unit; compound tool rest; face plate; tool post, ring and wedge; two 60° lathe centers and spindle sleeve; change gears for thread cutting and power carriage feeds; wrenches; lag screws; installation plan and book, "How to Run a Lathe."

Electrical Equipment Included in Price. A ¼ H.P. 1725 R.P.M. split-phase, start-and-stop type reversing motor (Single-phase, 60-cycle A.C. 110-volt), as described on page 9; drum reversing switch; wiring between motor and switch; wiring diagram and leather belt.

Prices of 8-inch Junior Silent "V" Motor Driven Lathe—Floor Leg Type

Swing Over Bed Inches	Length of Bed Inches	Distance Between Centers Inches	Hole Thru Spindle Inches	Swing Over Carriage Inches	Power Required H.P.	Approx. Weight Pounds	Cat. No.	Code Word	Single-Phase 60-Cycle A.C. Motor
8¼	24	6½	⅝	5½	¼	405	308-T	Piloz	$177.00
8¼	30	12½	⅝	5½	¼	420	308-X	Pilub	185.00
8¼	36	18½	⅝	5½	¼	435	308-Y	Pilva	193.00
8¼	42	24½	⅝	5½	¼	450	308-Z	Pilwe	202.00
8¼	48	30½	⅝	5½	¼	470	308-A	Pilto	217.00

If Bench Legs are wanted instead of Floor Legs, deduct $7.00 from the above prices.
If Knife Switch is wanted instead of Reversing Switch, deduct $3.50 from above prices.



Junior 8-inch Floor Leg Lathe

Back-Geared, Screw Cutting Precision Lathe—Overhead Double Friction Countershaft Drive

Floor Leg Lathe. The illustration at the left shows the 8-inch Junior Lathe with floor legs. This lathe is identical with the bench lathe illustrated on page 1, except that it has floor legs instead of bench legs, and Double Friction Countershaft instead of Tight and Loose Pulley Countershaft.

The Double Friction Countershaft is equipped with two friction clutch pulleys, one of which is operated by straight belt and the other by a crossed belt. This permits the carriage to be operated right or left by power feed.

Features and Specifications. The mechanical features and specifications are described in detail and at length on pages 1, 2 and 6 to 8. These features and specifications apply to every lathe illustrated in this book as the 8-inch Lathe has one basic design and the motor drives and floor leg models are adaptations to suit varying shop and power conditions.

Prices 8" Jr. Lathes with Floor Legs, Compound Tool Rest, Double Friction Countershaft, and Regular Equipment

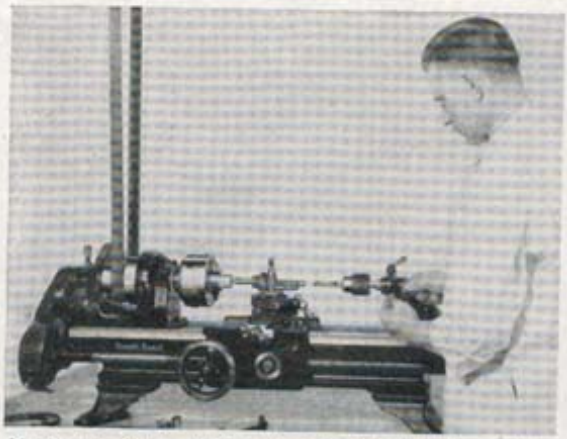
Swing Over Bed Inches	Length of Bed Inches	Distance Between Centers Inches	Hole Thru Spindle Inches	Swing Over Carriage Inches	Approx. Weight Pounds	Cat. No.	Code Word	Net Factory Price
8¼	24	6½	⅝	5½	330	8-TW	Covek	$130.00
8¼	30	12½	⅝	5½	345	8-XW	Covil	138.00
8¼	36	18½	⅝	5½	360	8-YW	Covko	146.00
8¼	42	24½	⅝	5½	375	8-ZW	Covmo	155.00
8¼	48	30½	⅝	5½	395	8-AW	Covpy	170.00

If Tight and Loose Pulley Countershaft is wanted instead of Double Friction Countershaft, deduct $5.00 from the above prices.

Chart for Threads and Feeds.

Examples of Work Done on the New 8-inch Junior South Bend Lathe

The illustrations below show a few of the thousands of operations that can be done on the 8-inch Junior Lathe. The practical mechanic prefers this lathe because he can handle jobs of all kinds in cast iron, steel, alloy steels such as nickel steel, forgings, wrought iron, brass, copper, aluminum, babbitt, soft woods, fibre, hard rubber, hard woods, ivory, celluloid, pyralin, etc. The usefulness of the lathe is limited only to the ability of the operator.

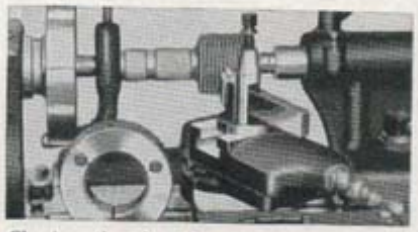


Making a brass bushing in the 8-inch lathe. After drilling with a twist drill held in the drill chuck the job is accurately finished with the boring tool.

Drilling a steel plate held against the drill pad in the tailstock.

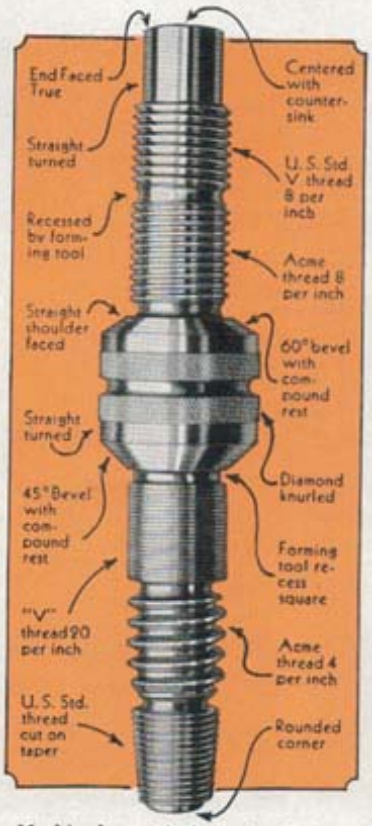
Centering a gear blank preliminary to drilling and boring.

Knurling in the lathe.

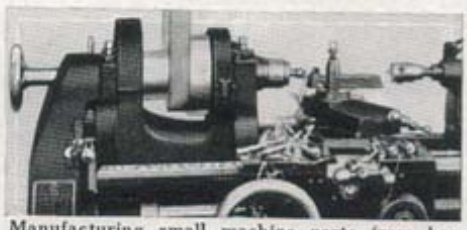


Chasing the threads on a master thread gauge in the 8-inch lathe.

Drilling an oil hole in a bushing, held on a crotch center and fed to drill by tailstock wheel.



Machined on 8-inch Junior Lathe.



