

Bulletin No. 9

Describing the 1930 New Model

9 - Inch Lathe

A PRECISION TOOL

for use in the

Manufacturing Plant	Machine Shop
Tool Room	Auto Service Shop
General Repair Shop	Electrical Shop
Engineering Shop	Aeronautical Plant
and Metal Working Industries of all kinds.	

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February, 1930

South Bend Lathe Works

409 East Madison St., South Bend, Indiana, U. S. A.

Established 1906

Lathe Builders for 24 Years

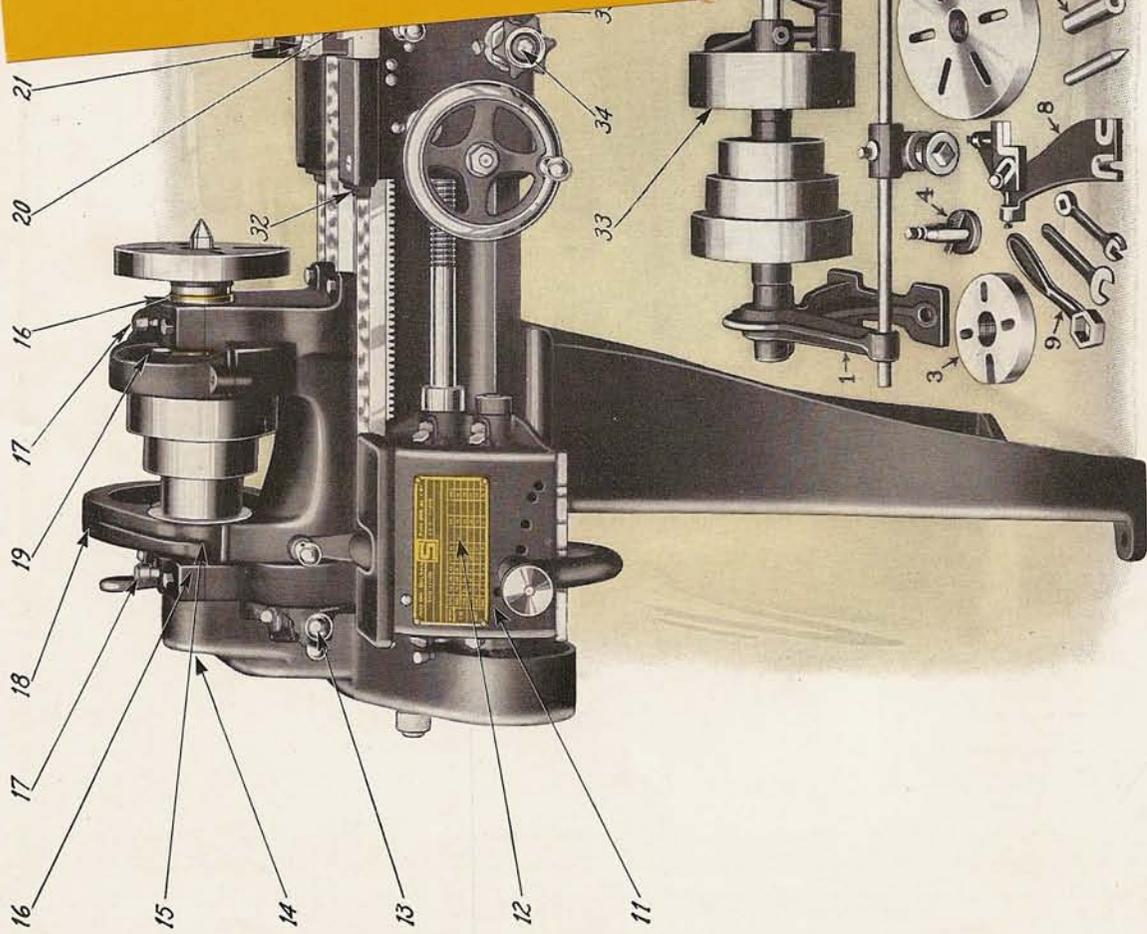
New Features of the Improved 9-Inch South Bend Lathe

Quick and Standard Change Gear Types

The following Improvements have been made on all types of 9-inch Quick Change and Standard Change Gear Lathes shown in this bulletin.

- 1—Spindle Cone Step increased from 1" to 1 1/4" in width.
- 2—Over-all length of headstock increased 1/8".
- 3—Power increased approximately one-third.
- 4—Improved Gear Guards on headstock.
- 5—Toes on headstock to bolt to lathe.
- 6—Improved oiling system on back gear quill.

SOUTH BEND LATHE WORKS
February, 1930.



The 9-inch New Model South Bend Back Geared Screw Cutting Precision Lathe

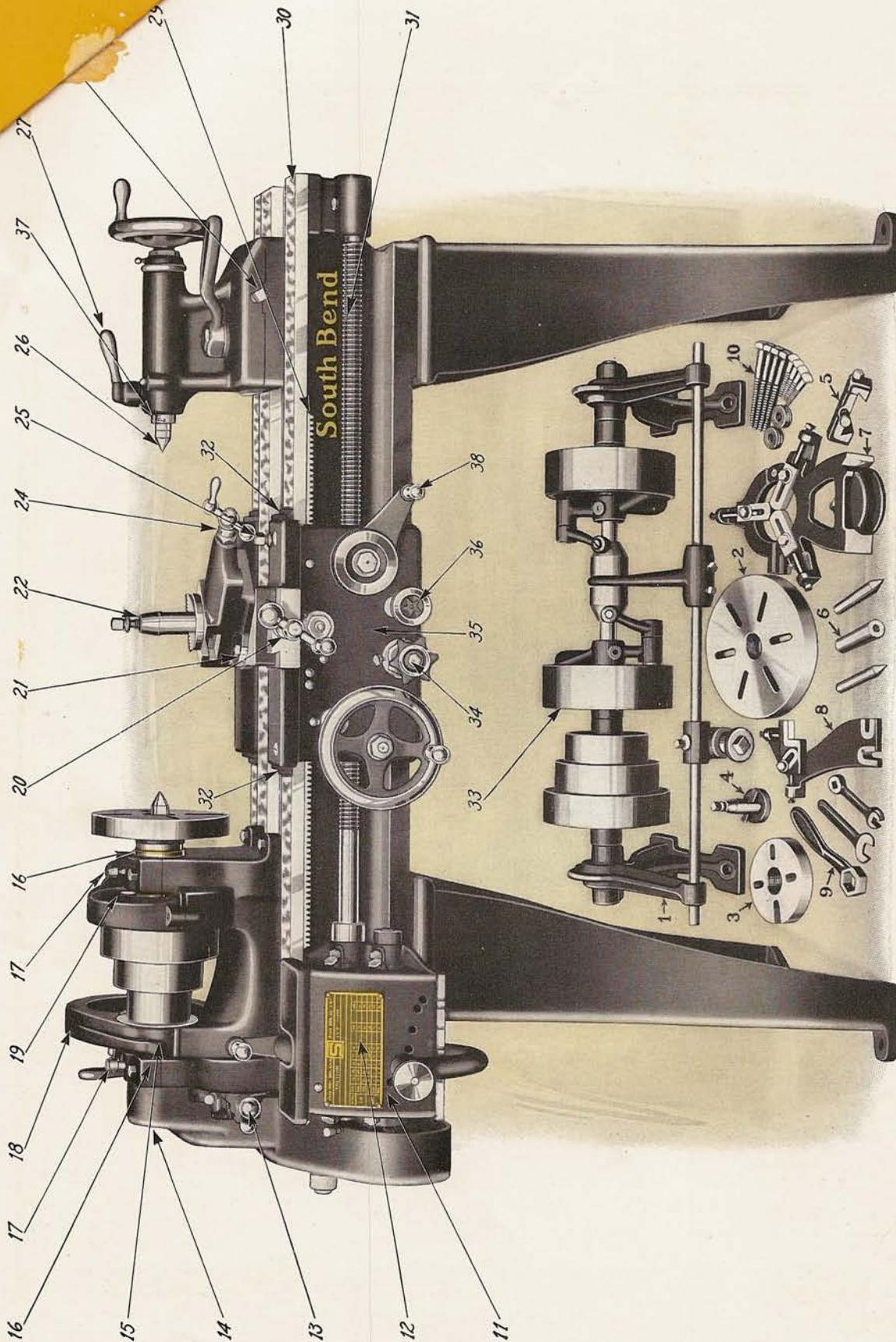
The Illustration Above Shows the Basic Design and Principal Features of All Types of 9-inch Lathes

- 1-10—Equipment furnished with Lathe.
- 11—Quick Change Gear Box.
- 12—Index Plate for Threads and Feeds.
- 13—Quick-acting Latch Reverse.
- 14—Special Carbon Steel Hollow Spindle.
- 15—Hardened and Ground Steel Thrust Collar.
- 16—Large Phosphor Bronze Bearings.

- 17—Patent Oil Cups.
- 18—Back Gears well guarded.
- 19—Wrenchless Bull Gear Clamp.
- 20—Micrometer Collar on Cross Feed Screw.
- 21—Compound Rest graduated 180 degrees.
- 22—Forged Steel Adjustable Tool Post.
- 24—Micrometer Collar on Compound Rest Screw.

- 25—Carriage Lock for facing.
- 26—Self-aligning Center Rest.
- 27—Tailstock Spindle Lock.
- 28—Set-over Tailstock for taper turning.
- 29—Steel Rack, cut from the solid.
- 30—Semi-steel seasoned Lathe Bed.
- 31—Precision Lead Screw, Acme Thread.

- 32—Felt Shear Wipers and Oilers.
- 33—Automatic Center Rest.
- 34—Automatic Feed for Chuck.
- 35—Safety Device in Apron, see page 14.
- 36—Knob for Automatic Feed.
- 37—Graduated Tailstock Spindle.
- 38—Half-nut Lever for Thread Cutting.



The 9-inch New Model South Bend Back Geared Screw Cutting Precision Lathe

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- 23—Micrometer Collar on Compound Rest Screw.
- 24—Precision Lead Screw, Acme Thread.
- 25—Carriage Lock for facing.
- 26—Tool Stee Lathe Centers.
- 27—Tool Rest Sliding Lock.
- 28—Set-over Tailstock.
- 29—Steel Rack, cut from the solid.
- 30—Semi-steel seasoned Lathe Bed.
- 31—Graduated Tailstock.
- 32—Felt Shear Wipers and Oilers.
- 33—Double Friction Countershaft.
- 34—Automatic Friction Feed Clutch.
- 35—Safety Device in Apron, see page 14.
- 36—Apron for Automatic Feed.
- 37—Graduated Spindle.
- 38—Half-nut Lever for Thread Cutting.

The 9-inch New Model South Bend Precision Lathe

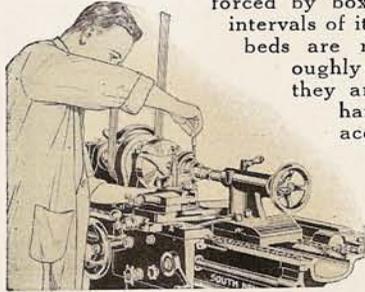
A Back Geared Screw Cutting Lathe for the Machining of Metals

We recommend the 9-inch New Model South Bend Back Geared Screw Cutting Lathe for working of metals in the manufacturing plant, tool room, general repair shop, engineering shop, machine shop, auto service shop, electrical shop, laboratory and in metal working industries of all kinds.

The 9-inch New Model South Bend Lathe is a development of 24 years' experience in lathe building. Each of the 352 parts of the lathe has been improved. Today this lathe is used by the leading industries because they have found it an accurate, reliable, economical and high grade tool.

Features of the 9-inch New Model South Bend Precision Lathe

The Lathe Bed is a close grained casting of gray iron and steel mixture containing 18 per cent steel to give it strength and wearing qualities. The bed is reinforced by box braces cast in at short intervals of its entire length. The lathe beds are rough planed then thoroughly seasoned. After seasoning they are finish planed and then hand scraped which insures accuracy. The bed has three "V" ways and one flat way for aligning the carriage, headstock and tailstock.



The Headstock Unit is ruggedly constructed and scientifically braced to insure perfect alignment of the spindle bearings. It is equipped with a Quick Acting Reverse Lever for changing the direction of the automatic feeds. See page 14.

The Three-Step Spindle Cone is used on the 9-inch New Model Lathe. It provides a wide range of spindle speeds suitable for manufacturing and general machine work. The Cone Pulley and Bull Gear are accurately balanced so that the lathe can be operated at high speed with the open belt on the small steps, without danger of vibration, for finish turning work of small diameter, filing, drilling, polishing and machining brass, aluminum, etc. The larger steps provide additional speeds for general work. The back gears furnish the slow speeds and power for heavy roughing cuts.

The Headstock Spindle is made of a special alloy spindle steel. It has a hole its entire length for machining rods and bars through the lathe chuck and draw-in collet chuck. Both of the spindle bearings are ground and fitted in phosphor bronze boxes of unusual strength. See page 14.

The Phosphor Bronze Bearings for the headstock spindle are designed for heavy duty work and are adjustable for wear. They are hand scraped to the spindle. Patent oil cups and felt wicks lubricate the spindle and protect bearings from dust and grit. See page 14.

The Tailstock is heavy and has a long bearing on the lathe bed. It has a 3/4-inch set-over for taper turning. It allows the compound rest to swivel parallel to the bed. The tailstock spindle is graduated. The binding lever locks the tailstock spindle without disturbing alignment of centers.

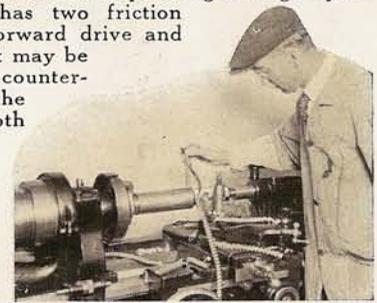
The Carriage has a wide bridge and a long bearing on the "V" ways of the bed. The ways are hand scraped to perfect bearing. The cross feed screw has Acme Thread and a micrometer graduated collar reading in 1/1000 of an inch. A locking device fastens the carriage to the bed when using the cross feed. Felt shear wipers are attached to the carriage to keep the "V" ways clean and oiled.

The Apron has automatic friction cross feed and automatic friction longitudinal feed mechanism. It is also provided with half-nuts which are used only when cutting screw threads, and not for driving either of the automatic feeds. An automatic safety interlock prevents the half-nuts and automatic feeds from being engaged at the same time.

The Precision Lead Screw is 3/4 inch in diameter, made of special steel and has Acme Thread—8 per inch—cut on a special machine equipped with a Pratt & Whitney master lead screw. The lead screw is tested for form of thread and accuracy of lead and is guaranteed to meet the most exacting requirements for cutting the finest precision thread gauges, master taps, dies, etc. The lead screw is splined which permits it to serve as a feed rod for operating the automatic friction feeds. The threads of the Lead Screw are used only for cutting screw threads and not for operating the automatic feeds. The threads of the lead screw should last a lifetime. See illustration on page 14.

