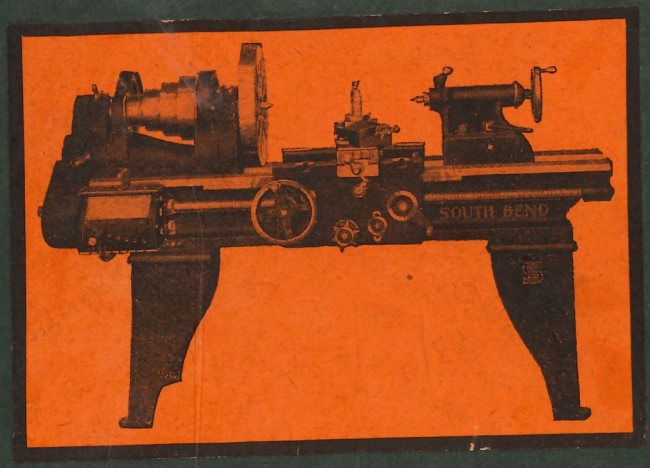
SOUTH BEND LATHES



CATALOG NO. 84

SOUTH BEND LATHE WORKS

SOUTH BEND LATHES

Metal Working, Screw Cutting Engine Lathes

For Manufacturing and the Machine Shop

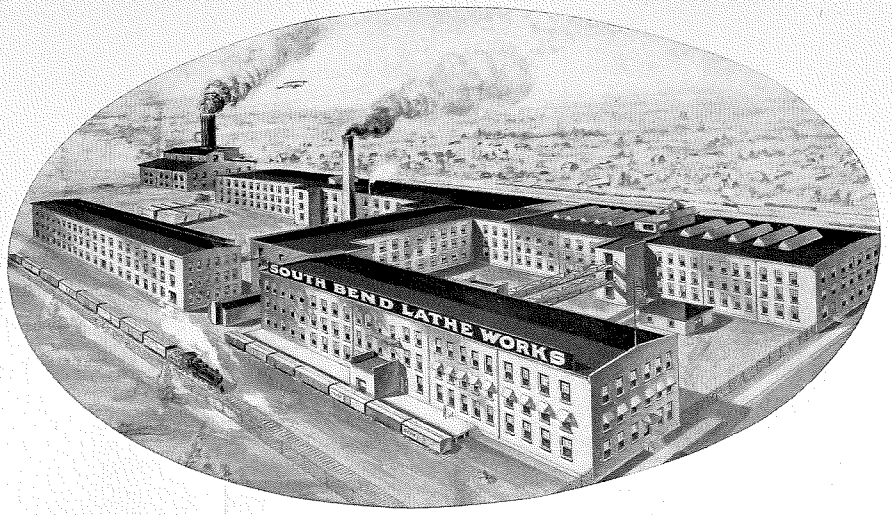
CATALOG NO. 84—A

February, 1925

Cable Address "Twins" South Bend
Codes: Western Union, Lieber's, A. B. C. and Bentleys