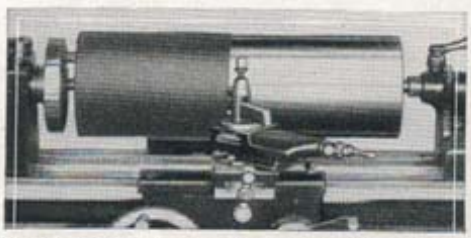
Manufacturing small machine parts from bar steel held in the draw-in chuck and collet.

Chasing an internal U.S.S. thread.

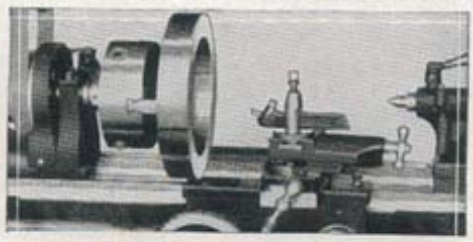
Making a steel bushing held on mandrel.

Boring the taper of a steel conical die.

Boring a steel collar held in a 4-jaw Chuck.



Machining the surface of a steel roll 5½ inches in diameter over carriage of lathe.



A steel collar 8¼ inches can be swung in the New 8-inch Junior South Bend Lathe.

Manufacturing duplicate parts from bar stock using hand lever bed turret. Seven operations are performed at one setting.

Turning a knuckle between centers in the lathe.

Reducing a cold rolled steel shaft from 3½ to 3 inches.

Equipment and Methods for Handling Four Major Auto Service Jobs

All Jobs Illustrated Done on 8-inch Junior Lathe

Truing an Armature Commutator in the 8" Junior Lathe.

Servicing Armatures in the Lathe

Servicing Armatures is the most important job coming up in automotive electrical work. The 8-inch Junior Lathe is the practical and most profitable tool for handling this work. Instruction manuals and blue prints give complete information for doing this work. See page 12.

Equipment Required

1 No. 848-L Turning Tool (L.H.) with High Speed Cutter Bit	$2.00*
3 Malleable Lathe Dogs: No. 1M, 3/8"; No. 2M, 1/2"; No. 4M, 3/4"	1.80

Truing a damaged Center Hole in armature shaft.

Undercutting Mica Insulation with mica undercutting attachment.

Refacing a 45° auto valve held in a Hollow Drill Chuck.

Refacing Valves in the Lathe

All automobile, gasoline engine, truck, tractor and airplane valves made of all materials can be refaced accurately in the 8-inch lathe. For instructions on this work, write for blueprint listed on page 12.

Equipment Required

1 No. 701, 5/8" Hollow Spindle Valve Chuck with arbor (illustrated on page 11), fitted to 8" lathe	$10.50
1 No. 695 Stellite Cutter Bit (ground), for hard valves	1.30
1 No. 848-L Turning Tool (L.H.) with Cutter Bit	2.00*

Compound Rest set at 45° angle for refacing valves.

Refacing Valve Mounted Between Lathe Centers.

Making a Bronze Bushing from Bar Stock in the Lathe.

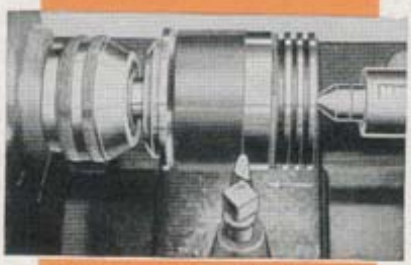
Making Bushings in the Lathe

Equipment Required

1 No. 565 Boring Tool with Cutter Bit.	$ 2.50*
1 No. 881-R Cutting-Off Tool (R.H.) with Blade	2.35
1 No. 848-L Turning Tool (L.H.) with Cutter Bit	2.00*
1 No. 740, 4", 3-Jaw Universal Chuck, fitted	23.00
1 No. 325, 3/8", 3-Jaw Drill Chuck with arbor	4.75
1 No. 865 Screw Thread Cutting Tool	3.75
2 Combination Center Drills: No. 898-B, 1/2" diam. and No. 898-D, 1/4" diam.	.55

Turning and Drilling a Bushing in 4-Jaw Chuck.

Machining a Flanged Bushing on taper arbor.



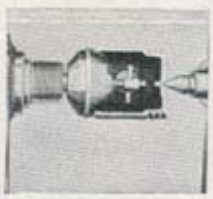
Taking a roughing cut from a Semi-Machined cast iron piston.

Finishing Semi-Machined Pistons

Pistons of all sizes and types in cast iron and aluminum alloys can be machined on the 8-inch Junior Lathe.

Equipment Required

1 No. 44-A Piston Adapter with 2 Driving Dogs; 1 No. 2-D Cone Ring for Pistons 3 1/4" to 3 5/8" diam. and 1 No. 1-Q Center Ring, 5 7/32" diam.	$10.50
1 No. 2-R Piston Skirt Reamer for pistons 3 1/4" to 3 3/4" diam.	6.50
1 No. 848-L Turning Tool (L.H.) with Cutter Bit	2.00*



Cross section of piston mounted on No. 44-A piston adapter.

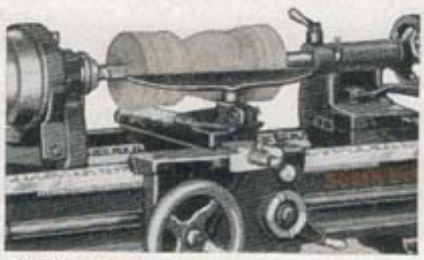
Reaming piston skirt to make it true.

*Tools marked with star (*) appear in each of 4 equipments and need not be duplicated.

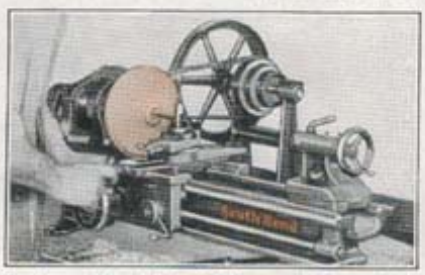
Write for Booklet No. 30 on "Latest Shop Practice."

Wood Turning Jobs on the 8-inch Junior Lathe

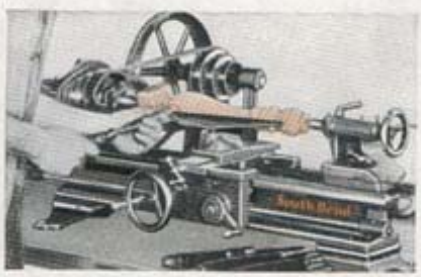
The 8-inch Junior Lathe is an excellent tool for wood turning and pattern making in both soft and hard woods. For pattern making some mechanics prefer the back-geared, screw cutting lathe because the automatic feeds and compound rest permit accurate finishing. The lathe can also be used for boring as well as turning.