The Compound Rest is graduated in degrees from 0 to 90° from center to each extremity of the arc. It swivels on a central stud and can be clamped and operated at any angle. It has an angular travel of 1 7/8 inches. The Compound Rest Screw has Acme Thread and a micrometer collar graduated 1/1000 of an inch. See page 14.

The New Model Double Friction Countershaft is practical and powerful and is balanced for operating at high speed without vibration. It has two friction drive pulleys, one for forward drive and the other for reverse. It may be arranged as a two-speed countershaft by eliminating the reverse and driving both clutch pulleys forward, using pulleys of different diameters on the lineshaft. This arrangement gives six higher speeds for machining brass, bronze, aluminum, copper, babbitt, etc.

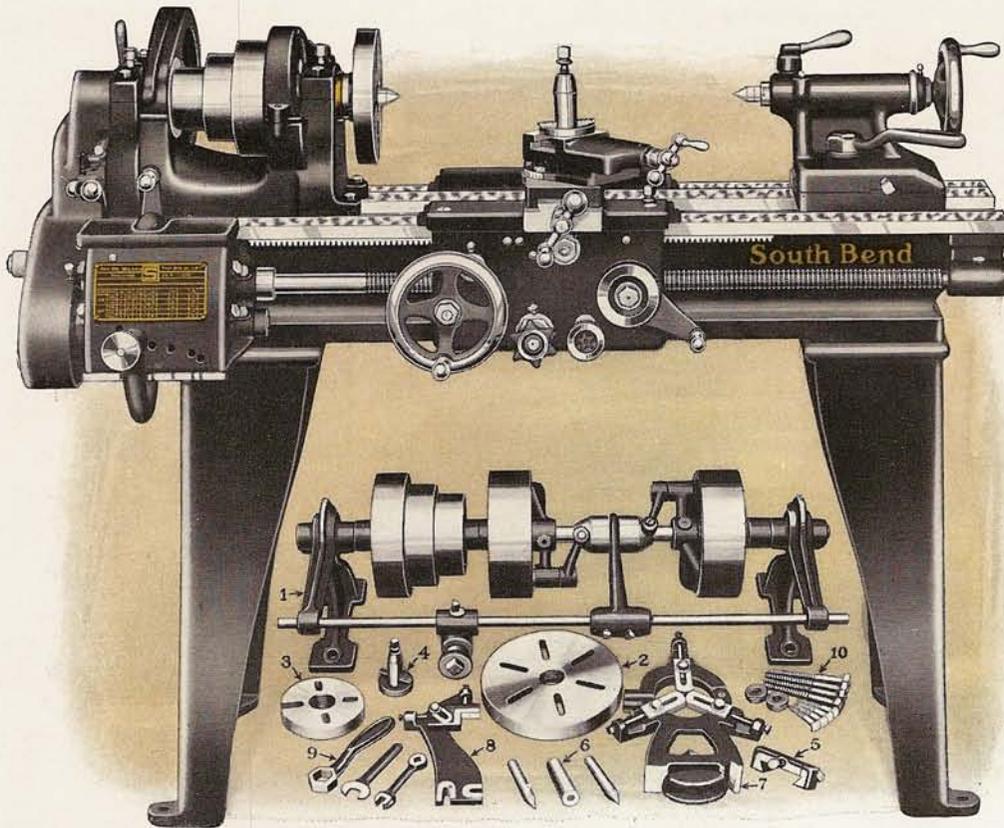


Lathe Features

Back geared headstock gives 6 spindle speeds.
Automatic cross feed, automatic longitudinal feed.
Spring latch reverse for feeds and threads.
Phosphor bronze bearings for headstock spindle.
Graduated compound rest swivels to any angle.
Tailstock is arranged for set-over for taper turning.
Graduated collar on cross feed and compound rest screw.
Precision lead screw for cutting accurate threads.
Graduated tailstock spindle.
Felt wipers to oil and clean bed "V" ways.
Automatic safety interlock in apron.
Improved binding lever for tailstock spindle.
Improved double friction countershaft.
Adjustable thread cutting stop for regulating cut.
Spindle thrust collar hardened and ground.
Quick acting bull gear clamp.

Lathe Specifications

Swing over bed	9 1/4 in.
Swing over carriage	6 5/8 in.
Hole through spindle	3/4 in.
Spindle speeds	40, 75, 128, 246, 410, 700 R.P.M.
Countershaft speed	300 R.P.M.
Countershaft friction clutch pulleys	6 7/8 in. x 2 1/8 in.
Width of cone pulley belt	1 1/4 in.
Size of spindle nose	1 1/2 in. diam., 8 threads
Head and tail spindle centers	No. 2 Morse taper
Collet capacity	1/8 in. to 1/2 in.
Lead screw acme thread	8 threads per inch
Angular travel of compound rest top	1 7/8 in.
Travel of tailstock spindle	2 1/4 in.
Tool cross travel	7 1/4 in.
Size of motor required	1/4 H.P.
Size of lathe tool shank	1 1/8 in. x 1 1/8 in.
Size of turning tool cutter bits	1/4 in. x 1/4 in.



Regular equipment, as illustrated under Lathe, is included in price of Lathe

9-inch Quick Change Gear New Model South Bend Precision Lathe Back Geared, Screw Cutting Lathe, Countershaft Drive

The New Model 9-inch South Bend Quick Change Back Geared Screw Cutting Lathe is designed for the machining of metal. It is recommended for use in the Manufacturing Plant for rapid production work, for the Tool Room because of its accuracy, and for the Machine Shop because its power and rigidity enable it to handle a wide variety of general machine work that comes up in the modern shop.

The 9-inch New Model Lathe is a popular size especially in the three-foot and four and one-half-foot bed lengths. It can be fitted with various chucks, tools, and attachments which are illustrated and described on pages 16, 17 and 18.

The Headstock, Tailstock, Carriage, Lead Screw and other features and specifications for this lathe are illustrated and described on pages 2, 3, 14 and 15. The description applies to all types of 9-inch lathes shown in this bulletin, because they are built from identical units.

The New Model Double Friction Countershaft is simple, practical and powerful. All parts are balanced for operation at high speeds. The two friction pulleys are equipped with rim grip expansion clutches. Oil Reservoirs equipped with large felt wicks, distribute oil for lubricating hubs of clutch pulleys and countershaft bearings.

The Regular Equipment included with each 9-inch Quick Change Gear Lathe consists of: Double Friction Countershaft, Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Cen-

ters and Spindle Sleeve, Center Rest, Follower Rest and Wrenches, also Installation Plans, Floor Plans, and book, "How to Run a Lathe."

The Quick Change Gear for cutting right or left 2 to 112 per inch with and also provides for a wide range of automatic cross and longitudinal feeds. The index plate shows the arrangement for cutting the following threads: 2, 2¼, 2½, 2¾, 2⅞, 3, 3¼, 3½, 4, 4½, 5, 5½, 5¾, 6, 6½, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88,

Box provides 48 changes hand screw threads from out removing a gear

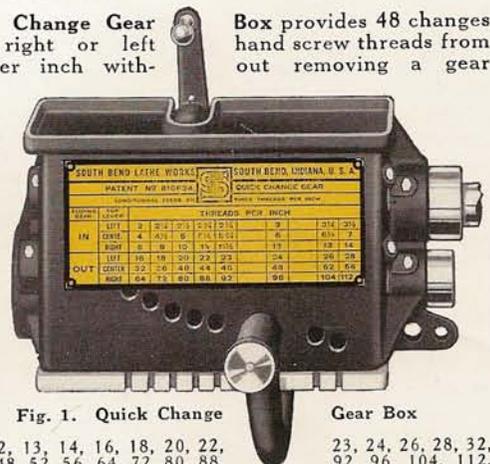


Fig. 1. Quick Change

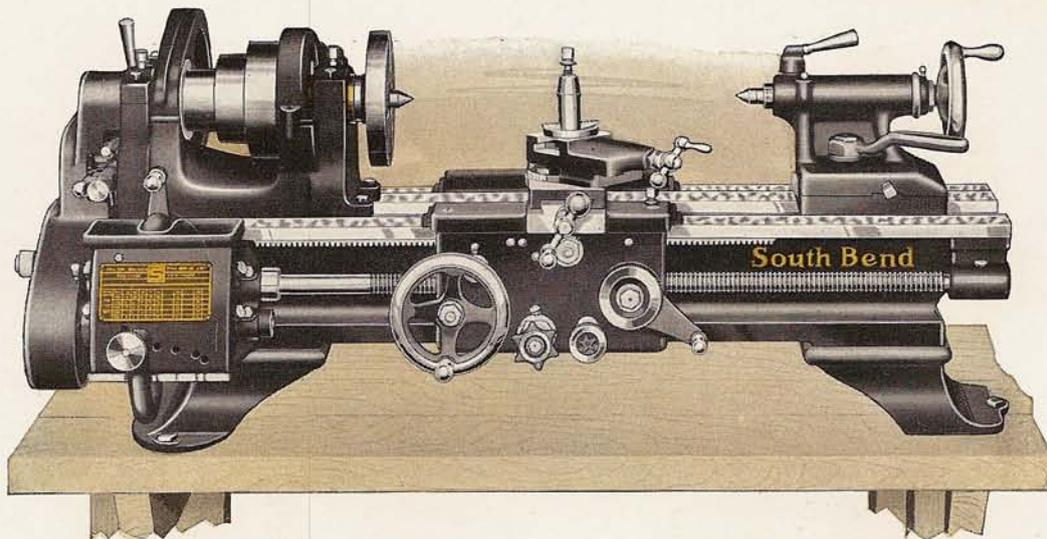
Gear Box

23, 24, 26, 28, 32, 92, 96, 104, 112.

Metric Screw Threads can be cut on the lathe when equipped with Metric Transposing Gear Attachment or when fitted with a Metric Lead Screw as described on page 18.

Net Factory Prices 9-inch Quick Change Gear Lathe Including Overhead Countershaft and Equipment

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Hole Thru Spindle	Swing Over Carriage	Power Required	Weight Crated	Code Word	Net Factory Prices
80-X	9¼ in.	2½ ft.	10¼ in.	¾ in.	6¾ in.	¼ H.P.	470 lbs.	Bafol	\$288.00
80-Y	9¼ in.	3 ft.	17¼ in.	¾ in.	6¾ in.	¼ H.P.	490 lbs.	Bafum	294.00
80-Z	9¼ in.	3½ ft.	22¼ in.	¾ in.	6¾ in.	¼ H.P.	510 lbs.	Bafyn	300.00
80-A	9¼ in.	4 ft.	28¼ in.	¾ in.	6¾ in.	¼ H.P.	530 lbs.	Bagaj	307.00
80-R	9¼ in.	4½ ft.	35¼ in.	¾ in.	6¾ in.	¼ H.P.	550 lbs.	Bagek	315.00



9-inch Quick Change Gear New Model South Bend Precision Lathe

Back Geared, Screw Cutting Lathe, Countershaft Drive, Bench Type

The New Model 9-inch South Bend Quick Change Back Geared Screw Cutting Bench Lathe shown above is an excellent tool for light work in the manufacturing plant and for the large scale production of small metal parts. It has precision and accuracy for fine tool work. Bench lathes of this type are often arranged in groups on a bench and handled by one operator.

The 9-inch Bench Lathe is a popular size especially in the three-foot and four and one-half foot bed lengths. It can be fitted with various chucks, tools and attachments, which are illustrated and described on pages 16, 17 and 18 of this bulletin.

The Headstock, Tailstock, Carriage, Lead Screw and other features and specifications for this lathe are illustrated and described on pages 2, 3, 14 and 15. The description applies to all types of 9-inch lathes shown in this bulletin, because they are built from identical units.

The Quick Change Gear Box provides 48 changes for cutting right or left hand screw threads from 2 to 112 per inch without removing a gear and also provides for a wide range of automatic cross and longitudinal feeds. The index plate shows the arrangement for cutting the following threads: 2, 2 1/4, 2 1/2, 2 3/4, 2 7/8, 3, 3 1/4, 3 1/2, 4, 4 1/2, 5, 5 1/2, 5 3/4, 6, 6 1/2, 7, 8, 9, 10, 11, 11 1/2, 12, 13, 14, 16, 18, 20, 22, 23, 24, 26, 28, 30, 32, 34, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112.

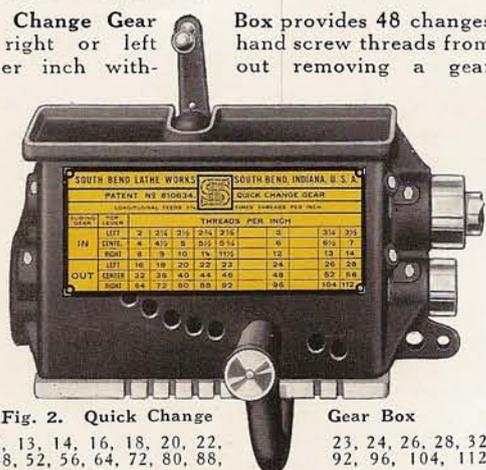
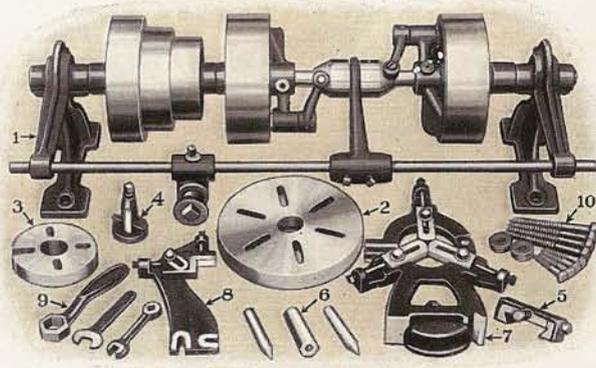


Fig. 2. Quick Change Gear Box

Metric Screw Threads can be cut on the lathe when equipped with Metric Transposing Gear Attachment or when fitted with a Metric Lead Screw as described on page 18.

The Regular Equipment included with each 9-inch Quick Change Gear Bench Lathe consists of: Double Friction Countershaft, Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Centers and Spindle Sleeve, Center Rest, Follower Rest and Wrenches, also Installation Plans, Floor Plans, and book, "How to Run a Lathe." See page 19.