SOUTH BEND LATHE WORKS

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



Factory of the South Bend Lathe Works

Ground Area, 4½ Acres; Floor Space, 180,000 Square Feet

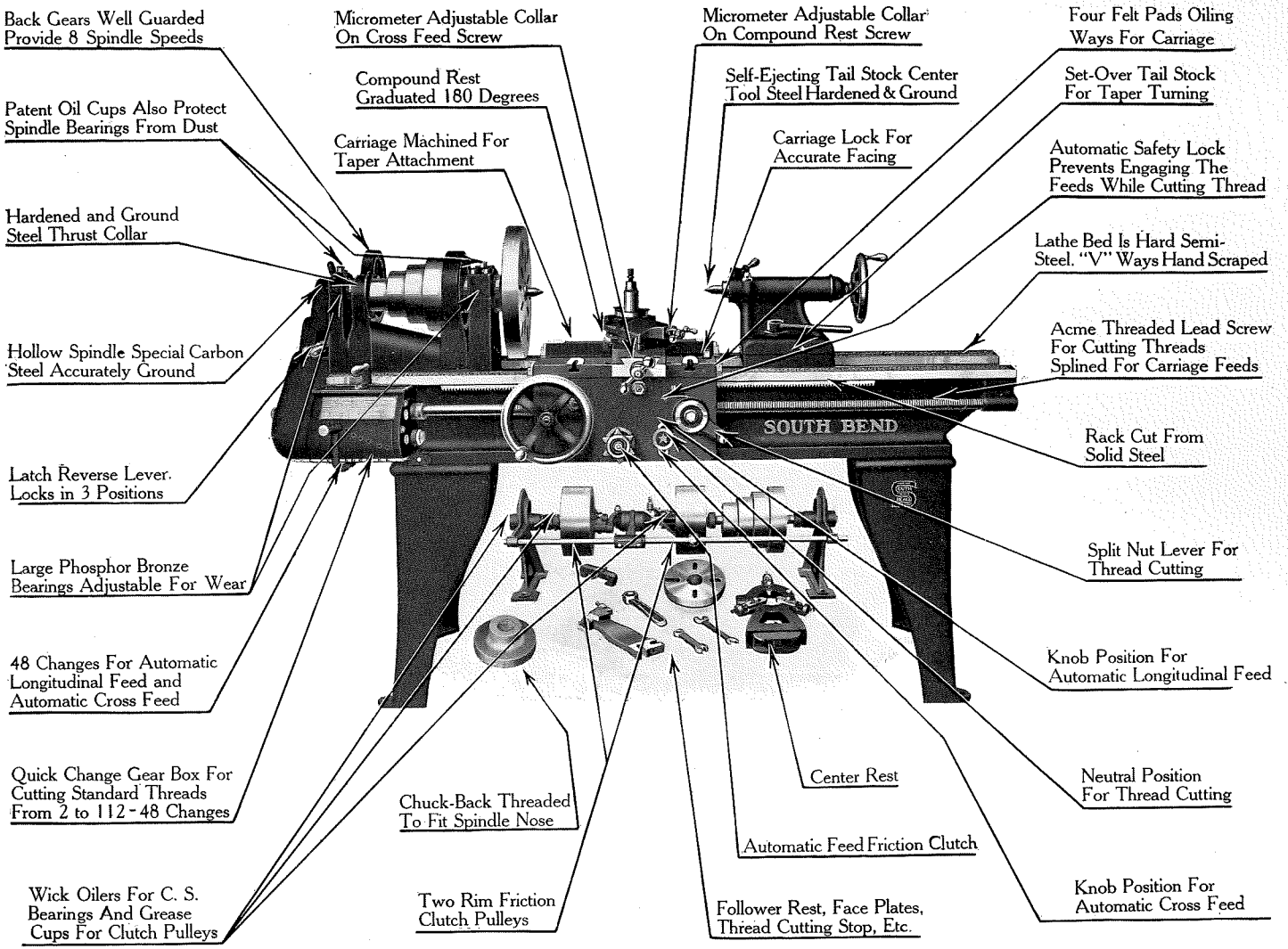
History — The South Bend Lathe Works was established in South Bend, Indiana in 1906. We have been manufacturing lathes for over 19 years and more than 32,000 lathes have been produced. South Bend Lathes are in use in every State in the Union and in 64 foreign countries.

Plant Facilities — The mechanical equipment in use consists of special machines designed and built for the production and manufacture of South Bend Lathes.

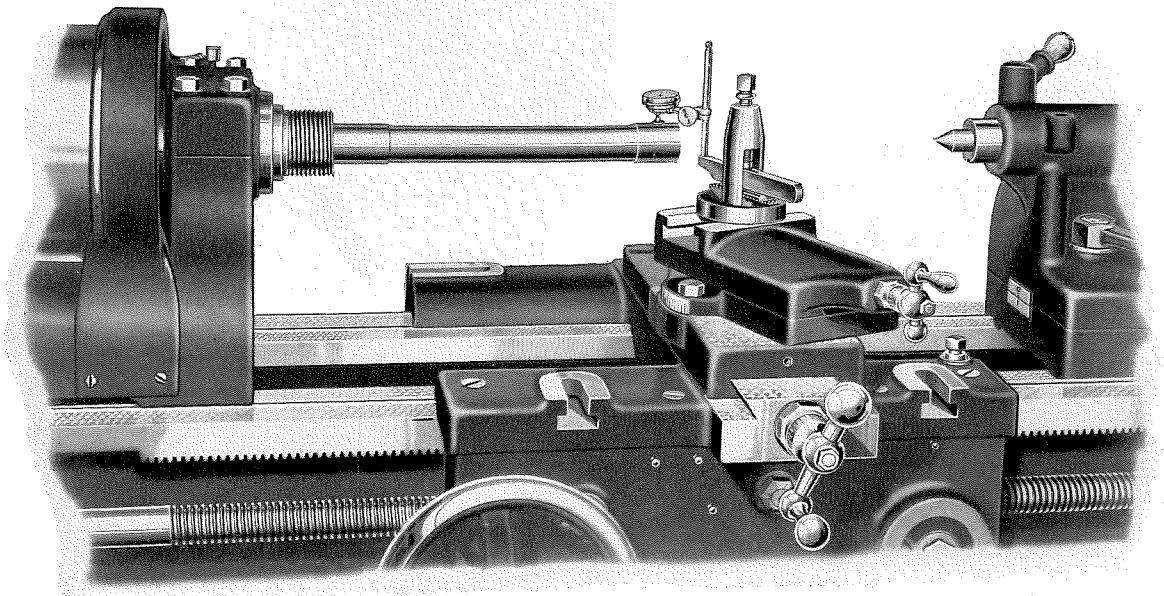
All parts are machined in special jigs and fixtures to insure accuracy and interchangeability, and a rigid inspection system provides an inspection after each operation.