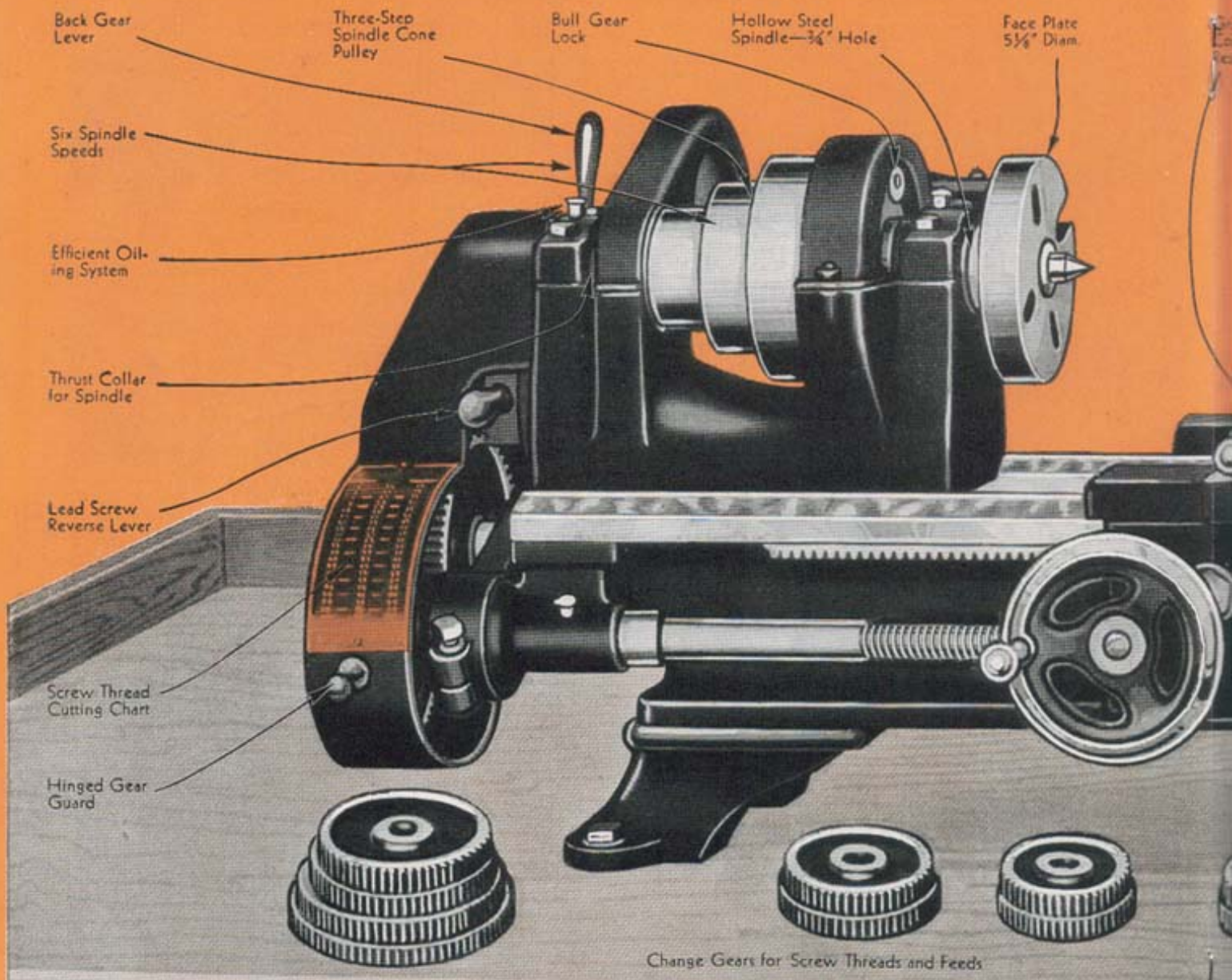
All Kinds of Woods—hard and soft—may be turned in the 8" Junior Lathe.

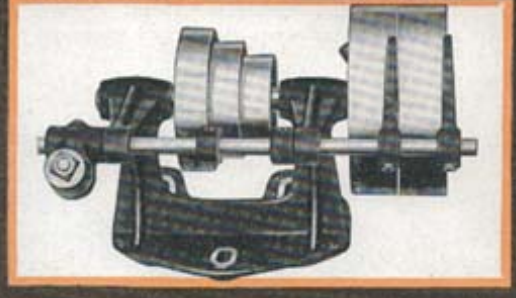


Boring a Wood Disc Held on the Face Plate of the new 8-inch Junior Lathe.



Turning a Large Diameter Ornamental Wood Column. For Hand Rests see page 11.