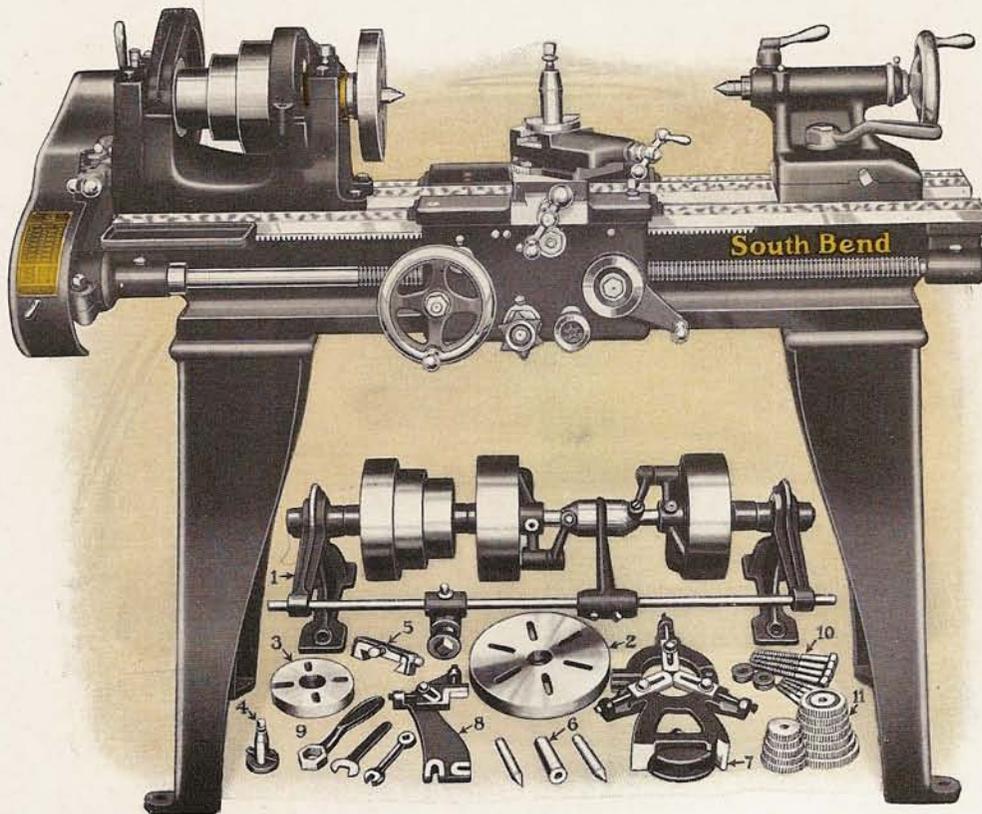
Countershaft and Equipment Illustrated Above Is Included in the Price of the Lathe

The New Model Double Friction Countershaft is simple, practical and powerful. All parts are balanced for operation at high speeds. The two friction pulleys are equipped with rim grip expansion clutches. Oil Reservoirs equipped with large felt wicks, distribute oil for lubricating hubs of clutch pulleys and countershaft bearings. See page 19.

Net Factory Prices 9-inch Quick Change Gear Bench Lathe Including Overhead Countershaft and Equipment*

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Hole Thru Spindle	Swing Over Carriage	Power Required	Weight Crated	Code Word	Net Factory Prices
80-XB	9 1/4 in.	2 1/2 ft.	10 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	405 lbs.	Bahak	\$278.00
80-YB	9 1/4 in.	3 ft.	17 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	425 lbs.	Bagup	284.00
80-ZB	9 1/4 in.	3 1/2 ft.	22 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	445 lbs.	Bahel	290.00
80-AB	9 1/4 in.	4 ft.	28 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	465 lbs.	Bahon	297.00
80-RB	9 1/4 in.	4 1/2 ft.	35 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	490 lbs.	Bahup	305.00

*The Bench is not included in price of Lathe. See page 17 for Bench prices.



Regular equipment, as illustrated under Lathe, is included in price of Lathe

9-inch Standard Change Gear New Model South Bend Precision Lathe Back Geared, Screw Cutting Lathe, Countershaft Drive

The New Model 9-inch South Bend Standard Change Back Geared Screw Cutting Lathe is similar in every detail to the 9-inch Quick Change Gear Lathe shown on page 4, except that the Standard Change Gear Lathe is equipped with Independent Change Gears for cutting screw threads and for operating the automatic feeds, whereas the Quick Change Gear Lathe is equipped with a gear box.

The Standard Change Gear Lathe is practical for use on simple production work where very few gear changes are necessary and where there is very little demand for the cutting of screw threads. Various chucks, tools and attachments which are illustrated and described on pages 16 to 18 of this bulletin can be fitted to this lathe to equip it for production work.

Features and Specifications of the 9-inch Standard Change Gear Lathe are identical with those of the 9-inch Quick Change Gear Lathe shown on pages 2, 3, 4, 14 and 15, except this lathe is equipped with Independent Change Gears instead of the Quick Change Gear Box.

The New Model Double Friction Countershaft is simple, practical and powerful. All parts are balanced for operating at high speed. It may be arranged as a two speed countershaft by using a pulley of large diameter on the line shaft regularly used for the reverse. This arrangement gives six higher speeds to the lathe spindle for machining brass, bronze, aluminum, etc., in production work.

The Regular Equipment included with each 9-inch Standard Change Gear Lathe consists of: Double Friction Countershaft, Set of Independent Change Gears, Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Centers and Spindle Sleeve, Center Rest, Follower Rest and Wrenches, also Installation Plans, Floor Plans, and book, "How to Run a Lathe."

A Set of Independent Change Gears is furnished with the 9-inch New Model Standard Change Gear Lathe for thread cutting and for the automatic feeds. A metal index plate, illustrated at the right, is attached to the lathe and shows the proper change gears to use for cutting the following standard screw threads per inch, right or left hand, including 1 1/2 pipe thread: 4, 5, 6, 7, 8, 9, 10, 11, 11 1/2, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. Threads other than the ones enumerated can be cut by compounding the gears furnished with the lathe. A swinging gear guard permits easy access to these gears.

Special Change Gears for cutting threads not shown on the index plate may be obtained for the lathe. Prices on application.

Metric Screw Threads can be cut on the lathe when equipped with Metric Transposing Gear Attachment or when fitted with a Metric Lead Screw as described on page 18.

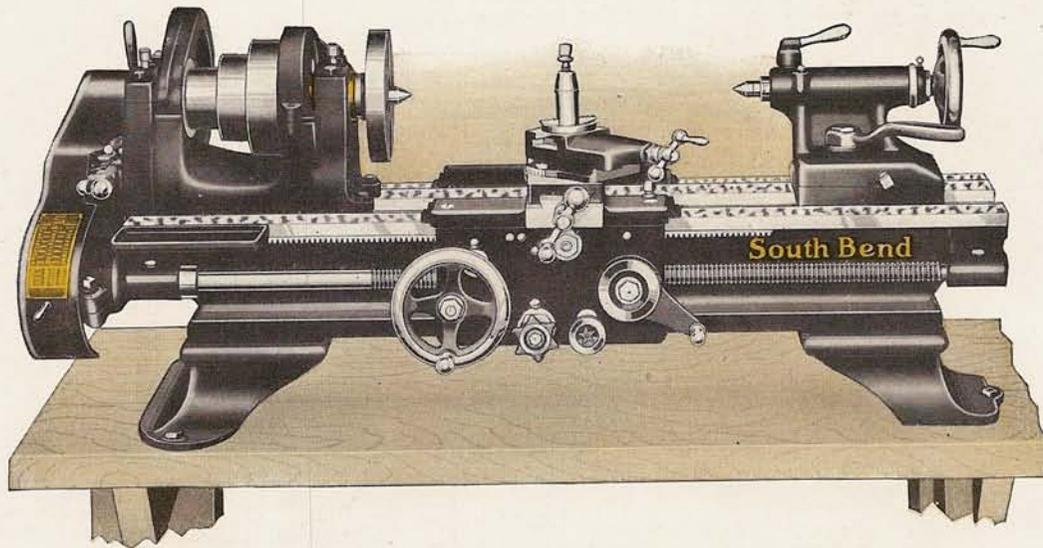
THREAD	5/80	SOLOW
4	64	32
5	64	40
6	64	48
7	64	56
8	32	32
9	64	72
10	32	40
11	32	44
11 1/2	32	46
12	32	48
13	32	52
14	32	56
16	32	64
18	32	72
20	32	80
22	16	44
24	16	48
26	16	52
28	16	56
30	16	60
32	16	64
36	16	72
40	16	80

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SOUTH BEND, IND. U.S.A.

Fig. 3. Index Plate for Standard Change Gear Lathes.

Net Factory Prices 9-inch Standard Change Gear Lathe Including Overhead Countershaft and Equipment

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Hole Thru Spindle	Swing Over Carriage	Power Required	Weight Crated	Code Word	Net Factory Prices
30-X	9 1/4 in.	2 1/2 ft.	10 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	460 lbs.	Bajal	\$243.00
30-Y	9 1/4 in.	3 ft.	17 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	480 lbs.	Bajem	249.00
30-Z	9 1/4 in.	3 1/2 ft.	22 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	500 lbs.	Bajyr	255.00
30-A	9 1/4 in.	4 ft.	28 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	520 lbs.	Bakam	262.00
30-R	9 1/4 in.	4 1/2 ft.	35 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	540 lbs.	Baken	270.00



9-inch Standard Change Gear New Model South Bend Precision Lathe Back Geared, Screw Cutting Lathe, Countershaft Drive, Bench Type

The New Model 9-inch South Bend Standard Change Back Geared Screw Cutting Bench Lathe is similar in every detail to the 9-inch Quick Change Gear Bench Lathe shown on page 5, except that the Standard Change Gear Lathe is equipped with Independent Change Gears for cutting screw threads and for operating the automatic feeds, whereas the Quick Change Gear Lathe is equipped with a gear box.

The Standard Change Gear Lathe is practical for use on simple production work where very few gear changes are necessary and where there is very little demand for the cutting of screw threads. Various chucks, tools and attachments which are illustrated and described on pages 16, 17 and 18 of this bulletin can be fitted to this lathe to equip it for production work.

A Set of Independent Change Gears is furnished with the 9-inch New Model Standard Change Gear Bench Lathe for thread cutting and for the automatic feeds. A metal index plate, illustrated at the right, is attached to the lathe and shows the proper change gears to use for cutting the following standard screw threads per inch, right or left hand, including 1 1/2 pipe thread: 4, 5, 6, 7, 8, 9, 10, 11, 11 1/2, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. Threads other than the ones enumerated can be cut by compounding the gears furnished with the lathe. A swinging gear guard permits easy access to these gears.

Special Change Gears for cutting threads not shown on the index plate may be obtained for the lathe. Prices on application.

Features and Specifications of the 9-inch Standard Change Gear Bench Lathe are identical with those of the 9-inch Standard Change Gear Lathe, Floor Leg Type shown on page 6, except this lathe has bench legs instead of floor legs.

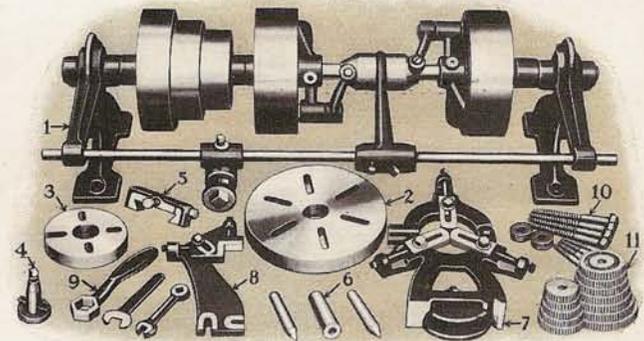
THREAD	9-11	57.0	SO. W.
4	64	32	
5	64	40	
6	64	48	
7	64	56	
8	32	32	
9	64	40	
10	32	40	
11	32	44	
11 1/2	32	46	
12	32	48	
13	32	52	
14	32	56	
16	32	64	
18	32	72	
20	32	80	
22	16	44	
24	16	48	
26	16	52	
28	16	56	
30	16	60	
32	16	64	
36	16	72	
40	16	80	

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Fig. 4. Index Plate for Standard Change Gear Lathes

Metric Screw Threads can be cut on the lathe when equipped with Metric Transposing Gear Attachment or when fitted with a Metric Lead Screw as described on page 18.

The Regular Equipment included with each 9-inch Standard Change Gear Bench Lathe consists of: Double Friction Countershaft, Set of Independent Change Gears, Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Centers and Spindle Sleeve, Center Rest, Follower Rest and Wrenches. Also Installation Plans, Floor Plans, and book, "How to Run a Lathe." For illustration and description see page 19.



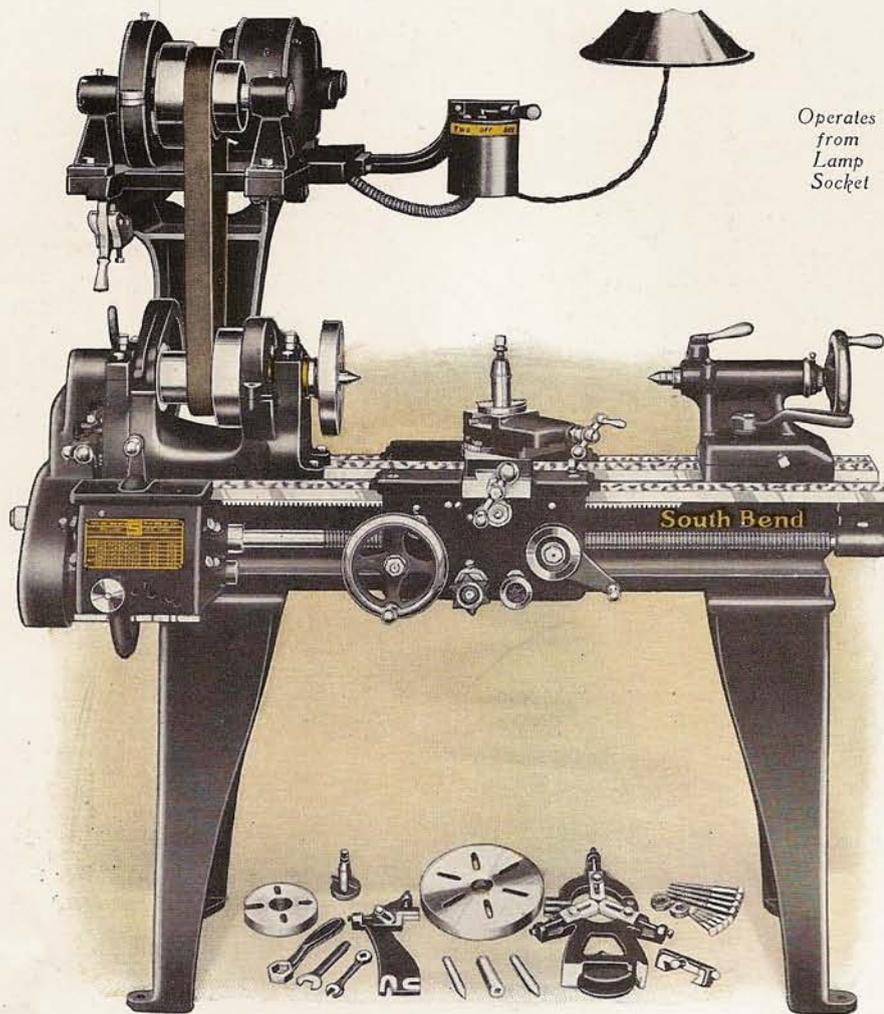
Countershaft and Equipment Illustrated Above is Included in the Price of the Lathe

The New Model Double Friction Countershaft is simple, practical and powerful. All parts are balanced for operating at high speed. It may be arranged as a two-speed countershaft by using a pulley of large diameter on the line shaft regularly used for the reverse. This arrangement gives six higher speeds to the lathe spindle for machining brass, bronze, aluminum, etc., in production work.