Quantity Production — Quantity production of South Bend Lathes has made it possible to bring the selling price down without sacrificing quality. Each size Lathe is made up in large lots and the component parts are produced in factory lots of 100 to 1,000. Our business is devoted entirely to the manufacture of South Bend Lathes and the production capacity is normally about 4,000 Lathes per annum.

Policy — The basic principle upon which the business of the South Bend Lathe Works is conducted and upon which it has prospered for 19 years, is to give satisfaction and service to the users of South Bend Lathes.



30 Features on the Improved South Bend Lathes



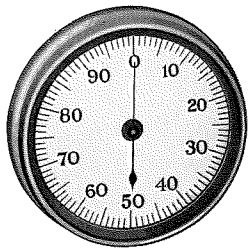
Testing Head Stock Spindle with Test Bar and Test Indicator

The illustration shows the method of testing the head stock spindle of a lathe to see that the taper hole of the spindle runs true and that the axis of the spindle is parallel to the ways of the lathe.

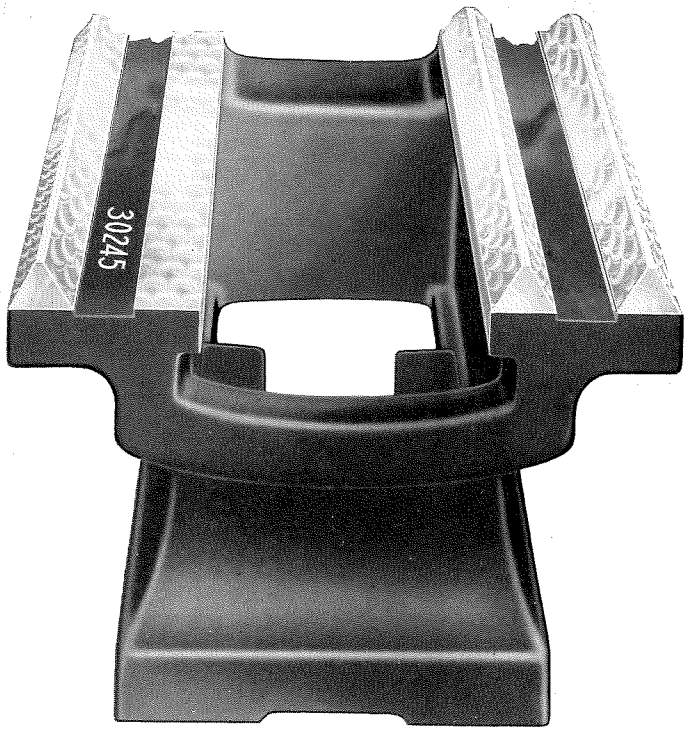
The test bar is made of steel and ranges from 12 inches to 18 inches long, depending on the size of the lathe. It is machined between centers and ground on the taper shank and also on the two larger diameters as shown above. An indicator placed on this bar as shown in the cut can detect an error of one ten-thousandth of an inch.

Dial of Test Indicator

The illustration shows the dial of the test indicator. The circumference of the dial is divided into one hundred equal spaces, each representing a movement of the contact point of one-thousandth of an inch.