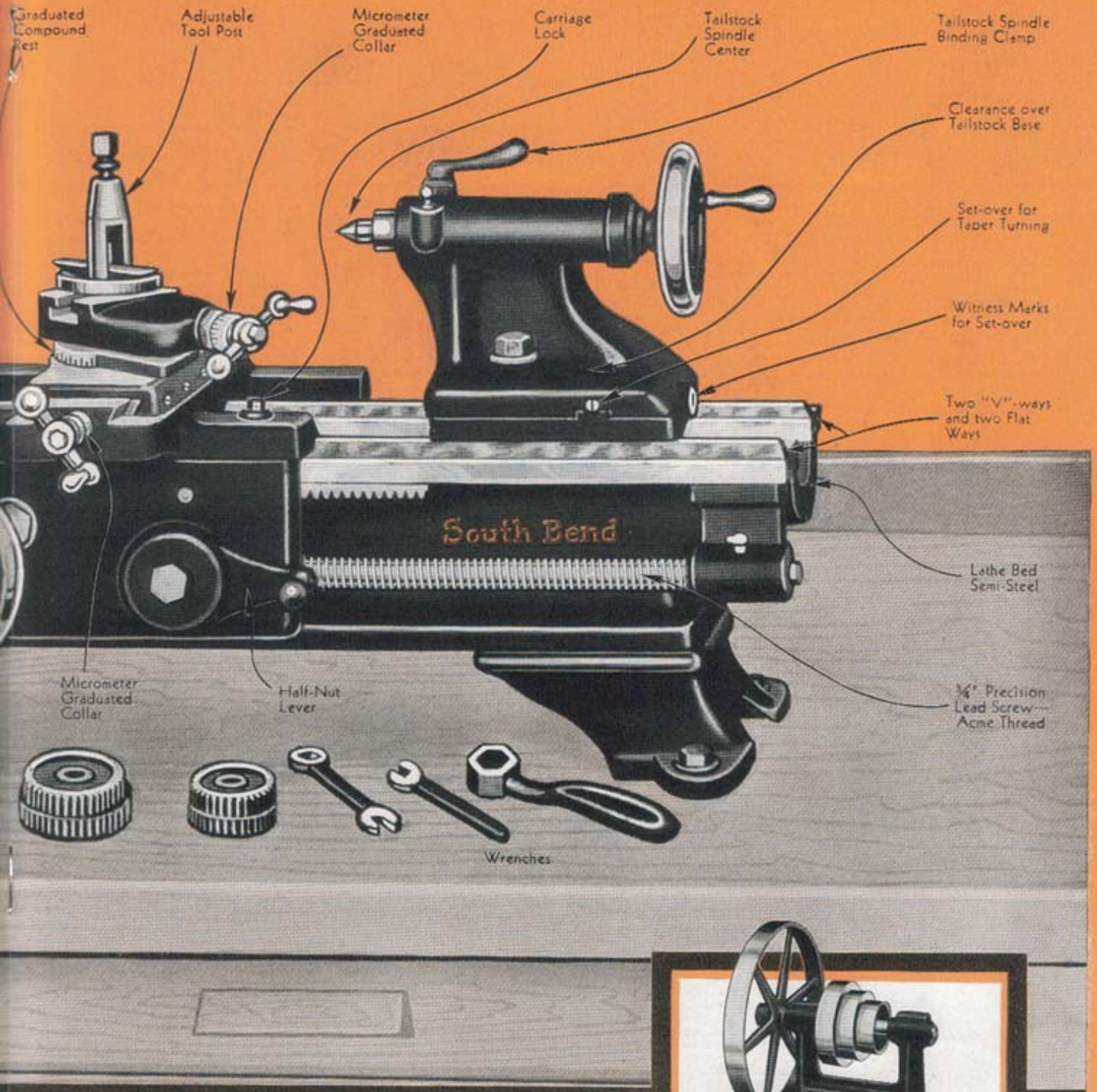


TIGHT AND LOOSE PULLEY COUNTERSHAFT

Price of lathe includes choice of Tight and Loose Pulley Countershaft or Horizontal Drive Countershaft. Double Friction Countershaft supplied at extra cost. See page 1.

THE NEW S
8-INCH JUNIOR
A Back-Geared, Screw-C

The above illustration shows the features of the 8-inch Ju in various types and drives. These features and spec



SOUTH BEND
BENCH LATHE

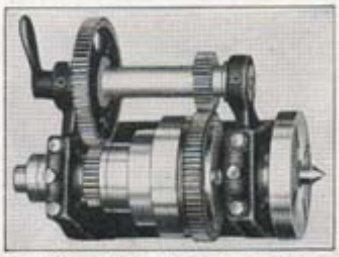
-Cutting Precision Lathe

Junior Lathe. This Lathe is shown throughout this booklet
pecifications apply to all types of 8-inch Junior Lathes.

HORIZONTAL DRIVE COUNTERSHAFT

Price of lathe includes choice of Horizontal Drive Countershaft or Tight and Loose Pulley Countershaft. Double Friction Countershaft supplied at extra cost.

Features of the New South Bend Junior 8-inch Lathe



Back-Geared Headstock seen from above.

Back-Geared Headstock shown at the left, with gear guards removed, is used on all 8-inch Junior Lathes shown throughout this book and has the following features:

- —3-step cone pulley
- —Pulley steps 1" wide
- —6 Spindle speeds
- —Balanced cone assembly
- —Hardened steel thrust collar
- —End play adjustment
- —Machine-cut-and-tested gears
- —Wrenchless bull gear clamp
- —Hand-scraped and fitted to bed
- —Patent oiling cups
- —Weight of headstock 36½ lbs.
- —Gears guarded and covered
- —Large diameter, well lubricated bearings

Cross Section drawing through headstock.

The Headstock Bearings shown in the cross section of the headstock at the left have the following features:

- —Cast iron, nickel steel alloy
- —Cast integral with head base
- —Lapped to spindle
- —Large diam., generous length
- —Felt wick positive lubrication
- —Thrust taken at rear bearing

The expert mechanic knows that the combination of a ground alloy steel spindle with a cast iron bearing when properly lubricated, makes the best and most practical type of bearing and with ordinary care should last a lifetime. Both front and rear bearings are fitted with felt wicks to distribute the oil the entire length of bearing.

Alloy Steel Headstock Spindle.

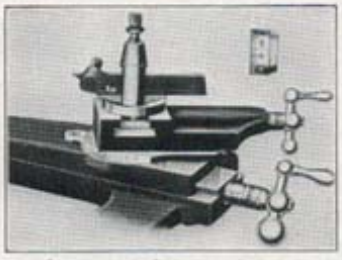
Headstock Spindle

- —Bored from solid bar
- —Special alloy spindle steel
- —Accurately ground all over
- —Spindle nose threads, chased
- —¾" hole entire length
- —Taper hole conforms to No. 3 Morse
- —Reducing sleeve receives No. 1 centers

Tailstock of 8-inch Junior Lathe.

The Tailstock of all 8-inch Junior Lathes has the following features:

- —Set-over for taper turning
- —Binding clamp locks spindle
- —Acme thread tailstock screw
- —Spindle hole No. 1 Morse taper
- —Heavy clamp for clamping to bed
- —Alloy steel spindle
- —Spindle ground all over
- —Base hand-scraped to bed
- —Reservoir for oiling center



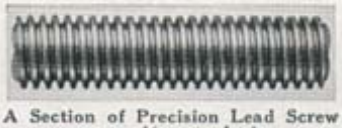
Graduated Compound Rest.

The Compound Rest and cross slide of all 8-inch Junior Lathes, shown at the left, have the following features:

- —Compound rest graduated to 180°
- —Micrometer graduated collars
- —Adjustable gibs take up wear
- —Dovetail bearings hand scraped
- —"T" slot for tool post
- —Acme thread feed screws
- —Compound rest swivels to any angle
- —Compound rest locks in any position
- —Extra long feed range
- —Hand-scraped bearings

Plain Rest

The plain rest not shown here is furnished on 8-inch Junior lathes when so specified. The plain rest is cheaper but does not have the swivel feature of the graduated compound rest, hence is used when handling operations on duplicate parts manufacturing jobs where the swivel feature is not needed.



A Section of Precision Lead Screw approx. ½ actual size.

Precision Lead Screw

- —Acme thread—8 per inch
- —Diameter ¾-inch
- —Suitable for master thread gauges
- —Cuts any type screw thread
- —Made of special alloy steel
- —Half-nuts clamp entire circumference of screw.

Lathe Bed

The illustration below shows the semi-steel lathe bed used on all 8-inch Junior Lathes. The bed is cast in one piece with cross girths at intervals of 10 inches to provide strength and rigidity. Two "V"-ways and two flat ways are accurately planed and hand scraped to align and support the headstock, carriage and tailstock. The finished bed casting alone in the 36-inch size weighs 73 lbs. net. This bed permits doing the finest and most accurate work in all kinds of metals because its strong and rigid construction prevents chatter and vibration.

Bed of 8-inch Junior Lathe, 36-inch length.

Accuracy and Precision

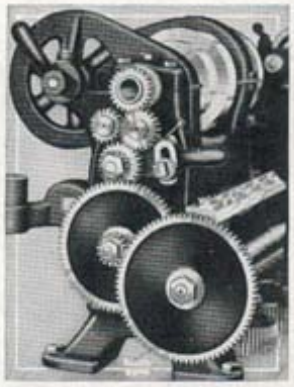
The accuracy and precision of the 8-inch Junior Lathe make it practical for use in the tool room or plant for handling the finest master screws, gauges and jig and fixture work. 64 accuracy tests during the process of manufacturing adapt the lathe to the needs of the most expert mechanic.

Hand scraping base of Tailstock.

Hand Scraping

Seventeen bearing surfaces on the bed and working units of the 8-inch Junior Lathe are accurately hand scraped to a perfect fit. This insures accuracy in the work that is turned out on the lathe. With proper care, and lubrication the 8-inch Junior Lathe will last a lifetime and retain its accuracy indefinitely.