Net Factory Prices 9-inch Standard Change Gear Bench Lathe Including Overhead Countershaft and Equipment*

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Hole Thru Spindle	Swing Over Carriage	Power Required	Weight Crated	Code Word	Net Factory Prices
30-XB	9 1/4 in.	2 1/2 ft.	10 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	395 lbs.	Bakip	\$233.00
30-YB	9 1/4 in.	3 ft.	17 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	415 lbs.	Bakur	239.00
30-ZB	9 1/4 in.	3 1/2 ft.	22 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	435 lbs.	Bakys	245.00
30-AB	9 1/4 in.	4 ft.	28 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	455 lbs.	Balan	252.00
30-RB	9 1/4 in.	4 1/2 ft.	35 1/4 in.	3/4 in.	6 3/8 in.	1/4 H.P.	480 lbs.	Balep	260.00

*The Bench is not included in price of Lathe. See page 17 for Bench prices.



Operates
from
Lamp
Socket

Lathe equipment shown above, Reversing Motor and Reversing Switch are included in price of lathe

9-inch New Model Silent Chain Motor Driven Precision Lathe

Back Geared Screw Cutting Lathe, Quick Change and Standard Change Gear Types

The 9-inch New Model South Bend Silent Chain Motor Driven Lathe is efficient and practical for use in the Manufacturing Plant, Tool Room and General Machine Shop. The lathe is a complete unit requiring no extra driving equipment of any kind. It occupies only the same amount of floor space as the regular countershaft driven lathe and is ready to operate as soon as it is connected to the electric current.

Motor Drive for All Types. All types of 9-inch New Model South Bend Lathes can be supplied with the Silent Chain Motor Drive in either Quick Change Gear or Standard Change Gear types. The same features, specifications and descriptions applying to the Countershaft Driven Lathes shown on pages 4 and 6 also apply to the Silent Chain Motor Driven Lathes. See also pages 2, 3, 14 and 15.

Electrical Equipment Included in the Price of all 9-inch Motor Driven Lathes, both Quick Change Gear and Standard Change Gear types, with either bench or floor legs, consists of a 1200 R.P.M. Reversing Motor (Westinghouse, General Electric, or equal make), Reversing Switch (Drum Type), Wiring between Motor and Switch, Flexible Metal Conduit, Wiring Diagram, and Leather Belt.

The Regular Lathe Equipment included in the price of all 9-inch New Model South Bend Motor Driven Lathes, consists of: Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Centers and Spindle Sleeve, Center Rest, Follower Rest, Wrenches, and a set of Independent Change Gears with Standard Change Gear Lathe, also Installation Plans, Floor Plans, and book, "How to Run a Lathe."

Net Factory Prices 9-inch New Model South Bend Silent Chain Motor Driven Lathes

Prices Include Lathe Equipment, Reversing Motor, Reversing Switch and Leather Belt

Specifications					Quick Change Gear Lathes					Standard Change Gear Lathes				
Swing Over Bed	Length of Bed	Distance Between Centers	Size of Motor	Approx. Weight Crated	Cat. No. of Lathe	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor	Cat. No. of Lathe	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor
9 1/4 in.	2 1/2 ft.	10 1/4 in.	1/4 H.P.	670 lbs.	380-X	Balus	\$369.00	\$384.00	\$377.00	330-X	Bapit	\$324.00	\$339.00	\$332.00
9 1/4 in.	3 ft.	17 1/4 in.	1/4 H.P.	690 lbs.	380-Y	Bamap	378.00	393.00	386.00	330-Y	Bapov	333.00	348.00	341.00
9 1/4 in.	3 1/2 ft.	22 1/4 in.	1/4 H.P.	710 lbs.	380-Z	Bamut	384.00	399.00	392.00	330-Z	Barev	339.00	354.00	347.00
9 1/4 in.	4 ft.	28 1/4 in.	1/4 H.P.	730 lbs.	380-A	Bapar	391.00	406.00	399.00	330-A	Baroy	346.00	361.00	354.00
9 1/4 in.	4 1/2 ft.	35 1/4 in.	1/4 H.P.	750 lbs.	380-R	Banuv	399.00	414.00	407.00	330-R	Baruz	354.00	369.00	362.00

For prices and description of 9-inch Motor Driven Bench Lathes see pages 10 and 11.

NOTE: New prices shown above are approximately 5% lower than old.

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Description of Silent Chain Motor Drive Unit

of 9-inch New Model Silent Chain Motor Driven Lathes

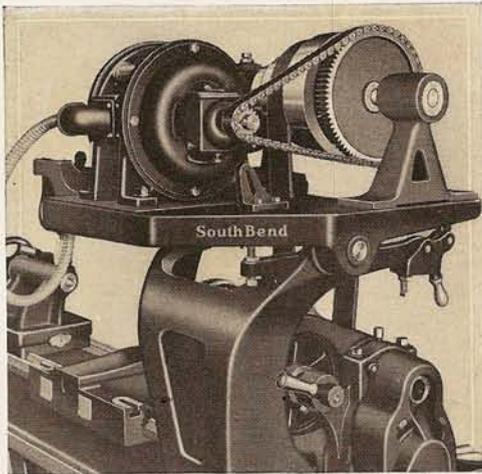


Fig. 5. Silent Chain Mechanism with Gear Guard Removed Showing How the Motor Drives the Spindle Cone

The Method of Driving the Silent Chain Motor Driven Lathe accounts for its remarkable success. This drive is the ideal electric drive for the screw cutting lathe, as it is powerful and eliminates vibration and noise. Power is delivered from the motor through the Silent Chain and then by belt to the lathe spindle. This means that the turning tool will always leave a smooth, even surface on the work.

The Motor Table which supports the motor and driving cone is held by a heavy bracket mounted directly on the lathe bed. A small lever convenient to the operator allows the motor table to tilt forward and relieve the belt tension for easy shifting. An independent adjustment is provided for taking up the stretch in belt.

The Reversing Motor is mounted above the lathe on the tilting table and balanced, where it is free from dirt and chips. A flexible metal conduit encases wiring from motor to switch and meets the requirements of Underwriter's specifications. The linked silent chain which connects the motor with the upper cone is provided with a felt wick oiler and is entirely enclosed by an improved gear guard.

Electric Motors for the 9-inch Motor Drive Lathe should be fitted to the lathe at our factory so that the unit may be properly operated and tested before shipment. A complete stock of reversing motors is carried at our plant so that prompt delivery can be made. When customers wish to supply their own motors an extra charge will be made for fitting the motor to the lathe.

For illustration and description of 9-inch Motor Driven Bench Lathes see pages 10 and 11 of this bulletin.

Information on Ordering Motor Driven Lathes

When Ordering a 9-inch Motor Driven Lathe, any type, give the following information regarding the electric current to be used, so that the proper style and type of reversing motor can be fitted to the lathe:

- If Alternating Current state exact voltage, phase, cycle, and number of wires.
- If Direct Current state exact voltage only.

When giving voltage state whether 110 volt motor or 220 volt motor is wanted. Do not specify 110-220 volt motor as we cannot furnish motors for double voltage rating.

You Can Secure your current specifications from the electric power company furnishing your current.

Reversing Switch

The Drum Type Reversing Control Switch is the most practical for the efficient operation of a screw cutting lathe. The lever operates in a rotary motion, left for starting, center for stopping and right for reversing the lathe spindle and lead screw. This switch is included in the price of all types of 9-inch Motor Driven South Bend Lathes.

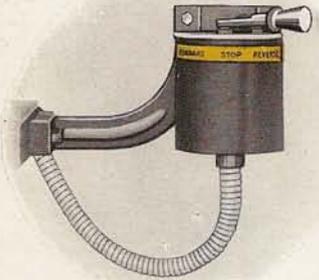


Fig. 6. Reversing Switch (Drum Type)

Each 9-inch Motor Driven Lathe is Tested before shipping. We connect the motor and switch, test and inspect the wiring, then operate and inspect the lathe under its own power.

Reversing Motors of odd current, such as 25 cycle, 30 cycle, 40 cycle, 50 cycle, A. C., and 32-volt D. C., motors are not carried in stock, but can be secured on short notice. Push button control, using magnetic reversing switches instead of the drum type switch can be furnished at extra cost. However, we recommend the drum type reversing switch for use on all South Bend Motor Driven Lathes.

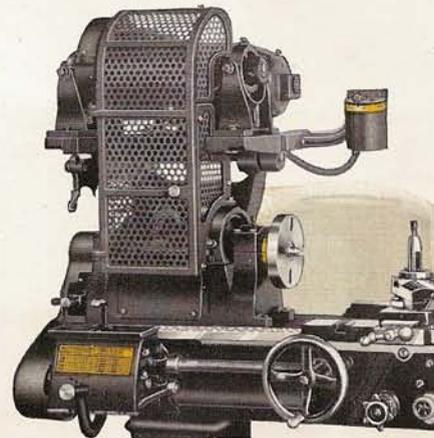


Fig. 7. Belt Guard for Silent Chain Motor Drive

The Special Belt Guard shown above can be furnished on all 9-inch Silent Chain Motor Driven Lathes as additional equipment. The guard completely covers the driving cone, belting and spindle cone.

Catalog No. 590. Code Word "Kelat." Price \$12.00.

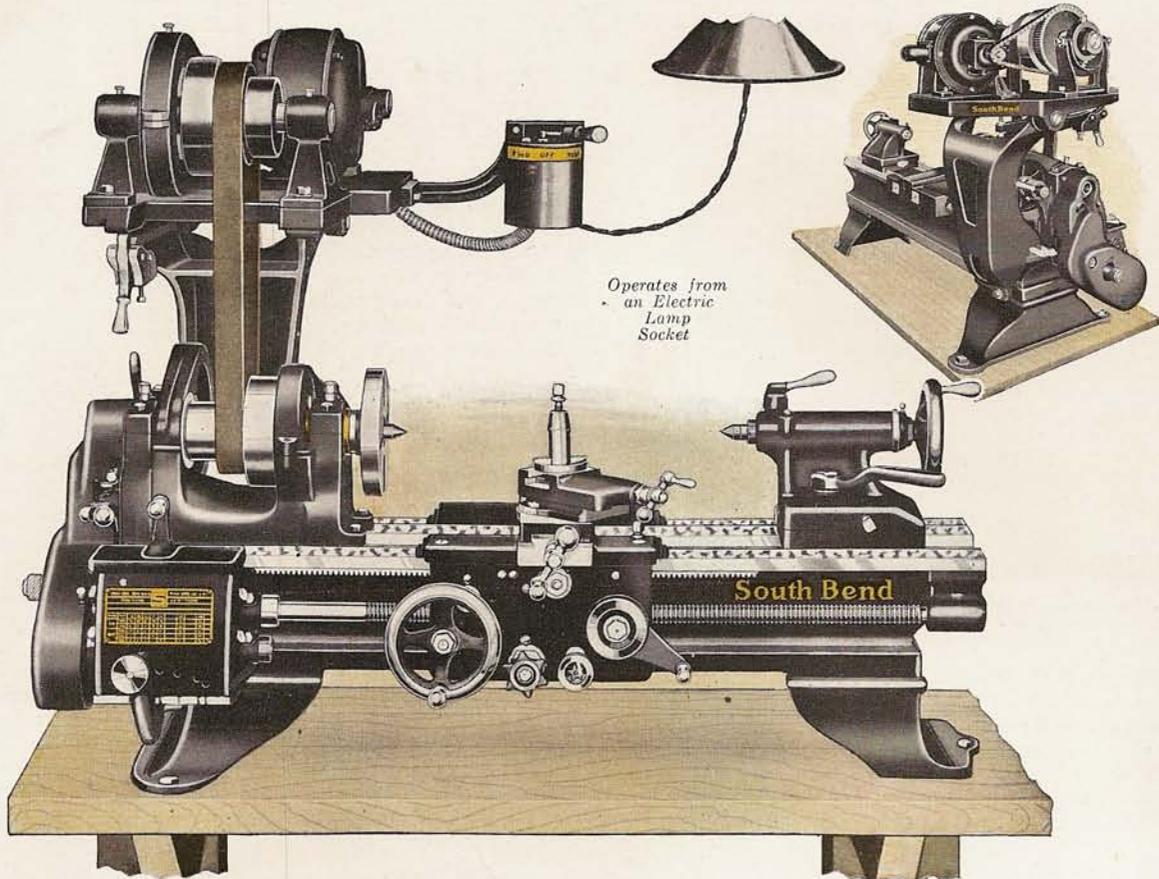
Code Words. When ordering motor driven lathes by telegram or cablegram use code words shown below. If your motor specifications differ from those that we list, give exact voltage, phase and cycle when placing your order by telegram or cablegram.

Code Word

Zapin
Zbras
Zingo
Zompe
Zurik
Zuwel

Current Specifications

1-phase, 60 cycle, 110-volt, A. C. Motor
1-phase, 60 cycle, 220-volt, A. C. Motor
3-phase, 60 cycle, 110-volt, A. C. Motor
3-phase, 60 cycle, 220-volt, A. C. Motor
115-volt D. C. Motor
230-volt D. C. Motor



9-inch New Model Silent Chain Motor Driven Precision Lathe

Quick Change and Standard Change, Back Geared, Screw Cutting Lathes, Bench Type

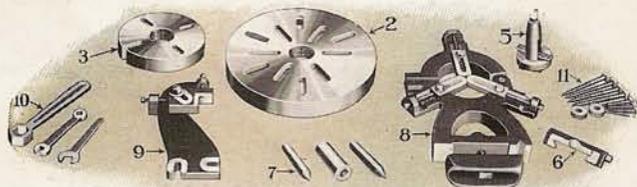
The 9-inch New Model South Bend Silent Chain Motor Driven Bench Lathe is efficient and practical for use in the Manufacturing Plant, Tool Room, and General Machine Shop. The lathe is a complete unit requiring no extra driving equipment of any kind. It occupies only the same amount of floor space as the regular countershaft driven bench lathe and is ready to operate as soon as it is connected to the electric current.

This Lathe is Exactly the Same as the 9-inch Silent Chain Motor Driven Lathe, Floor Leg Type, illustrated and described on page 8. The only difference is that bench legs are substituted for floor legs. The extra wide and heavily constructed bench leg under the headstock end gives ample support to the motor drive unit. End view of lathe showing special leg and drive mechanism is illustrated above.

Electrical Equipment Included in the Price of the 9-inch Silent Chain Motor Driven Bench Lathe, both Quick Change Gear and Standard Change Gear types, consists of a 1/4-H.P. Reversing Motor, 1200 R.P.M. (Westinghouse, General Electric, or equal make), Reversing Switch (Drum Type), Wiring between Motor and Switch, Flexible Metal Conduit, Wiring Diagram, and Leather Belt.

The Regular Lathe Equipment included with each 9-inch New Model South Bend Silent Chain Motor Driven Bench Lathe consists of: Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Centers and Spindle Sleeve, Center Rest, Follower Rest, Wrenches, and a set of Independent Change Gears with Standard Change Gear Lathe. Also Installation Plans, Floor Plans, and book, "How to Run a Lathe."

When Ordering the 9-inch Silent Chain Motor Driven Bench Lathe be sure to give the required information on electric current as specified on page 9.