Dial of Test Indicator

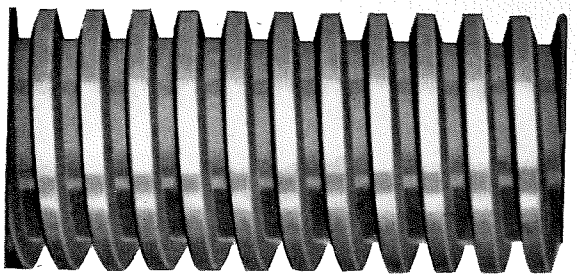


End View of a South Bend Lathe Bed

The illustration above shows the end view of a 16-inch South Bend Lathe bed. The bed casting is made of semi-steel. It is heavy and rigid, cross ribbed by several box braces cast at proper intervals its entire length.

There are three V-ways and one flat way for aligning the head stock, tail stock and carriage. These ways are hand scraped to a perfect bearing.

The bed itself is rough planed, then seasoned, finish planed, again seasoned, and hand scraped on all the sliding surfaces.



Section of the 18-inch Lead Screw (Actual Size)—1⅜-inch Diameter; 4-Pitch Acme Standard Thread

Accurate Acme Standard Lead Screws

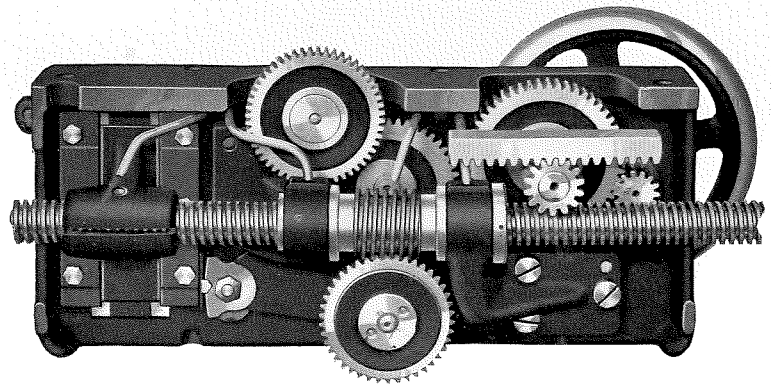
All South Bend Lathes are equipped with Acme Standard Lead Screws which are cut on a special machine equipped with a Pratt & Whitney master lead screw. This machine is built for the cutting of lead screws exclusively.

The Lead Screws on the South Bend Lathes have no superior. The finest precision master taps, screw gauges, special screws, etc., can be cut on a South Bend Lathe to meet the most accurate tests.

GUARANTEE

We guarantee every South Bend Lathe to be accurate and mechanically perfect; to give you entire satisfaction and the service you have a right to expect.

We will ship a South Bend Lathe anywhere in the United States for a thirty-day trial in your own shop. If you are dissatisfied in any way within that time, ship it back to us; we will pay the return freight charges and refund your money.



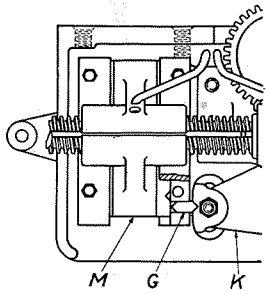


Fig. 700

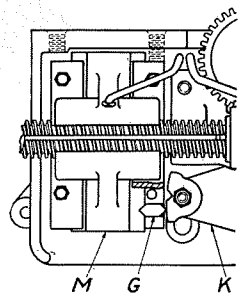


Fig. 701

Mechanism of the Lathe Apron

The illustration shows the double bracket in the apron on all sizes of South Bend Lathes (except the 9-inch where it is not needed). The double bracket supports the lead screw on both sides of the worm which operates both the automatic cross feed and automatic longitudinal feed. This worm is driven by a spline in the lead screw, thereby giving a positive gear feed which is very important in production work.