Cutting Screw Threads on the 8-inch Junior Lathe



Screw thread gearing of 8-inch Junior Lathe.

The Thread Cutting Mechanism is composed of the train of gears illustrated at the left, a threaded lead screw and the half-nuts in the lathe apron. The small thread cutting gears and pinions are of steel cut from solid bar and with gear teeth accurately machined on special machines designed for the purpose. The large change gears and compound gears are of alloy iron with the teeth accurately cut.

The Lead Screw Reverse shown in the illustration at the left permits operating the lead screw in either direction while the lathe spindle is operating in one direction. This permits machining work from left to right or from right to left and permits cutting right and left hand screw threads.

In the illustration above we show the train of gears set for a fine turning feed with the large turning gear on the lead screw. This setting provides a feed of 307 per inch. The reverse lever is in the "up" position, arranged for operating the apron from right to left on the lathe bed.

Threads Which Can Be Cut include U. S. Std., Whitworth, S.A.E., Acme and Square threads, single and multiple, right hand or left hand ranging from 4 to 40 per inch as shown on the screw thread cutting chart illustrated at the left. In addition, by compounding the gears as instructed in the book, "How to Run a Lathe," many other special threads can be cut. A metric transposing gear attachment can be added to cut French and International Metric Standard threads, if desired. See page 10.

Change Gears.

Change Gears shown in the stack at the left are included as standard equipment of each 8-inch Junior Lathe. All the gears called for on the screw thread cutting chart are included in this equipment. All threads and feeds from coarse to fine are obtainable by changing these gears on the lathe.

Cutting Fine Pitch Screw Threads

For the mechanic wishing to cut very fine screw threads not shown on the above chart, we can furnish a special bracket for holding additional gears and which is used instead of the regular bracket on the lathe when cutting fine pitch screw threads. The special bracket and gears may be attached or removed whenever desired. See illustration and price on page 10.

Electric Motors and Control Switches

For Operating the 8-inch Junior Motor Driven Lathes

Reversing the Lathe Spindle

When Cutting a Screw Thread on the small screw cutting lathe, the operator should be able to reverse the direction of the power feed of the carriage after taking each chip in the cutting of the thread. That is why we use a reversing motor and a reversing switch for the 8-inch lathe, motor drive type.

The Difference in the Price of reversing and non-reversing motors and switches is very small, but if many screw threads are to be cut this reversing feature will be found very valuable.

The 8-inch Lathe equipped with a double friction overhead countershaft permits the reversing feature because one of the friction pulleys is operated by a crossed belt; see drawing below.

It is possible for the expert mechanic to cut screw threads on a lathe without reversing the carriage by power after each chip, but it is difficult for anyone except the experienced operator and even he prefers the reversing by power feature when cutting small screw threads.

Power from Ordinary Lamp Socket. The electric current from the ordinary lamp socket has sufficient power to drive the ¼ H.P. motor to operate the 8-inch lathe under a full load. The cost of the current used is less than 2c per hour in most communities.

Other Current Specifications. If you do not have 1-phase, 60-cycle, 110-volts A.C. we can furnish motors to meet the specifications of your electric current, either A.C. or D.C. any phase, cycle or voltage. For prices and complete information write to us specifying your electric current characteristics and quotations will be given you in detail.

The Motor Driven Lathes shown in this booklet are all operated by start-and-stop type reversing motors and drum type reversing switches. These motors and switches are illustrated, described and priced in the column at the right. We recommend that the motor driven lathe be ordered completely equipped with motor and switch before the shipment leaves the factory, as the motor and switch we supply are both tested for efficiency and the lead wires from the motor are numbered for the proper connections to the switch, making the installation easy for the mechanic.

Start-and-Stop Type Reversing Motors

We Recommend the ¼ H.P. split-phase Start-and-Stop Type Reversing Motor, 1725 R.P.M. suitable for operation on 1-phase, 60-cycle, 110-volt alternating current, as the motor most practical for the 8-inch Back-Geared, Screw Cutting Lathe illustrated and described in this Bulletin.

To Start the Motor, throw the switch in the forward position; to reverse, throw the switch lever in neutral (or stop) position until the motor comes to a dead stop, then throw the switch lever in the reverse position.

The Illustration at the Left shows the ¼ H.P. split-phase motor, suitable for 1-phase, 60-cycle, 110-volt A.C. Start-and-Stop Reversing type, diameter of shaft ½". This is the motor we have listed in the prices of all motor driven lathes shown in this booklet.

Start-and-Stop Type Reversing Motor

Catalog No.	H.P. Size	Speed R.P.M.	Code	Price
195-A	¼ H.P.	1725	Ripat	$10.

Drum Reversing Switch

The Drum Reversing Switch illustrated below is used for starting, stopping and reversing the Start-Stop Type Reversing Motors and Instantly Reversing Motors, ¼ H.P. 1725 R.P.M. 1-phase, A.C.; 3-phase, A.C.; and Direct Current. The switch lever has three positions—"left" for starting, "center" for stopping and "right" for reversing the rotation of the lathe spindle. The price of the Drum Reversing Switch is $5.00 and is included in the price of all 8-inch Junior Motor Driven Lathes shown in this circular.

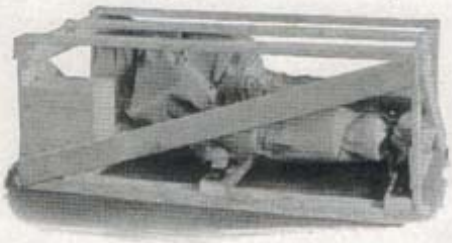
Reversing Switch (Drum Type)

In Case You Want to Use Your Own Motor instead of the motor supplied with the 8-inch Horizontal Motor Driven Lathes or the Simplex Motor Driven Lathes, we can furnish the pulley for the motor if you will specify the diameter of shaft and speed of motor and type of belt to be used. We can also furnish a knife switch, price $1.50.

Engineering Service—Lathe Installation Plans

Engineering Service

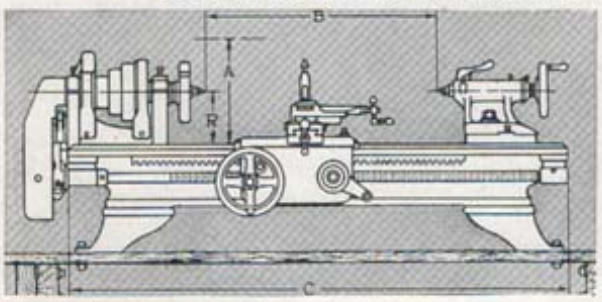
We build 96 sizes and types of lathes in addition to the 8-inch Junior Models shown in this book. If you wish a lathe for doing any kind of machining and would like to have our advice, send us a sample, a drawing or a sketch of the work. Our Engineering Department will give you the benefit of our thirty years experience and recommend the equipment best suited to your needs.