Equipment Shown Above is Included in Price of Lathe

Net Factory Prices 9-inch New Model South Bend Silent Chain Motor Driven Bench Lathes

Prices Include Lathe Equipment, Reversing Motor, Reversing Switch and Leather Belt*

Swing Over Bed	Length of Bed	Distance Between Centers	Size of Motor	Approx. Weight Crated	Quick Change Gear Motor Driven Lathes			Standard Change Gear Motor Driven Lathes						
					Catalog No. of Lathe	Code Word	With 3 Phase 60 Cycle A.C. Motor	With Single Phase 60 Cycle A.C. Motor	With Direct Current Motor	Catalog No. of Lathe	Code Word	With 3 Phase 60 Cycle A.C. Motor	With Single Phase 60 Cycle A.C. Motor	With Direct Current Motor
9 1/4 in.	2 1/2 ft.	10 1/4 in.	1/4 H.P.	605 lbs.	380-XB	Bawaz	\$362.00	\$377.00	\$370.00	330-XB	Bayab	\$317.00	\$332.00	\$325.00
9 1/4 in.	3 ft.	17 1/4 in.	1/4 H.P.	625 lbs.	380-YB	Baweb	371.00	386.00	379.00	330-YB	Bayee	326.00	341.00	334.00
9 1/4 in.	3 1/2 ft.	22 1/4 in.	1/4 H.P.	645 lbs.	380-ZB	Bawie	377.00	392.00	385.00	330-ZB	Bayid	332.00	347.00	340.00
9 1/4 in.	4 ft.	28 1/4 in.	1/4 H.P.	665 lbs.	380-AB	Bawod	384.00	399.00	392.00	330-AB	Bayof	339.00	354.00	347.00
9 1/4 in.	4 1/2 ft.	35 1/4 in.	1/4 H.P.	690 lbs.	380-RB	Bawuf	392.00	407.00	400.00	330-RB	Bayug	347.00	362.00	355.00

*For price of Bench see page 17. This Lathe can be used on a bench as narrow as 24 inches.
NOTE: Belt Guard for completely covering driving cone, belting and spindle cone. Price \$12.00.

NOTE: New prices shown above are approximately 5% lower than old.

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9-inch Horizontal Motor Driven Lathe

Quick Change and Standard Change Gear Types
Back Geared, Screw Cutting Lathes

The 9-inch New Model South Bend Horizontal Motor Driven Bench Lathe is exactly the same as the Quick Change and Standard Change Gear Bench Lathes illustrated on pages 5 and 7 except that it is equipped with the Horizontal Motor Drive instead of countershaft drive. This improved motor drive is efficient, powerful and noiseless in operation.

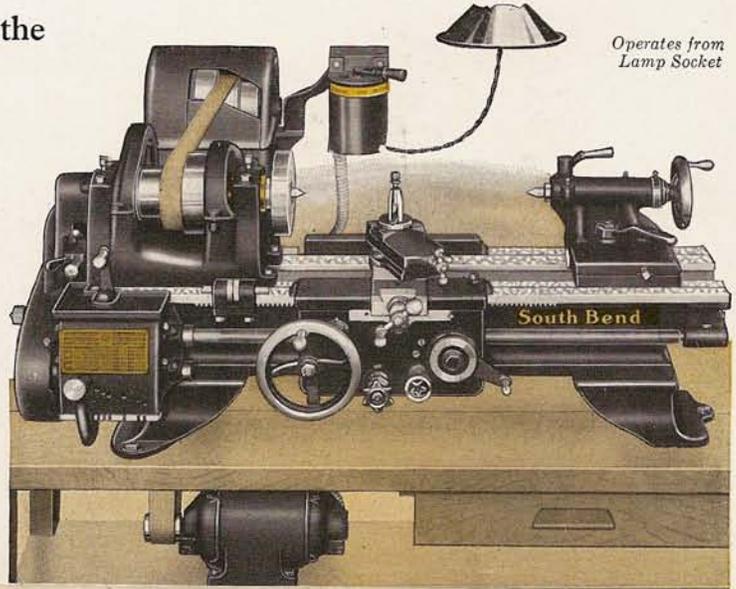
Electrical Equipment included in the price consists of: 1/4-H.P. Constant Speed Reversing Motor, 1200 R.P.M., Reversing Switch (Drum Type), Wiring between motor and switch, Flexible Metal Conduit, Wiring Diagram, two Leather Belts, and Cast Iron Cabinet with Drive Mechanism.

Regular Lathe Equipment included in the price is the same as furnished with the Bench Lathes described on pages 5 and 7, except that the Double Friction Countershaft is omitted.

Belt Guard for covering belting and spindle cone. Price \$12.00.



Phantom View of Drive Unit



Operates from Lamp Socket

Net Factory Prices 9-inch New Model South Bend Horizontal Motor Driven Bench Lathes
Prices Include Lathe Equipment, 1/4-H.P. Reversing Motor, Reversing Switch and Leather Belts, But Not Bench*

Specifications				Quick Change Gear Lathes				Standard Change Gear Lathes					
Swing Over Bed	Length of Bed	Distance Between Centers	Approx. Weight Crated	Cat. No. of Lathe	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor	Cat. No. of Lathe	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor
9 1/4 in.	2 1/2 ft.	10 1/4 in.	490 lbs.	480-X	Bazac	\$318.00	\$333.00	\$326.00	430-X	Bebaj	\$273.00	\$288.00	\$281.00
9 1/4 in.	3 ft.	17 1/4 in.	510 lbs.	480-Y	Bazed	327.00	342.00	335.00	430-Y	Bebek	282.00	297.00	290.00
9 1/4 in.	3 1/2 ft.	22 1/4 in.	530 lbs.	480-Z	Bazif	333.00	348.00	341.00	430-Z	Bebil	288.00	303.00	296.00
9 1/4 in.	4 ft.	28 1/4 in.	550 lbs.	480-A	Bazog	340.00	355.00	348.00	430-A	Bebyp	295.00	310.00	303.00
9 1/4 in.	4 1/2 ft.	35 1/4 in.	575 lbs.	480-R	Bazuh	348.00	363.00	356.00	430-R	Beac	303.00	318.00	311.00

*For Price of Bench see page 17.

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For information on ordering Motor Driven Lathes see page 9.

NOTE: New prices shown above are approximately 5% lower than old.

9-inch Self-Contained Motor Driven Lathe

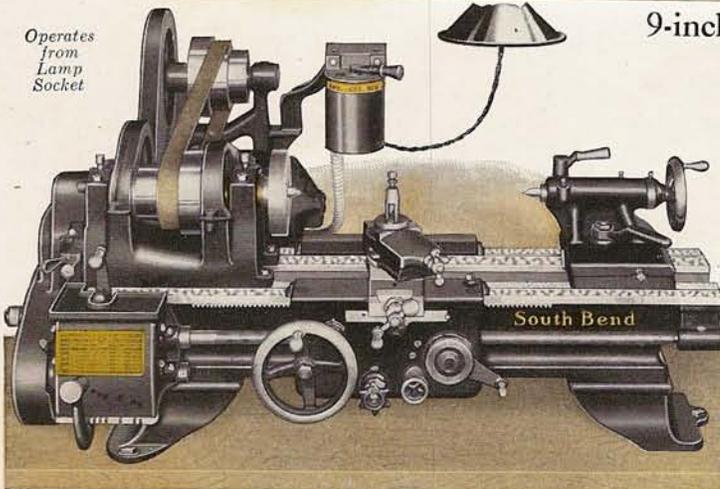
Quick Change and Standard Change Gear Types
Back Geared, Screw Cutting Lathes

The 9-inch New Model Self-Contained Motor Driven Bench Lathe is practical for general light work in the machine shop and for fine precision tool and instrument work. The motor drive unit, illustrated below, is mounted on the bench behind the lathe. Starting, stopping and reversing of the lathe spindle is controlled by a drum type reversing switch.

For Specifications and description of this lathe refer to page 5 as the only difference between the 9-inch Self-Contained Bench Lathe and the Overhead Countershaft Driven Lathe is the form of drive.

Electrical Equipment included in the price of this lathe consists of: 1/4-H.P. Reversing Motor, 1200 R.P.M., Reversing Switch (Drum Type), Wiring between motor and switch, Flexible Metal Conduit, Wiring Diagram and a Leather Belt.

Gear Guard for covering driving cone, spindle cone and belting. Price \$12.00.



Operates from Lamp Socket

Regular Lathe Equipment included in the price of this lathe is the same as furnished with the Countershaft Driven Bench Lathe described on page 5 except that the Double Friction Countershaft is omitted. See page 19.

Attachments. This Lathe may be fitted with all the Attachments that can be used on Floor Leg Lathes such as Draw-in Collet Chuck, Spring Collets, Taper Attachment, Milling Attachment, etc. See pages 16, 17 and 18.

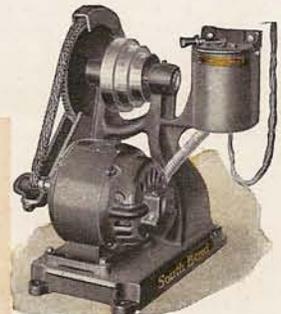
Net Factory Prices 9-inch New Model Self-Contained Motor Driven Bench Lathes
Prices Include Lathe Equipment, 1/4-H.P. Reversing Motor, Reversing Switch and Leather Belt*

Specifications				Quick Change Gear Lathes				Standard Change Gear Lathes					
Swing Over Bed	Length of Bed	Distance Between Centers	Approx. Weight Crated	Cat. No. of Lathe	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor	Cat. No. of Lathe	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor
9 1/4 in.	2 1/2 ft.	10 1/4 in.	490 lbs.	780-X	Bece	\$342.00	\$357.00	\$350.00	730-X	Bedop	\$297.00	\$312.00	\$305.00
9 1/4 in.	3 ft.	17 1/4 in.	520 lbs.	780-Y	Becon	351.00	366.00	359.00	730-Y	Bedyr	306.00	321.00	314.00
9 1/4 in.	3 1/2 ft.	22 1/4 in.	550 lbs.	780-Z	Bepcp	357.00	372.00	365.00	730-Z	Befam	312.00	327.00	320.00
9 1/4 in.	4 ft.	28 1/4 in.	580 lbs.	780-A	Bedal	364.00	379.00	372.00	730-A	Befen	319.00	334.00	327.00
9 1/4 in.	4 1/2 ft.	35 1/4 in.	610 lbs.	780-R	Bedem	372.00	387.00	380.00	730-R	Bedfp	327.00	342.00	335.00

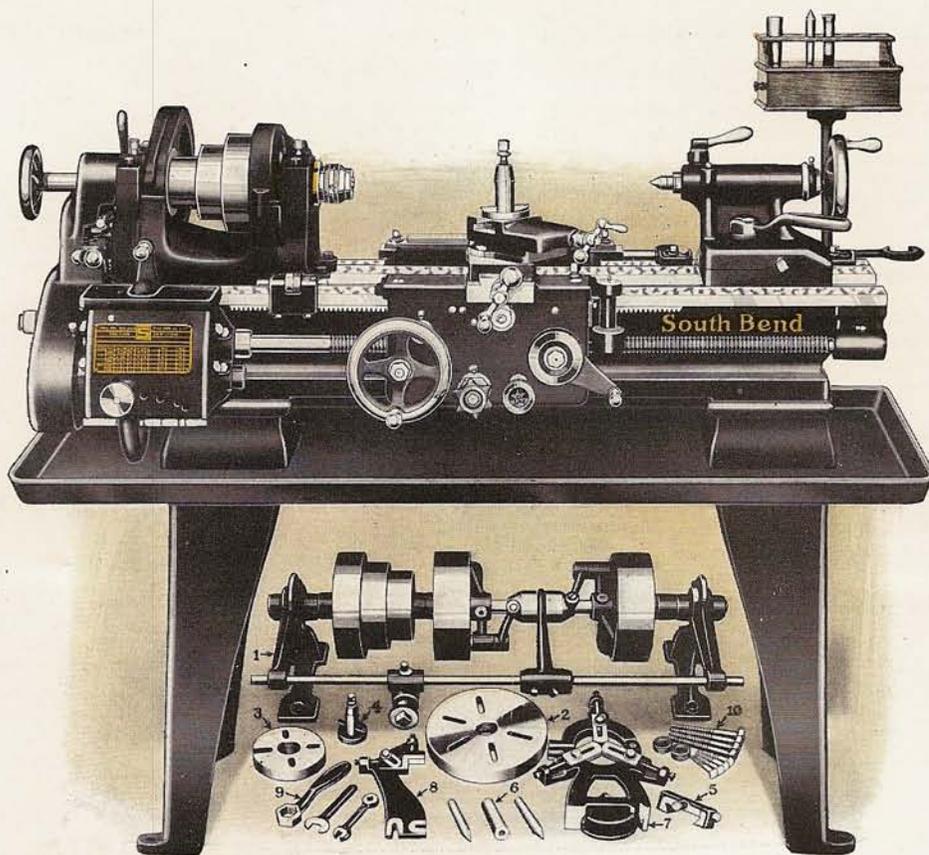
*For Price of Bench see page 17.

For information on ordering Motor Driven Lathes see page 9.

NOTE: New prices shown above are approximately 5% lower than old.



End View of Drive Unit
Part of Gear Guard Removed to Show the Chain



Equipment illustrated under Lathe is included in price of Lathe

9-inch New Model Tool Room Precision Lathe

Made in Countershaft and Silent Chain Motor Drives

The 9-inch New Model Tool Room Precision Lathe is recommended for fine tool work. It is widely used in the tool rooms of many of the largest manufacturing plants in the United States because it is capable of turning out the finest tool work with precision and accuracy. This lathe is practical for making precision taps, master thread gauges, special screws, dies, fixtures and tools to meet the most exacting requirements. It will meet the demands of the expert mechanic on the most accurate work.

For Features, Specifications and detailed description of the 9-inch Tool Room Lathe see pages 2, 3, 14 and 15. The major units of the Tool Room Lathe are identically the same as those of the 9-inch Quick Change Gear Lathe illustrated on page 4. This lathe differs only in that it is fitted with special attachments for tool room work.

Tool Room Attachments. We list and price each attachment separately so that the customer may select only those required for his work. Collet Chucks, Taper Attachment, Thread Dial, Carriage Stop, etc., are illustrated and described on pages 16, 17 and 18.

Regular Lathe Equipment consists of: Double Friction Countershaft (not furnished with Motor Driven Lathes), Large Face Plate, Small Face Plate, Tool Post Complete, Adjustable Thread Cutting Stop, Two Lathe Centers and Spindle Sleeve, Center Rest, Follower Rest and Wrenches. **Electrical Equipment** furnished with Motor Driven Tool Room Lathes is the same as listed on page 8.

Cabinet Legs may be used on the 9-inch Tool Room Lathe instead of the regular legs if desired. For illustration and prices of cabinet legs see page 19.