The Threads of the Lead Screw Used for Screw Cutting Only

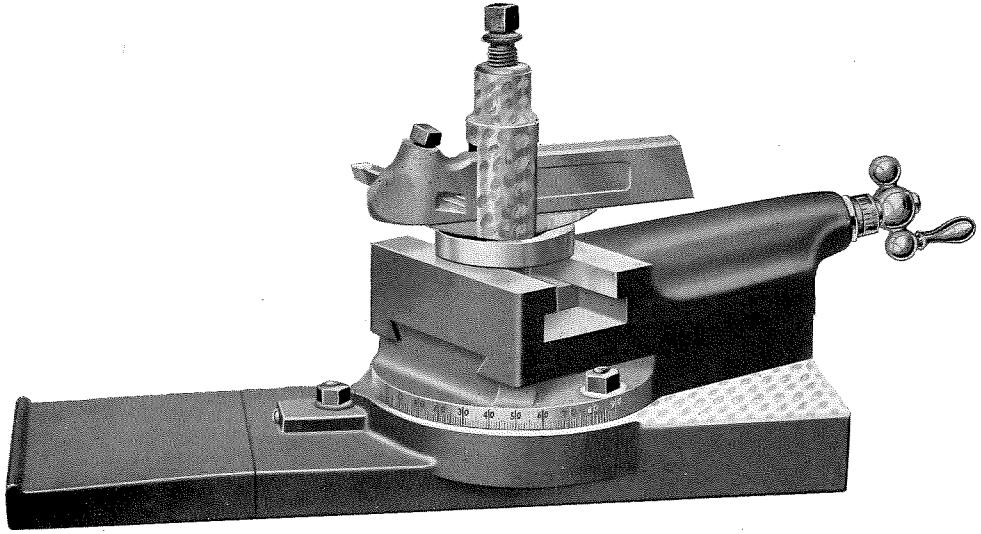
When cutting screw threads the split half nuts are closed on the lead screw to operate the carriage to get the proper pitch of thread. Therefore, the threads of the lead screw are used only for cutting screw threads. They are not used for the automatic longitudinal or cross feeds or for any purpose other than the cutting of screw threads.

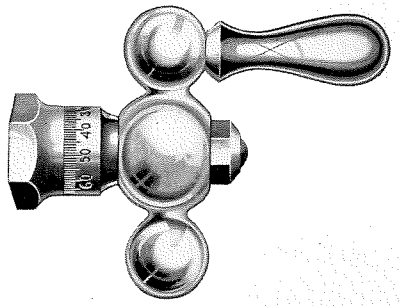
Fig. 700 shows the safety lock "G" set for thread cutting. Split nuts "M" are closed on the lead screw. Feed lever "K" is locked in neutral position.

Fig. 701 shows the safety device "G" set for operation of the automatic longitudinal feed. Split nuts "M" are locked in an open position. Feed lever "K" is in position for operation of the longitudinal feed.

The Automatic Safety Device

The Automatic Safety Device prevents the engaging of the automatic cross and longitudinal feeds while the split half nuts are clamped on the lead screw for thread cutting. And, vice versa, it prevents the split half nuts from being clamped to the lead screw while either the automatic cross feed or the automatic longitudinal feed is in action.





Close-up of Micrometer Graduated Collar

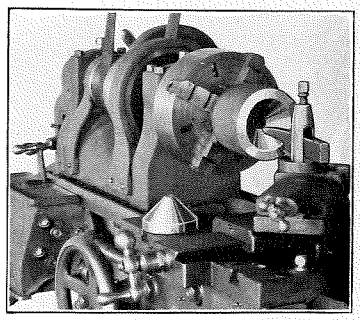
Graduated Compound Rest

The compound rest is a very important part of a screw cutting engine lathe, as it is called upon to do a great variety of fine, accurate work.

The cut illustrates the design of the compound rest on all size South Bend Lathes. The feed screw has a micrometer graduated collar reading in one-thousandths of an inch. The collar is adjustable so that the operator may start at zero if it is desired.

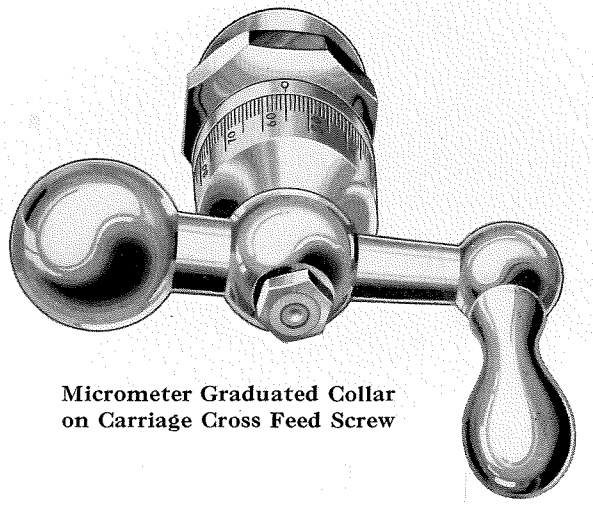
The micrometer graduations on the cross feed screw are practical, as they enable the operator to do fine, accurate work such as thread cutting, finished turning, gauge-making, etc.