Safe Delivery Guaranteed

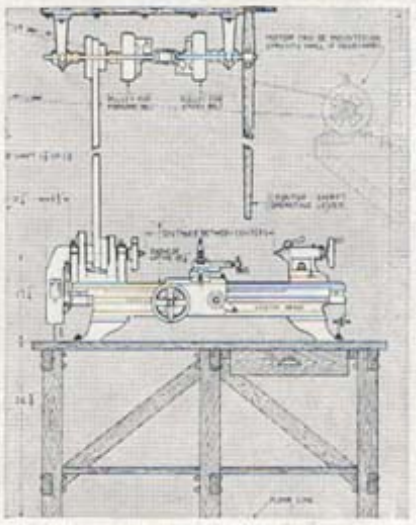
Every South Bend Lathe is carefully packed and crated to reach you in perfect condition free from rust and breakage. Over 55,000 South Bend Lathes have been shipped from our factory in the past 25 years. We protect you against any loss or damage while your lathe is in transit.

How to Determine the Size of a Lathe



When selecting a lathe, choose one having a swing over bed and a distance between centers at least 10% greater than the work you wish to handle. The illustration shows how to determine the size of any lathe.

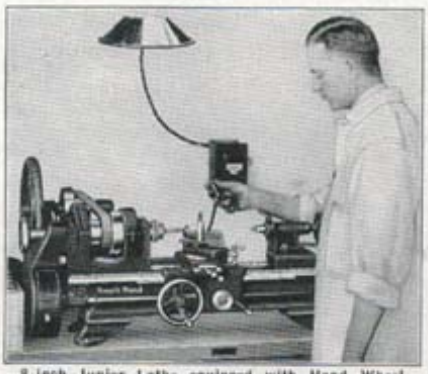
(a) Swing of Lathe
(b) Between Centers
(d) Length of Bed
(r) Radius



Installation Plan Blue Prints

With each 8-inch Junior South Bend Lathe we supply a blue print 12" x 18" giving complete information on the correct installation and setting up of the lathe. This information includes: Correct size and speed of pulleys, method of hanging countershaft, size of belt to use, and similar information. Detailed information for setting up, leveling, operating and caring for the lathe will be found in the book, "How to Run a Lathe," included with each lathe shipped.

Attachments for the New Junior 8-inch South Bend Lathe



8-inch Junior Lathe equipped with Hand Wheel Draw-in Collet Chuck Attachment

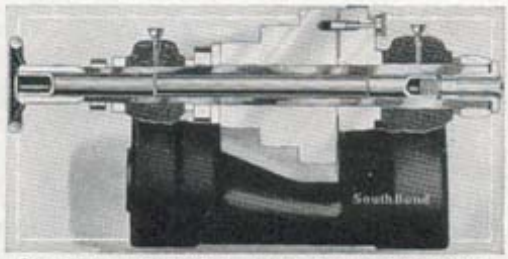
Hand Wheel Draw-in Collet Chuck Attachment

The Hand Wheel Draw-in Collet Chuck Attachment is practical for the 8-inch Junior Lathe for fine tool work in the tool room and for the rapid and economical production of small accurate parts such as precision parts for watches, typewriters, sewing machines, adding machines, radios, etc.

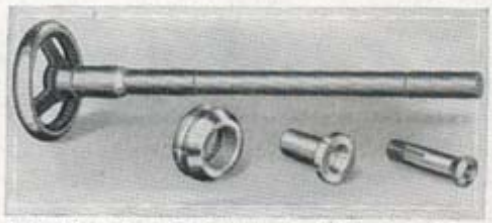
The hollow draw-bar permits bars and rods being passed through the lathe spindle and held in the chuck for machining. The draw-bar operates the steel split collet. As the draw-bar is rotated, the thread in the draw-bar causes the collet to tighten or release the work.

Price of attachment includes: Hand wheel and hollow draw-bar; spindle nose cap; wrench for nose cap; tapered steel closing sleeve, hardened, tempered and ground; and one round split collet any size from $\frac{1}{64}$ inch up (by 64ths) to $\frac{1}{2}$-inch capacity.

Cat. No. 4308.....$25.00



Cross Section of Headstock showing Draw-in Collet Chuck



Hand Wheel Draw-in Collet Chuck Attachment with one Round Split Collet, for 8-inch Junior Lathes

Round Split Collets

Made of tool steel, hardened, tempered and ground. Hole sizes range from $\frac{1}{64}$ inch up (by 64ths) to $\frac{1}{2}$ inch.

Cat. No. 608. Price each..$2.50

Special Collet with $\frac{1}{8}$-inch hole for holding jeweler's plunger blanks.

Cat. No. 608½. Price each.....$3.00

Special Split Collets

Special collets for holding square and hexagonal work, also collets of special hole sizes such as odd diameter drill and wire and metric sizes can be furnished if desired. Prices quoted on request.

Round

Square

Hexagonal

Step Chuck and Closer

For holding discs and similar round flat work. Prices quoted on request.

Graduated Taper Attachment
Cat. No. 208. Price.....$40.00

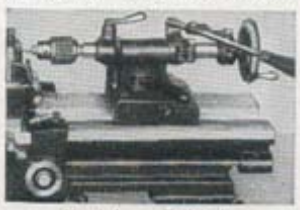
Thread Dial Indicator
Cat. No. 808. Price.....$6.50

Micrometer Carriage Stop
Cat. No. 970. Price.....$8.00

Milling and Keyway Cutting Attachment
Cat. No. 8. Price.....$30.00

Hand Lever Bed Turret
Cat. No. 1508 (fitted to lathe). Price $220.00

Round Tool Post Turret
Cat. No. 8-E. Price.....$65.00



Hand Lever Tailstock
Cat. No. 599. Price.....$30.00

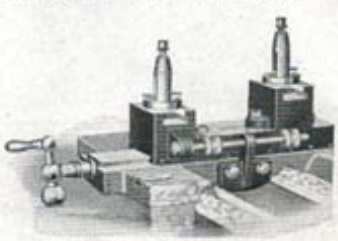
Milling Cutters and Arbors
Information and prices on request

Electric Grinder for Lathe with 1/6 H.P. Universal Motor, 10,000 R.P.M.; 4-inch wheel; and graduated base
Cat. No. 183. Price.....$40.00

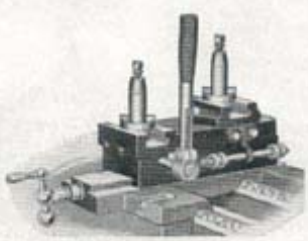
Light Duty Electric Tool Post Grinder
Cat. No. 165. Price.....$27.50

8" Bench Electric Emery Grinder, complete with two grinding wheels each 8"x½"x½", one 60 Grain and one 40 Grain, also cord and switch
Cat. No. 710-E. Price.....$20.00

Bench Emery Grinder (Belt Drive) complete with two 6-inch grinding wheels, one coarse and one fine.
Cat. No. 710-B.....$5.00



Double Tool Screw Slide
Cat. No. 980. Price.....$30.00



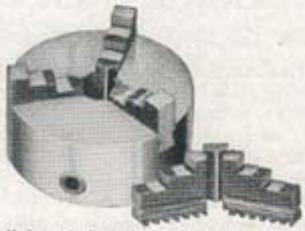
Double Tool Slide (Hand Lever Type)
Cat. No. 999-H. Price.....$50.00