Net Factory Prices 9-inch New Model South Bend Tool Room Precision Lathes—Countershaft Drive and Motor Drive
Each Attachment Is Priced Individually So That Only Those Needed May Be Selected

Size, Catalog Number and Type of Lathe	COUNTERSHAFT DRIVE LATHE				SILENT CHAIN MOTOR DRIVE LATHE			
	No. 880-Y—9" x 3'		No. 880-A—9" x 4'		Catalog No. 3880-Y—9" x 3'			
9-inch Tool Room Lathe, Countershaft Drive or Motor Drive Types, without Tool Room Attachments	Code Word	Price	Code Word	Price	Code Word	3 Phase 60 Cycle A.C. Motor	1 Phase 60 Cycle A.C. Motor	Direct Current Motor
	Bafum	\$294.00	Bagaj	\$307.00	Bamap	\$378.00	\$393.00	\$386.00
TOOL ROOM ATTACHMENTS								
Hand Wheel Draw-in Collet Chuck with One Collet.....	Aaron	33.00	Aaron	33.00	Aaron	33.00	33.00	33.00
Extra Collets 1/4-inch up to 1/2 inch by 64ths. Each....	Cabot	2.50	Cabot	2.50	Cabot	2.50	2.50	2.50
Taper Attachment	Dashe	50.00	Dashe	50.00	Dashe	50.00	50.00	50.00
Thread Indicator	Abaft	8.00	Abaft	8.00	Abaft	8.00	8.00	8.00
Oil Pan	Oasis	20.00	Oadium	22.00	Oasis	20.00	20.00	20.00
Micrometer Carriage Stop.....	Calef	10.00	Calef	10.00	Calef	10.00	10.00	10.00
Collet Cabinet and Bracket.....	Caged	12.00	Caged	12.00	Caged	12.00	12.00	12.00
Net Factory Prices Lathe and Attachments.....		\$429.50		\$444.50		\$513.50*	\$528.50*	\$521.50*
Code Words for Ordering Lathe and Attachments....		(Bacup)		(Bamoq)		(Bokun)	(Bolix)	(Bumey)

*For Motor Driven Lathe with 4 ft. bed and tool room attachments add \$15.00 to total prices listed above for lathe and attachments.

NOTE: New prices shown above are approximately 5% lower than old.

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The 9-inch New Model South Bend Precision Lathe as a Manufacturing Tool

In the Manufacture of Small Duplicate Parts on a Production Basis

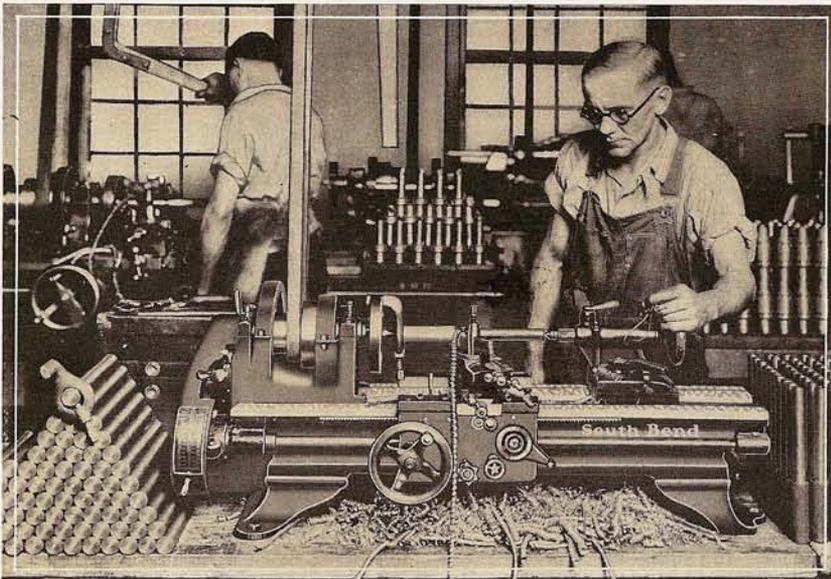


Fig. 25. The 9-inch New Model Lathe on a Production Job in a Manufacturing Plant

The Best Shop Practice is to manufacture small parts on a small lathe tooled to take care of the job because of the speed and accuracy with which operations can be performed. Two or more small lathes are frequently operated on quantity production by one mechanic.

Production Engineers in large manufacturing plants making products such as, sewing machines, typewriters, electrical parts, etc., are using small lathes in the manufacture of small metal parts that require the greatest accuracy because they must be interchangeable. These engineers know from experience that a small screw cutting lathe equipped with special tools is often more economical in production than special machines which can be used for one class of work only.

Many of our large factories have a battery of small back geared screw cutting lathes especially equipped with tools for production of special parts as they find that this type of equipment is far less expensive and more productive on some work than single purpose machines.

9-inch Lathe Equipped for Manufacturing

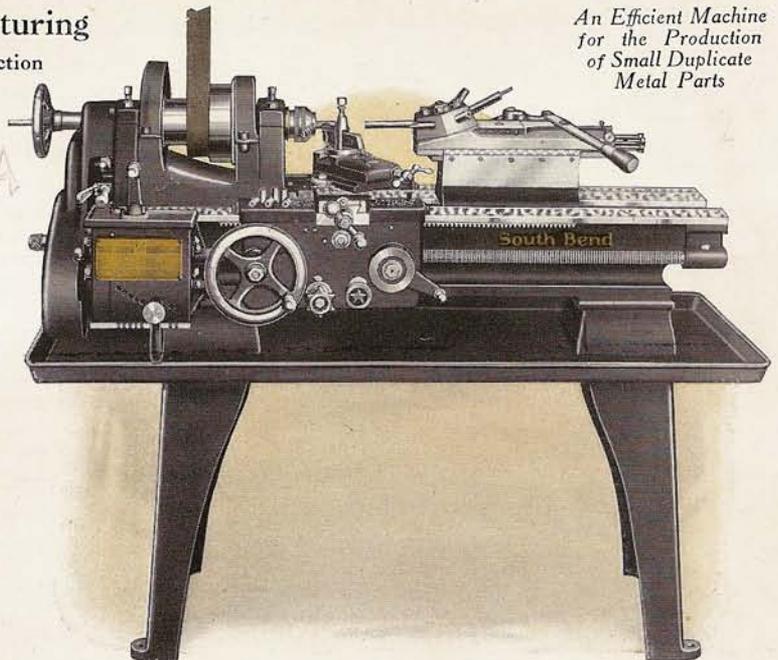
With Special Tools and Attachments for Production

The 9-inch New Model South Bend Back Geared Screw Cutting Lathe can be fitted with a variety of attachments and used to advantage for many manufacturing operations. When equipped in this way the lathe serves the purpose of a special machine. Many modern industrial plants are taking advantage of this fact and are using screw cutting lathes. When the job is finished the tools can be removed and the lathe used for regular lathe work. Some plants are using screw cutting lathes in groups on production work.

The Back Geared Screw Cutting Lathe is a universal tool and can be equipped at a small expense with a set of tools for machining duplicate parts where accuracy and precision are required. There are many jobs where the screw cutting lathe thus equipped will show production on parts equal to that obtained on a special or single purpose machine.

Attachments for Manufacturing

Draw-in Collet Chucks	Thread Indicator
Spring Collets	Automatic Carriage Stop
Taper Attachment	Oil Pan and Pump
Milling Attachment	Electric Grinder
Hand Lever Bed Turret	Lathe Chucks, etc.
Centers, Drill Pads, etc.	Drill Chucks



*An Efficient Machine
for the Production
of Small Duplicate
Metal Parts*

Practical Jobs for 9-inch New Model South Bend Precision Lathes

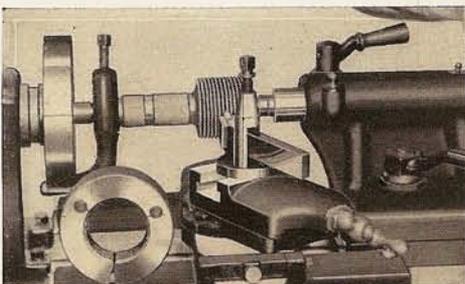


Fig. 26. Cutting the Thread on a Master Screw Thread Gauge

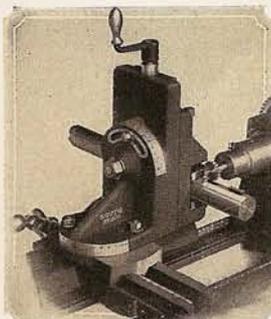


Fig. 27. Milling a Keyway

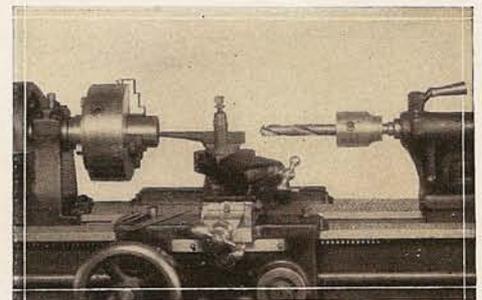


Fig. 28. Drilling and Boring a Bushing in One Chucking

Mechanical Features of the 9-inch New Model Precision Lathe

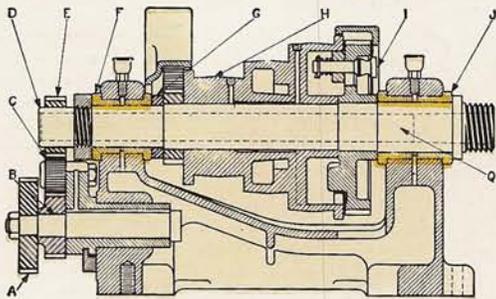


Fig. 8. Cross Section of Headstock

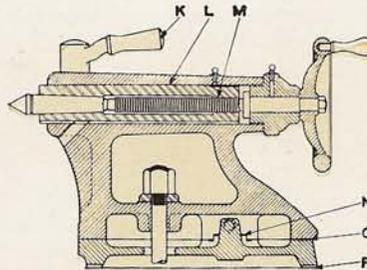


Fig. 9. Cross Section of Tailstock

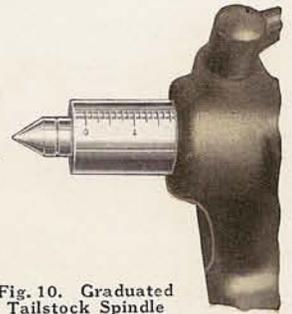


Fig. 10. Graduated Tailstock Spindle

Principal Parts of Headstock and Tailstock

- A—Steel Stud Gear
- B—Extra Long Reverse Shaft
- C—Quick Acting Reverse. All Gears Steel
- D—Hole Through Headstock Spindle
- E—Take-up Nut for End Play
- F—Small Bronze Spindle Bearing
- G—Hardened and Ground Steel Thrust Collar
- H—Balanced Cone Pulley
- I—Wrenchless Bull Gear Clamp

- J—Large Phosphor Bronze Spindle Bearing
- K—Improved Tail Spindle Lock
- L—Special Alloy Steel Tailstock Spindle
- M—Acme Thread Tailstock Screw
- N—Set-over for Taper Turning
- O—Tailstock Top Accurately Hand Scraped to Base
- P—Tailstock Base Hand Scraped to Lathe Bed
- Q—Special Alloy Steel Spindle

Tailstock Spindle

The Tailstock Spindle is graduated which permits the operator to measure the depth of the drill when using a drill chuck in the tail spindle.

Headstock Spindle

The Headstock Spindle of the 9-inch lathe is made of special steel and is finish ground all over. A $\frac{3}{4}$ -inch hole through the spindle permits the machining of rods, bars and tubing.

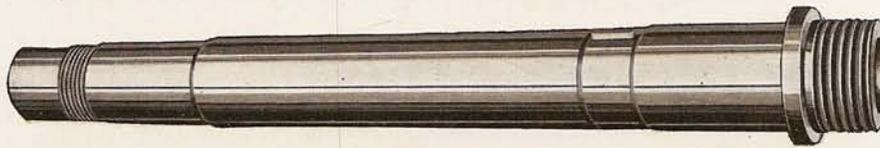


Fig. 11. Hollow Spindle of Carbon Steel, Finish Ground All Over

Phosphor Bronze Bearings

The Phosphor Bronze Bearings, front and rear, for the headstock spindle, are of best quality material. They are hand scraped to a perfect bearing.

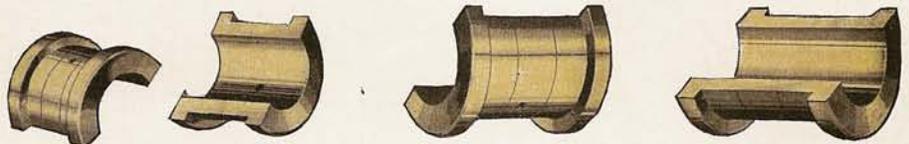


Fig. 12. Hand Scraped Phosphor Bronze Bearings for Spindle

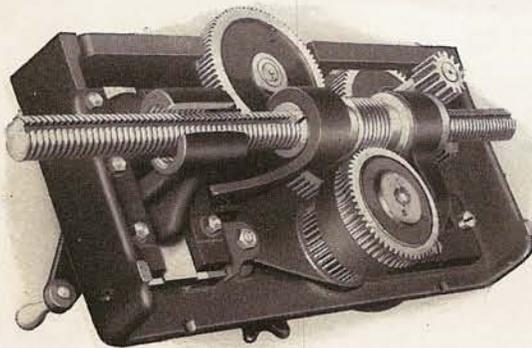


Fig. 13. Interior View of Apron Showing Splined Lead Screw Used as Feed Rod and the Rigid Double Bracket for Supporting the Automatic Feed Worm

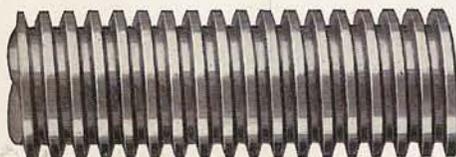


Fig. 14. Section of Lead Screw—Actual Diameter Used on the 9-inch Lathe. It is Guaranteed to Meet the Most Exact Requirements in Cutting Accurate Threads

Safety Device in Apron

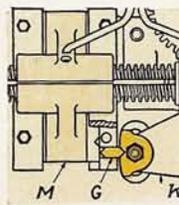


Fig. 15

This safety device prevents the engaging of the automatic feeds and the half nuts with the lead screw at the same time. Fig. 15 shows safety device locked for thread cutting. Fig. 16 shows it locked for automatic feed.