The base of the compound rest is graduated, reading from 0 to 180 degrees, so that any angle on the horizontal plane may be instantly obtained. All sliding surfaces are hand scraped to a perfect bearing.



COMPOUND REST ON DUPLICATE TAPER WORK

This cut illustrates the use of the compound rest on duplicate taper work in making a punch and die. The die is bored and without changing the position of the compound rest, the taper of the punch is turned the identical taper of the die.



Micrometer Graduated Collar on Carriage Cross Feed Screw

Micrometer Graduated Collar

The illustration above shows the micrometer graduated collar, one of which is attached to the cross feed screw on all size South Bend Lathes. This collar is graduated to read in one-thousandths of an inch, and is adjustable so that the operator may start at zero if it is desired.

We manufacture all units of South Bend Lathes in 100 lots. The head stock, tail stock, apron, saddle, and the gear box are bored, reamed, faced, etc., in special machines built for each particular unit. This insures accuracy and interchangeability so every purchaser of a South Bend Lathe may be sure of an accurate, durable, well built machine at the lowest possible cost.

FACTORY TEST CARD
OF ⊙ THE
SOUTH BEND LATHE

ORDERED BY Acme Supply Co. DATE Sept. 5-24.
SHIPPED TO Union Mfg. Co. DATE Sept 13-24.
CATALOG No. 69 E SERIAL No. 31268
SIZE OF LATHE 16" X 8' TYPE OF LATHE Q. C. Gr.

TEST RECORD	LIMIT OF ERROR
HEAD SPINDLE TAPER – Outer end of 12" test bar runs true .0002	.001"
HEAD SPINDLE TAPER – 12" test bar parallel with bed .000	.001"
TAIL SPINDLE – Parallel with lathe bed .0005	.001"
CENTERS – Alignment of .0002	.001"
FACEPLATE – Convex .000	.001"
FACEPLATE – Concave .0005	.001"
CHUCK – Jaws true on face OK	
LEAD SCREW – Final test OK	
SADDLE – Bearing on cross slide dovetail OK	
SADDLE – Bearing on bed OK	
COUNTERSHAFT – Clutch test OK	

ASSEMBLED BY H. J. Grenert DATE Sept 10-24.
TESTED BY R. S. Young DATE Sept 12-24.

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

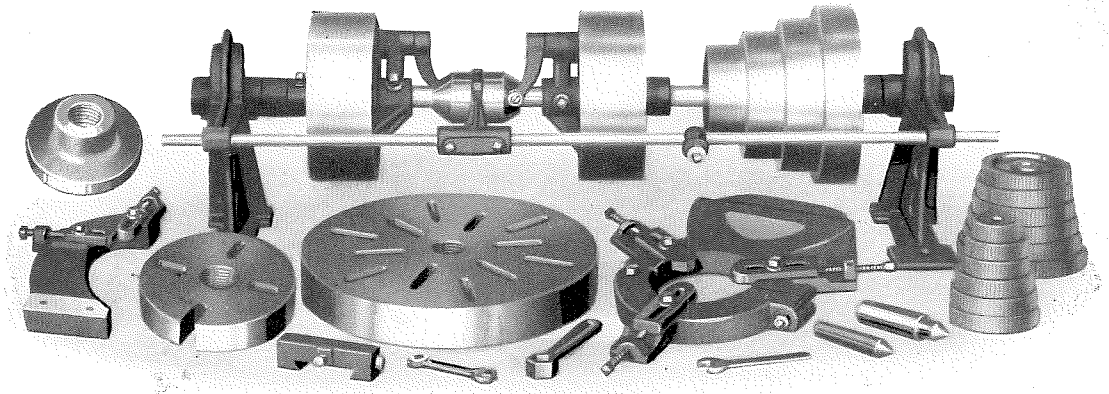
The Factory Test Card

The Factory Test Card, a cut of which is shown above, describes some of the principal tests that are made on a screw cutting engine lathe before it leaves the factory.