Metric Transposing Gear Attachment
Cat. No. 1449. Price.....$20.00

Double Gear Bracket for cutting fine screw threads
Cat. No. 1049. Price.....$12.50

Chucks and Tools for the New 8-inch Junior South Bend Lathe

4-Jaw Independent Lathe Chuck (Light Duty) with Four Reversible Jaws, Iron Body
No. 658—3" Chuck (3¼" capacity). Price....$15.00
No. 659—4" Chuck (5" capacity). Price..... 17.00
No. 660—5" Chuck (6" capacity). Price..... 19.00



3-Jaw Universal Geared Scroll Lathe Chuck (Light Duty) with Outside and Inside Jaws
No. 739—3" Chuck (3¼" capacity). Price....$16.00
No. 740—4" Chuck (4¼" capacity). Price.... 18.00
No. 741—5" Chuck (5" capacity). Price..... 20.00

Chuck-Back for Lathe Chuck

Chuck Fitted with Chuck-Back

CHARGES FOR FITTING CHUCKS TO LATHE
Prices of Lathe Chucks illustrated at left, do not include chuck-backs or fitting to lathe.
Extra for chuck-back threaded to fit spindle nose..$3.00
Extra for fitting chuck-back to chuck and lathe.. 2.00

3-Jaw Drill Chuck (Light Duty) with wrench but not arbor
No. 325—Drill Chuck, ⅜" cap..$3.50
No. 326—Drill Chuck, ½" cap.. 5.25

3-Jaw Drill Chuck with Wrench but not arbor
No. 1200—⅜" Chuck...$4.25
No. 1201—½" Chuck... 6.75

Solid Steel Arbor for the 3-Jaw Drill Chuck as illustrated and priced at left.
No. 708 .....$0.50

Hollow Spindle Valve Chuck, ⅜" capacity. Wrench included but not arbor.
No. 701 .....$7.50

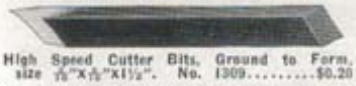
Hollow Steel Arbor for the Hollow Spindle Valve Chuck as illustrated at left.
No. 1220 .....$3.00

Turning Tool (straight shank) with One Cutter Bit (not ground)
No. 848-S—Straight Shank Turning Tool $2.00
No. 848-L—Left-Hand Turning Tool 2.00
No. 848-R—Right-Hand Turning Tool 2.00
Turning Tool (choice of straight shank, left hand or right hand) with one unground cutter bit and a set of six high speed steel cutter bits ground to form as shown below. No. 603.....$3.20

A Left-Hand Turn'g Tool — B Round Nose Turn'g Tool — C Right-Hand Turn'g Tool — D Left-Hand Side Tool — E Threading Tool — F Right-Hand Side Tool

High Speed Steel Cutter Bits

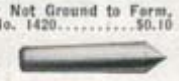
Cutter bits are furnished both ground and unground. The cutters shown above are hardened and ground to form ready for use. This set covers the range of general lathe work. When ordering mention form wanted.



High Speed Cutter Bits, Ground to Form, size ⅜"x⅜"x1½". No. 1309.....$0.20

Set of six High Speed Cutter Bits, Ground to Form. No. 1109.....$1.20

High Speed Cutter Bit, Not Ground to Form, size ½"x⅝"x1½". No. 1420.....$0.10



Head Spindle Center
No. 725-I $1.25

Cutting-Off Tool with One Cutter.
Right Hand—No. 881-R.....$2.35
Left Hand—No. 881-L..... 2.35
Straight—No. 881-S 2.35

Formed Threading Tool with One Formed Cutter.
No. 865 .....$3.75

Knurling Tool with one Set of Knurls.
No. 891 .....$5.10

Boring Tool Holder (Style "D") with Wrench and ¼" Boring Bar.
No. 365 .....$2.50
⅛" Boring Bar. No. 498..... .50

Standard Malleable Lathe Dogs.
⅜" Cap. No. 1-MJ.....$0.50
½" Cap. No. 2-MJ..... .60
¾" Cap. No. 4-MJ..... .70
1" Cap. No. 6-MJ..... .80
1¼" Cap. No. 8-MJ..... .90

Shipped Knocked Down
Pine Bench for Junior 8-inch Lathes
No. 915—Top 28"x42", Ht. 30"...$20.00
No. 917—Top 28"x54", Ht. 30".. 23.00

Spur Center
No. 732 .....$2.00

Screw Center
No. 731 .....$2.00

Hand Rest for Wood Turning. Complete with base and three hand rests.
No. 896 .....$5.00
No. 1, Base only 2.50
No. 2, Hand Rest 12".. 1.25
No. 3, Hand Rest 7"... 1.00
No. 4, Hand Rest 4"... .75

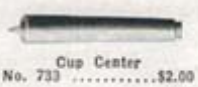
Crotch Center
No. 728 .....$2.00

Drill Pad
No. 727 .....$2.00

Large Face Plate for Lathe
No. 39 ....$3.00

Follower Rest for Lathe
No. 128 ...$2.50

Center Rest for Lathe
No. 124 ...$5.00



Cup Center
No. 733 .....$2.00

Center Drill and Countersink
⅛" diam. No. 898-B.....$0.25
¼" diam. No. 898-C..... .25
⅜" diam. No. 898-D..... .30

Center Gauge for Testing Lathe Centers and Setting Threading Tool.
No. 650 .....$0.30

Thread Cutting Stop
No. 65 .....$1.75

1-J CHUCK AND TOOL ASSORTMENT
$10.90
For the Small Shop

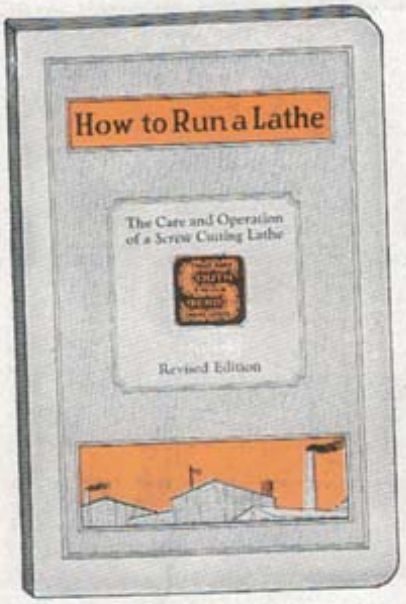
⅜" 3-Jaw Drill Chuck with arbor.....	$ 4.00
Turning Tool, straight (cutter unground)..	2.00
Six Cutter Bits, ground, Forms A, B, C, D, E, F.....	1.20
Combination Boring Bar.....	2.50
Two Malleable Lathe Dogs, ⅜", ½".....	1.20
No. 1-J Assortment, Complete.....	**$10.90**