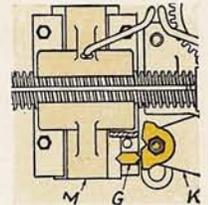


Fig. 16

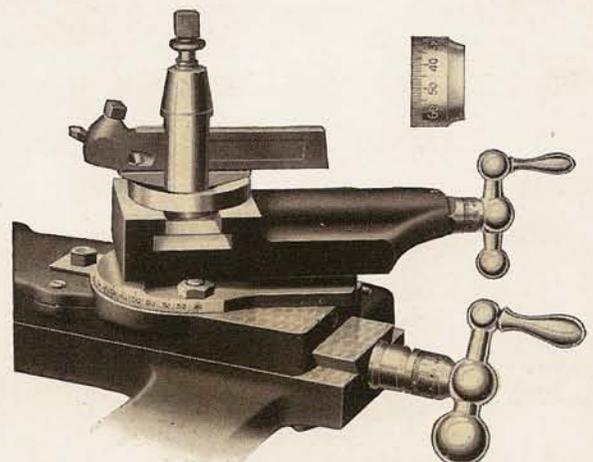


Fig. 17. Compound Rest Showing the Graduated Swivel and Micrometer Graduated Collars

Accuracy of the 9-inch New Model South Bend Precision Lathe

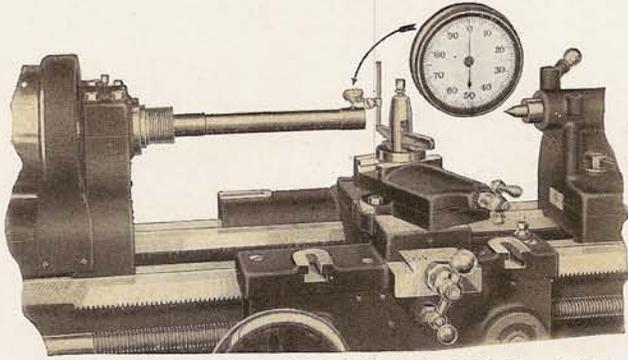


Fig. 18. Testing the Headstock Spindle. The Dial Test Indicator Registers in 1/10,000 of an Inch.

Accuracy Tests

Sixty-four Major Accuracy Tests are made with precision instruments on the various lathe units such as bed, headstock, saddle, apron, etc., after each production operation and before assembling. Constant testing during the process of manufacture insures accuracy and precision in the finished lathe.

Each 9-inch New Model South Bend Lathe, when assembled is operated under belt and thoroughly inspected and tested for accuracy before it is shipped.

All major units of the 9-inch New Model South Bend Lathe, in addition to being machined, are carefully fitted and hand scraped to each other where a sliding fit is necessary.



Fig. 19. Hand Scraping Cross Slide to Bed



Fig. 20. Hand Scraping Phosphor Bronze Bearings for Headstock Spindle

The phosphor bronze bearings for the headstock spindle are hand scraped to fit the spindle. Hand scraping the various units insures accuracy, precision and long life.

Examples of Standard Screw Threads Cut on the 9-inch New Model South Bend Lathe



Thread Gauge



Tap



Thread Gauge



Cutting a Screw Thread



Internal U. S. Standard Thread



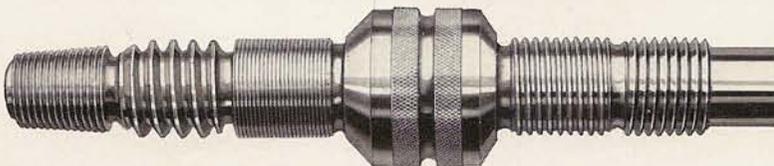
Right Hand Acme Double Screw Thread



U. S. Standard Thread



Right Hand Double Screw Square Thread



Special Screw Showing Various Types of Threads

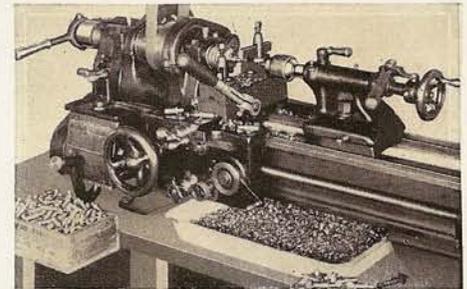


Fig. 35. Production Work with Lever Type Draw-in Chuck, Tailstock and Cross Slide

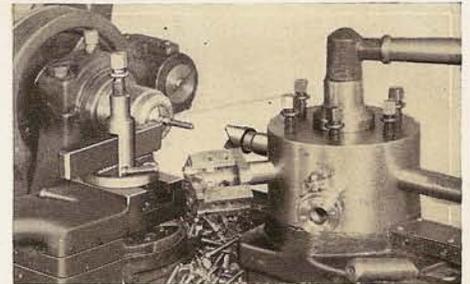


Fig. 36. Draw-in Collet Chuck and Turret for Manufacturing

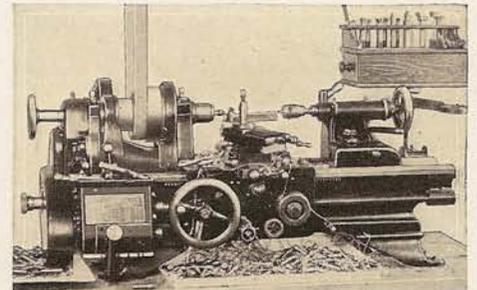


Fig. 37. Manufacturing Small Duplicate Parts on a 9-inch Quick Change Gear Bench Lathe

Draw-in Collet Chuck Attachment for 9-inch Precision Lathes

The Draw-in Collet Chuck is one of the most accurate types of chuck made. The split collet is hardened and ground, inside and outside, and is used in manufacturing small precision parts for watches, typewriters, sewing machines, adding machines, radios, etc. The Draw-in Collet Chuck permits bars and rods to be passed through the lathe spindle and held in the chuck for machining. For manufacturing small parts which require accuracy and precision the Draw-in Collet Chuck is both rapid and economical.

The Hand Wheel Type Draw-in Collet Chuck attachment is used extensively in the tool room in making small tools and parts where accuracy is essential. It is a fine precision tool and the most accurate type of chuck on the market.

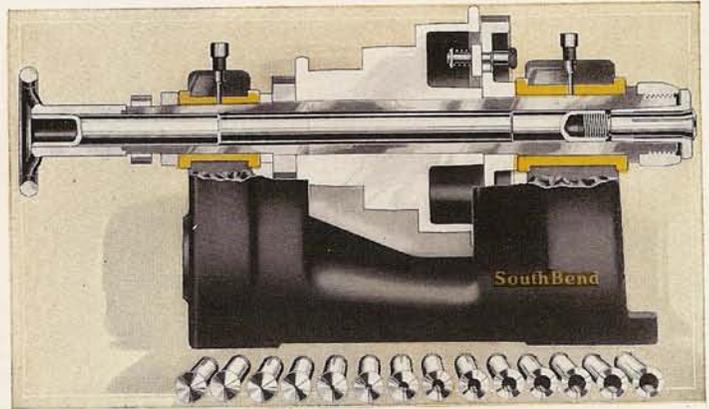


Fig. 22. A Cross Section of the Headstock showing application of Hand Wheel Draw-in Collet Chuck

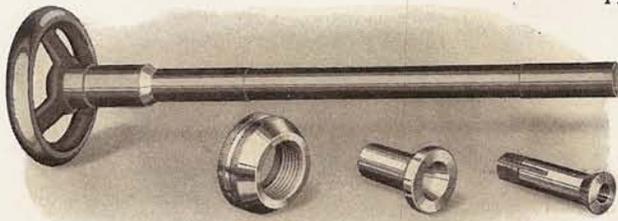


Fig. 23. Hand-Wheel Draw-in Collet Chuck Attachment
Handles Work up to 1/2-inch Diameter

Equipment Included in Price consists of: Hand Wheel and Draw-tube, Nose Cap for protecting threads of Spindle Nose, Hardened Steel Taper Closing Sleeve, and one Round Split Collet of any size desired up to 1/2-inch hole diameter.

Cat. No. 4309. Hand Wheel Draw-in Collet Chuck Attachment (Code Word, "Aaron"). Price.....\$33.00

How the Draw-in Collet Chuck Operates

The Hollow Draw Bar extending through the lathe spindle is threaded at one end, causing the split collet to tighten or release the work when the draw bar is rotated. In the Hand Wheel Type of Draw-in Collet Chuck the collet is operated by turning the hand wheel.

Split Collets for Round Work

All Collets furnished by us are standard, made of tool steel, hardened and tempered. Collets from 1/16-inch hole diameter to 1/2-inch diameter by 64ths are carried in stock.

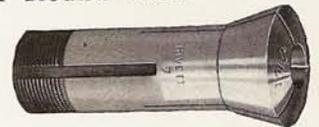


Fig. 24. Split Collet for Round Work

Cat. No. 609. Split Collets for Round Work (Code Word, "Cabot"). Price each.....\$3.85

Graduated Taper Attachment

This Attachment is Used on Tool Room manufacturing and production work for turning and boring all classes of taper work. It is bolted to the lathe carriage and can be set for taper turning or boring at any position along the entire length of the lathe bed. The attachment may remain on the lathe at all times. It requires only a few minutes to change from straight to taper machining or vice versa. The Swivel Bar which controls the taper, is graduated—one end in inches per foot of taper and the other end in degrees.

Net Factory Prices Graduated Taper Attachment

Catalog No.	Maximum Taper			Approximate Shipping Weight	Code Word	Price Each
	Per Foot	At One Setting	in Degrees			
209	3 in.	9 in.	14	40 lbs.	Dashe	\$50.00

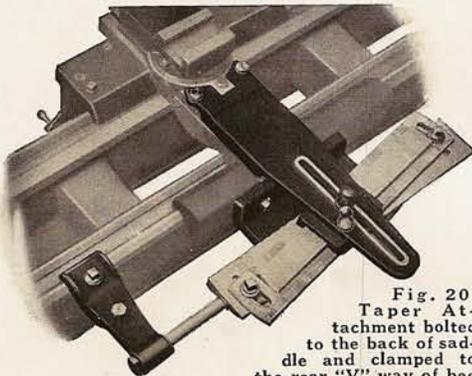


Fig. 20. Taper Attachment bolted to the back of saddle and clamped to the rear "V" way of bed

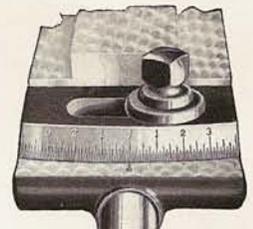


Fig. 21. Close-up of Graduations

Practical Jobs for the 9-inch New Model South Bend Precision Lathe

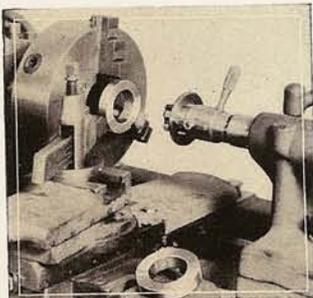


Fig. 32. Tapping Round Nuts with Collapsible Tap

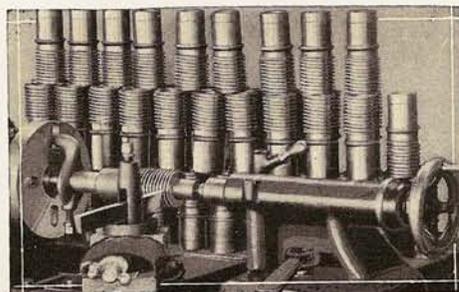


Fig. 33. Cutting an Acme Thread on Steel Worm

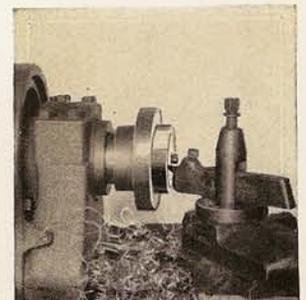


Fig. 34. Manufacturing Steel Gear Blanks in the Lathe

Practical Attachments for the 9-inch New Model Precision Lathe

Milling and Keyway Cutting Attachment

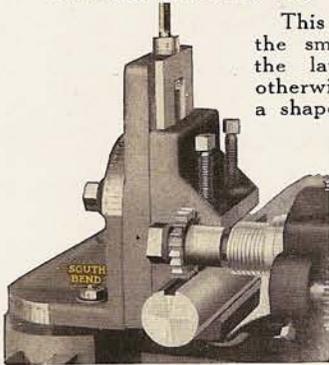


Fig. 38. Milling Attachment

This attachment is valuable for the small shop because it equips the lathe for doing work that otherwise could be done only on a shaper or milling machine.

The attachment fits on the saddle of the lathe, swivels all the way around in a horizontal plane like the compound rest and is graduated 180 degrees. 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. On milling work the automatic cross and longitudinal feeds of the carriage can be used as well as the hand feeds.

Cat. No. 1. Milling Attachment. Code Word, "Vagon". \$40.00
 Cat. No. 109-M. Milling Arbor. Code Word, "Kacel". 9.00

Thread Indicator

This attachment permits running the carriage back by hand, when cutting screw threads, to eliminate the necessity of reversing the travel of the carriage by power to the starting point to catch the thread at the beginning of each cut.

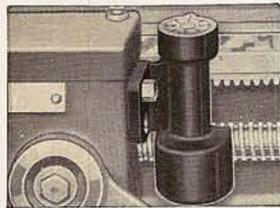


Fig. 40. Thread Indicator

Cat. No. 809. (Code Word, "Abaft.") Price.....\$8.00

Hard Maple Benches for Bench Lathes



Fig. 42. Maple Bench with Drawer for Tools

The bench shown in the illustration is made of the best quality hard maple and will give a lifetime of service. All benches are shipped knocked down to save freight charges. Bolts are furnished for assembling. If you wish to make your own bench, we will supply the blue prints free with lathe.

Specifications and Prices of Benches*

Length Bench Top	Width Bench Top	Thickness Bench Top	For Lathes With Bed Lengths of	Code Word	Cat. No.	Price
54 in.	32 in.	1½ in.	2½, 3, 3½	Cakes	128-X	\$45.00
72 in.	32 in.	1½ in.	4, 4½, 5	Cedar	128-A	50.00
60 in.	40 in.	1½ in.	2½, 3, 3½, 4	Check	128-H	55.00
72 in.	40 in.	1½ in.		Cords	128-J	60.00
96 in.	40 in.	1½ in.		Color	128-G	80.00

*9-inch Silent Chain Motor Driven Bench Lathe can be mounted on a bench as narrow as 24 inches.

No. 15 Electric Grinder

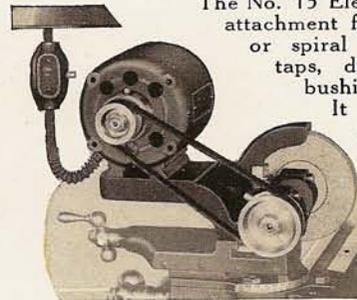


Fig. 39. No. 15 Electric Grinder

The No. 15 Electric Grinder is a practical attachment for grinding straight, taper or spiral reamers, milling cutters, taps, dies, valves, pistons, steel bushings, hardened shafts, etc.

It fits on the compound rest and swivels to any angle in the horizontal plane.

This grinder operates from an electric light socket. Specify electric current when ordering. If DIRECT Current give voltage; if ALTERNATING Current, give voltage, phase and cycle.

The price below includes the Electric Grinder as illustrated, with one Grinding Wheel and Clamp for mounting on Compound Rest.

Cat. No. 15-I. Electric Grinder. Code Word, "Caret."
 Price\$75.00

Micrometer Carriage Stop

This attachment is useful in manufacturing operations and in accurate facing work. It is used for stopping the carriage at any point along the lathe bed, and is provided with a micrometer adjustment. It can be used on either side of the carriage.

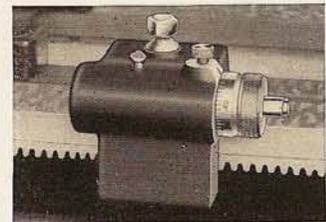


Fig. 41. Micrometer Carriage Stop

Cat. No. 971. (Code Word, "Calef.") Price.....\$10.00

Semi-Automatic Hand Lever Bed Turret

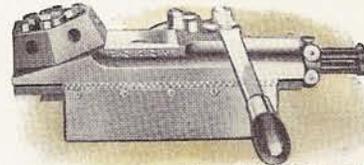


Fig. 43. Hand Rest for Wood Turning

The Turret automatically indexes 1/6 of a turn by the backward movement of the hand lever. Adjustable stops are provided for each of the six faces of the turret. Feed is controlled by the hand lever.

Prices of Semi-Automatic Bed Turret

Size of Lathe	Cat. No.	Turret Hole	Length of Turret Base	Max. Turret Feed	Weight Each	Code Word	*Price of Turret
9 in.	1509	¾ in.	9½ in.	4¼ in.	40 lbs.	Jaber	\$205.00

*Fitting Semi-Automatic Bed Turret is extra. Prices on application.



Fig. 44. Hand Lever Tailstock

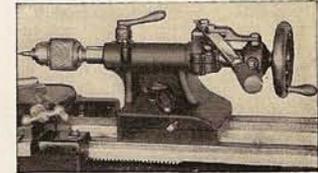


Fig. 45. No. 109. (Code Word "Celot.") Price...\$62.20

No. 109 Chuck and Tool Assortment for All 9-inch Lathes

- 3-Jaw Drill Chuck with Arbor Attached
- Pinion Key for Drill Chuck
- Formed Threading Tool
- Wrench and Cap Screws for Lathe Chuck
- Independent Lathe Chuck
- Style "B" Patent Boring Tool and Wrenches
- High Speed Steel Cutter Bit
- Right Hand Patent Cutting-Off Tool and Wrench
- Straight Shank Patent Turning Tool and Wrench
- 10-14. Are Malleable Lathe Dogs, ½", ¾", 1", 1¼" and 1½" capacity.

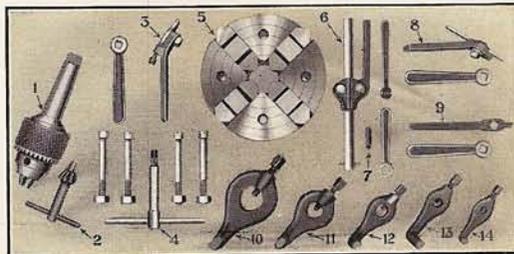
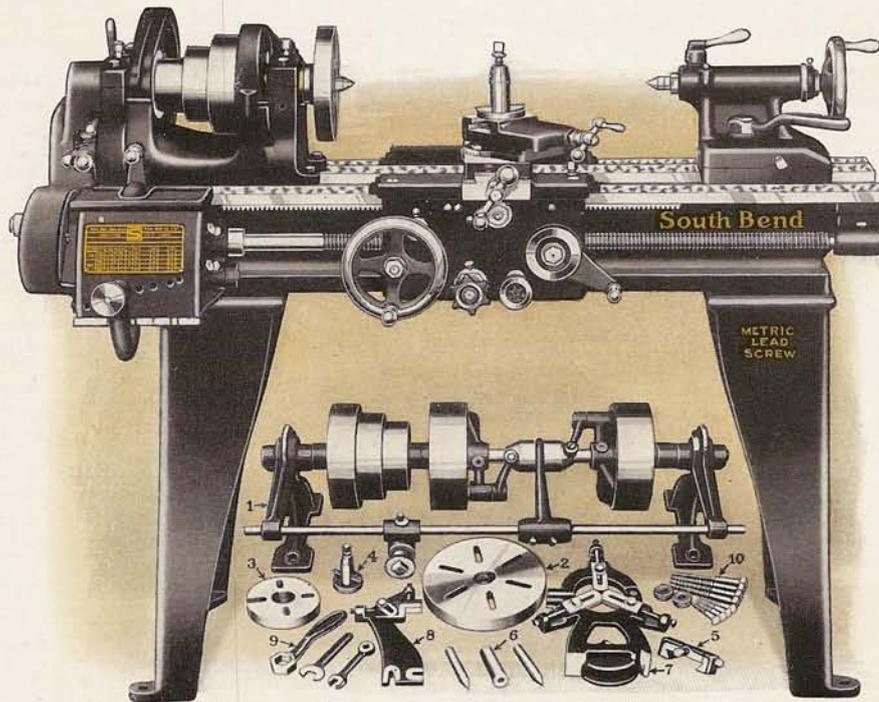


Fig. 45. No. 109 Chuck and Tool Assortment

The Chuck and Tool Assortment, listed here shows the popular sizes of chucks and tools for all types and drives of 9-inch New Model Lathes. We recommend this assortment as being the most practical for general shop use. Individual items may be ordered separately if desired.

Cat. No.	Description	Price
1 No. 2106	6-inch, 4-Jaw Independent Lathe Chuck.	\$28.00
	Fitting Chuck to Lathe including Chuck Back	7.00
1 No. 1201	3-Jaw Drill Chuck, ½-inch capacity	8.50
1 No. 709	Drill Chuck Arbor, fitted to Chuck	1.50
1 No. 849-S	Patent Turning Tool, straight shank	2.40
1 No. 865	Patent Threading Tool	3.75
1 No. 429	Patent Boring Tool, Style B	4.40
1 No. 881-R	Patent Cutting Off Tool (Right Hand)	2.60
1 Set (5)	Malleable Lathe Dogs, ½", ¾", 1", 1¼", 1½"	4.05

Cat. No. 109. (Code Word "Celot.") Price...\$62.20



Regular equipment, as illustrated under Lathe, is included in price of Lathe

9-inch New Model South Bend Precision Metric Lathe

Made in Quick Change Gear and Standard Change Gear Types

The New Model 9-inch Quick Change Gear Metric Lathe illustrated above is exactly the same as the Quick Change Gear Lathe illustrated on pages 4 and 5 except that it is equipped with metric lead screw, metric gear box and metric thread spindle nose. The micrometer graduated collars are graduated in the metric system.

Metric Pitches. The Metric Quick Change Gear Box provides for cutting the following International Standard Metric Threads: .5, .75, 1., 1.25, 1.5, 1.75, 2., 2.5, 3., 3.5, 4., 4.5, 5., 5.5, 6., 6.5, 7., 7.5, 8. m/m pitch. It also provides a wide range of automatic cross and longitudinal feeds. The Standard Change Gear Lathe has a set of change gears for cutting the screw threads enumerated above.

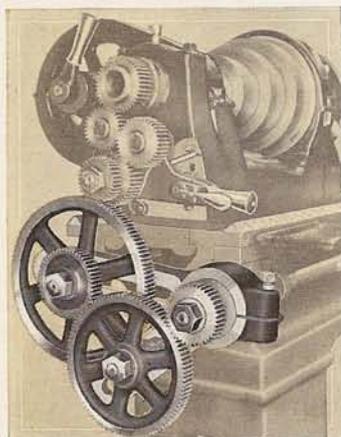
The 9-inch Metric Lathe may be had in Quick Change or Standard Change Gear Types and in any of the various Countershaft Drive and Motor Drive models shown in this bulletin. The specifications and features which apply to the regular 9-inch lathes also apply to the Metric Lathe.

Attachments for Metric Lathe. All attachments shown in this bulletin can be fitted to the 9-inch Metric Lathe. Attachments for the Metric Lathe are furnished with micrometer graduated parts reading in the metric system.

Prices of the 9-inch Metric Lathe in the various types, and prices of attachments, are the same as those listed in this bulletin for the regular lathes.

Net Factory Prices and Specifications of 9-inch New Model South Bend Metric Lathe

Swing Over Bed		Length of Bed		Distance Between Centers		Hole Through Spindle		Swing Over Carriage		Horse Power Required	Weight Boxed		Quick Change Gear Metric Lathe			Standard Change Gear Metric Lathe		
Inches	mm.	Feet	M.	Inches	mm.	Inches	mm.	Inches	mm.		Lbs.	Kilos	Cat. No.	Code Word	Net Factory Price	Cat. No.	Code Word	Net Factory Price
9 1/4	235	2 1/2	.763	10 3/4	260	3/4	19.1	6 3/8	162	1/4	530	241	1-80-X	Benva	\$288.00	1-30-X	Beosf	\$243.00
9 1/4	235	3	.915	17 1/4	438	3/4	19.1	6 3/8	162	1/4	560	254	1-80-Y	Benzo	294.00	1-30-Y	Beowj	249.00
9 1/4	235	3 1/2	1.068	22 1/4	565	3/4	19.1	6 3/8	162	1/4	580	263	1-80-Z	Beohs	300.00	1-30-Z	Bepbo	255.00
9 1/4	235	4	1.22	28 3/4	718	3/4	19.1	6 3/8	162	1/4	600	272	1-80-A	Beojt	307.00	1-30-A	Bepiz	262.00
9 1/4	235	4 1/2	1.372	35 1/4	893	3/4	19.1	6 3/8	162	1/4	620	282	1-80-R	Beonz	315.00	1-30-R	Bepob	270.00



Attachment Fitted to Lathe

Transposing Gear Attachment for Cutting Metric Threads

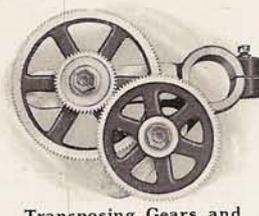
For All 9-inch South Bend Lathes Equipped with English Lead Screws

The Transposing Gear Attachment for cutting Metric Threads on South Bend Lathes equipped with English Lead Screw is shown in the illustration at the left. This Attachment permits the lathe to be used for cutting the following International Standard Metric Threads and French Standard Metric Threads: .5, .75, 1., 1.25, 1.5, 1.75, 2., 2.5, 3., 3.5, 4., 4.5, 5., 5.5, 6., 6.5, 7., 7.5, 8. m/m pitch.

This attachment consists of a Bracket, two Transposing Gears, an Idler Gear and a set of Change Gears for cutting the various International Standard Metric Pitches as listed above.

Net Factory Prices Metric Transposing Gear Attachment for Quick and Standard Change Gear Lathe

Size Lathe	Quick Change			Standard Change		
	Cat. No.	Code Word	Price	Cat. No.	Code Word	Price
9 in.	1435	Tanom	\$40.00	1442	Tibol	\$35.00



Transposing Gears and Bracket



Additional Change Gears

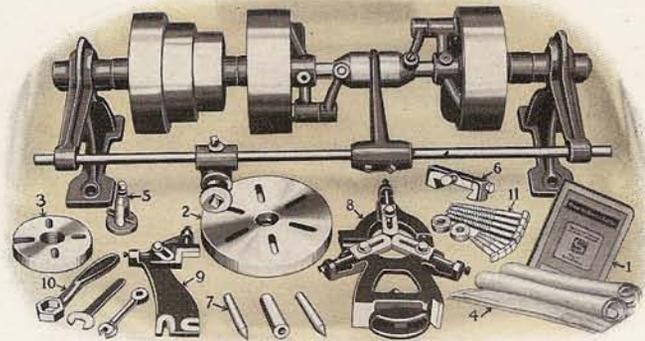
Countershaft and Equipment for 9-inch New Model South Bend Precision Lathes

This Equipment Is Included in the Price of All 9-inch Countershaft Driven Lathes

The illustration at the right shows the countershaft and lathe equipment that is included in the price of the 9-inch New Model South Bend Lathes. Each part is numbered in the illustration and described below.

1. The Instruction Book, "How to Run a Lathe" is a very valuable reference for the mechanic.
2. The Large Face Plate is threaded and fitted to the spindle nose of the lathe.
3. The Small Face Plate is threaded and fitted to the spindle nose of the lathe.
4. The Installation Plan Blue Prints furnished with the equipment of each lathe show how to install and erect the lathe.
5. Tool Post, Ring, Wedge and Wrench are drop forged steel, case-hardened. The tool post set-screw is tool steel tempered.
6. Adjustable Thread Cutting Stop used for regulating depth of chip in thread cutting.
7. Two Tool Steel Lathe Centers: The soft center and taper sleeve are for the Headstock Spindle—the hardened center is for the Tailstock Spindle.
8. Center Rest supports long work while being turned. Also used when drilling, boring, etc.
9. Follower Rest travels with the cutting tool, and supports long, slender work, while being machined.
10. Wrenches for Tailstock, Compound Rest and Tool Post.
11. Lag Screws, for countershaft and lathe.

The Standard Change Gear Lathes include a set of Independent Change Gears for thread cutting and turning feeds. The Change Gears provide for cutting right and left hand screw threads as shown on the index plate attached to each lathe, and also take care of the various Automatic Friction Cross and Longitudinal Feeds.



Double Friction Countershaft and Regular Lathe Equipment Included in Price of 9-inch Countershaft Driven Lathes

The New Double Friction Countershaft illustrated above is used for driving the lathe from the line shaft. It is not furnished with motor driven lathes. The two Drive Pulleys are equipped with Quick Acting Friction Clutches which expand against the rim. One of these pulleys is used for straight drive and the other for reversing the lathe through a cross belt. Oil Reservoirs equipped with large felt wicks, distribute oil to clutch pulleys and countershaft bearings.

The Double Friction Countershaft may be arranged as a two-speed countershaft by attaching a pulley of large diameter on the line shaft, to drive the friction pulley regularly used for the reverse. 12 spindle speeds are provided—the high speeds suitable for machining brass, bronze, aluminum, etc.

96 Sizes and Types of New Model South Bend Lathes

New Model South Bend Lathes are made in 96 sizes and types, all of which are illustrated, described and priced in special bulletins, 8 1/2 x 11 inches. One of these bulletins is available for each size of lathe. Each illustrates and describes in detail the lathe and its various types, drives and attachments. Write for one or more of these bulletins stating size of lathe in which you are interested.

Mailed Anywhere in the World, Postpaid, No Charge

CONTENTS OF BULLETINS

Quick Change Gear Lathes
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Gap Bed Lathes
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Junior Bench and Floor Leg Lathes
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"How to Run a Lathe"

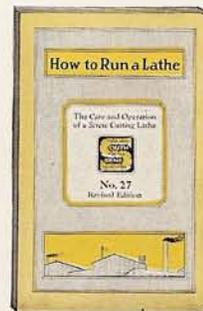
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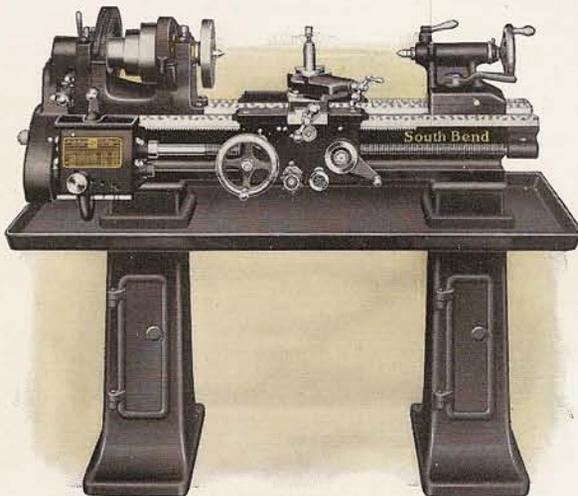
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144 Pages, Size 5 1/2 x 8 Inches



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