2-J CHUCK AND TOOL ASSORTMENT
$32.90
For the Medium Size Shop

4" 4-Jaw Independent Lathe Chuck.....	$17.00
Fitting Chuck including Chuck Back.....	5.00
⅜" 3-Jaw Drill Chuck with arbor.....	4.00
Turning Tool, straight (cutter unground).	2.00
Six Cutter Bits, ground, Forms A, B, C, D, E, F.....	1.20
Combination Boring Bar.....	2.50
Two Malleable Lathe Dogs, ⅜", ½".....	1.20
No. 2-J Assortment, Complete.....	**$32.90**

3-J CHUCK AND TOOL ASSORTMENT
$40.10
For the General Shop

4" 4-Jaw Independent Lathe Chuck.....	$17.00
Fitting Chuck including Chuck Back.....	5.00
⅜" 3-Jaw Drill Chuck with arbor.....	4.00
Turning Tool, straight (cutter unground).	2.00
Threading Tool	3.75
Combination Boring Bar.....	2.50
Cutting-off Tool, right hand.....	2.35
Five Malleable Lathe Dogs, ⅜", ½", ⅝", ¾", 1", 1¼"	3.50
No. 3-J Assortment, Complete.....	**$40.10**



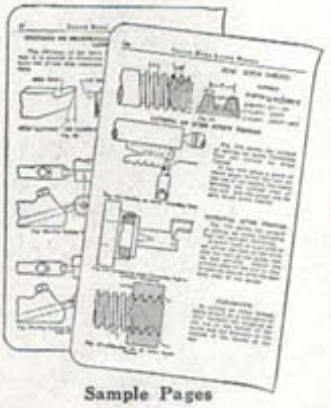
"How to Run a Lathe"—30th Edition

For the Mechanic and Apprentice

"How to Run a Lathe" is an authoritative manual covering the fundamental operations of the modern screw cutting lathe. It contains 160 pages, 5¼" x 8", and more than 300 illustrations, all devoted to the erection, installation and operation of the screw cutting engine lathe. The modern methods for handling over 400 machine operations on the lathe are fully described and illustrated.

There are more than one million two hundred and fifty thousand copies in use throughout the world. Used as text books in the shops of vocational schools, trade and industrial schools, also by apprentices in the machine shops of leading railroads and large industrial plants. A copy of this book is included with each Lathe.

Mailed Anywhere in the World, Postpaid, 25 cents.



Sample Pages

PARTIAL LIST OF CONTENTS

How to Set Up the Lathe
Care of the Lathe
How to Lay Out a Shop
How to Level a Lathe
How to Hang a Countershaft
Calculating Size and Speed of Pulleys
How to Lace a Belt
Grinding and Setting Lathe Tools
Cutting Screw Threads
Turning and Boring Tapers
Grinding and Milling Work
Chucks and Face Plates
Cutting Speeds of Metals
Cutting Feeds for Metals
Operating Automatic Feeds
Reading Micrometer Calipers
Using Outside and Inside Calipers
Locating Center Holes
Aligning Lathe Centers
Drilling, Boring, Reaming, Tapping
Use of Compound Rest
Table of Decimal Equivalents
Table of Metric Measures
300 Other Shop Kinks

Blue Prints and Working Drawings

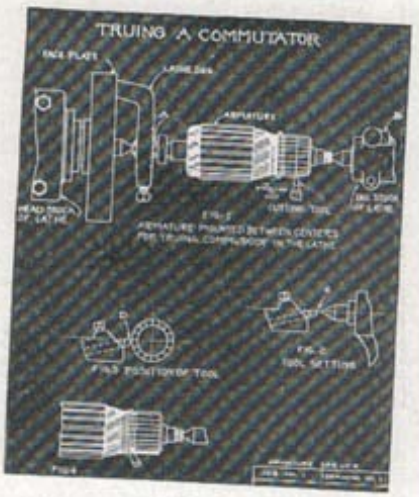
How to Do Practical Jobs on the Back-Geared, Screw Cutting Lathe

To assist the users of South Bend Lathes, the South Bend Lathe Works has prepared over three hundred blue prints containing working drawings of the popular jobs that come up in machine shop work, auto, truck and tractor service, highway repair shop, the home shop, farm shop, laboratory, school shop and manufacturing plants. At the right is a partial list of the blue prints giving their number, size and price. Prices cover postage, cost of blue print and handling. In ordering be sure to give the blue print number.

If interested in a complete list of the 300 blue print drawings, charts, etc., write for 4-page circular No. 57.

PARTIAL LIST

Job No.	Name of Blue Print	Price post-paid
1-A	Truing an Armature Commutator	$0.25
3-A	Undercutting Mica on Commutator	.30
10-A	Refacing Valves	.25
20-A	Making Bushings	.35
32-A	Finishing Semi-machined Pistons	.45
15-M	Screwdriver, Steel	.55
13-M	1-inch Bolt and Nut	.55
20-M	Machinists Clamp	.55
24-M	Machinist Hammer Kit	.55
68-M	8-inch Bench Lathe	3.35
18-M	"C" Clamp	.75
21-M	Bell Centering Punch	.55
42-M	Machinists Jack Screw	.55
66-M	8-inch Emery Grinder	1.15
39-M	Making a Small Bench Vise, 2¾-inch Jaws	1.05
65-M	10-inch Bench Drill Press	2.40
80-M	Model Airplane Engine	3.00
70-M	¼ H.P. Gasoline Engine, Vertical, Air Cooled	2.85



Guarantee of Lathe

WE GUARANTEE every 8-inch Junior 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, anywhere in the United States, any part that proves defective, either in material or workmanship, within one year from the date of purchase.

15-Day Trial of Lathe

We will ship an 8-inch Junior South Bend Lathe anywhere in the United States for a free fifteen-day trial in your own shop. If for any reason you are dissatisfied you may return the lathe in good condition at our expense and we will refund the amount you have paid including transportation charges.

Easy Payment Plan

For the convenience of our customers, we have an Easy Payment Plan that can be used when buying any size South Bend Lathe with attachments, chucks or tools. This plan gives you an opportunity to pay for the lathe while using it. To determine the down payment and monthly payment on your order see tabulation at right. For further information write for Easy Payment Circular No. 92-P.

If Total Price of Your Order Amounts to	Add for Financing	Down Payment	Payment Each Month
$100.00 to $110.00	$ 7.00	$30.00	$ 7.00
110.01 to 120.00	7.00	32.00	7.50
120.01 to 130.00	7.50	33.00	8.50
130.01 to 140.00	8.00	34.00	9.00
140.01 to 150.00	9.00	35.00	10.00
150.01 to 175.00	10.00	36.00	11.50
175.01 to 200.00	11.50	40.00	13.00
200.01 to 225.00	13.00	45.00	15.00
225.01 to 250.00	14.50	50.00	17.00
250.01 to 275.00	16.00	55.00	18.50
275.01 to 300.00	17.50	60.00	19.50

Factory of the South Bend Lathe Works

The illustration at left shows the factory of the South Bend Lathe Works, established in 1906. This organization is devoted exclusively to the manufacture of South Bend Back-Geared, Screw Cutting Precision Lathes. More than 55,000 South Bend Lathes are in use in the U. S. and 88 other countries.

South Bend Lathe Works

425 East Madison Street,
South Bend, Indiana, U. S. A.

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