Each lathe undergoes eleven important tests as indicated above, and a record of each test is kept on the test card tag which is made in duplicate, one copy of which is included with the equipment of the lathe; the other copy is kept in our files for future reference.

Precision Work on the Lathe

The finest precision work that comes up in the tool room, the manufacturing plant, and the machine shop can be machined on South Bend Lathes to meet the most accurate requirements.



Countershaft and Regular Equipment

For South Bend Lathes

Regular Equipment

The Equipment as shown in the above cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

Countershaft

The South Bend improved double friction countershaft is very efficient, simple and practical.

The friction clutch pulleys have the rim grip friction clutch, which is powerful and durable. They are provided with grease cups for lubrication. The countershaft bearings are provided with wick oilers for oiling.

We recommend this countershaft as one of the most efficient on the market. In designing the countershaft for South Bend Lathes we have made it practical but simple, as it is attached to the ceiling where it is not easy to get at for oiling and adjusting.

Gear Box for Quick Change Gear Lathes

The Gear Box is included as regular equipment on all Quick Change Gear Lathes.

Change Gears for Standard Change Gear Lathes

The two stacks of gears at the right of cut are change gears used for thread cutting on the Standard Change Gear Lathes.

Chuck Back Threaded To Fit the Spindle Nose

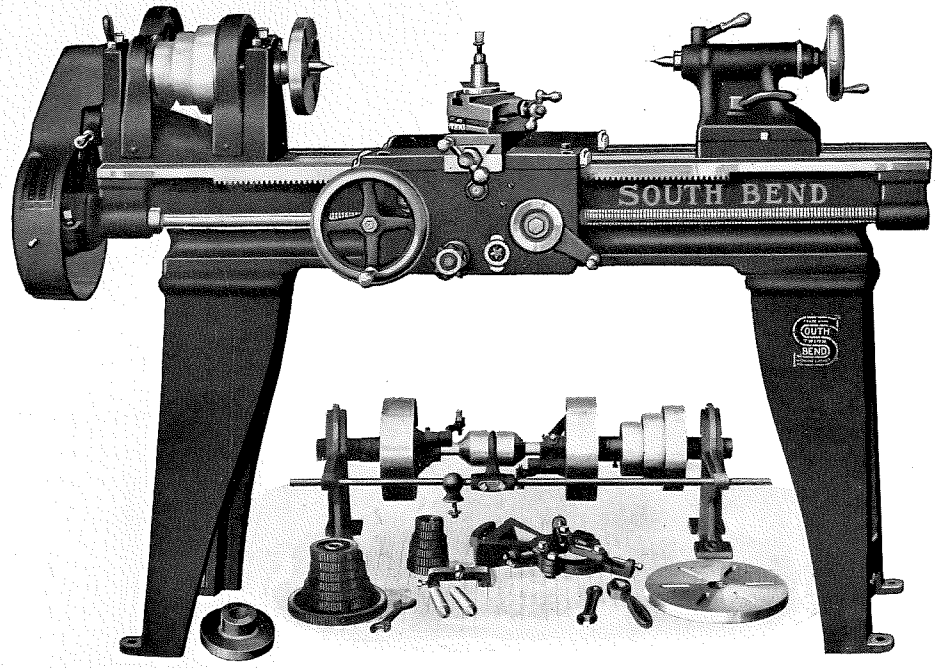
We furnish one semi-machined chuck back with each lathe. This chuck back is threaded to fit the spindle nose of the lathe, and has a flange large enough to be machined to fit the recess of the average size chuck for the lathe.

Instruction Book on the Operation of a Lathe

We furnish a 160-page instruction book with the equipment of each lathe. It contains over 300 illustrations on the erection, care, and operation of a screw cutting engine lathe.

Specifications of Lathe Countershafts

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Size of Friction Pulley	6⅞ x 2 3/16	6⅞ x 2 3/16	8 x 2⅜	10 x 3⅝	10 x 3⅝	12 x 4½	12 x 4½	14 x 5
Speed of Countershaft	290 R. P. M.	290 R. P. M.	275 R. P. M.	250 R. P. M.	225 R. P. M.	200 R. P. M.	175 R. P. M.	150 R. P. M.



No. 25—9-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe is included in the price of the lathe

No. 25—9-Inch Swing—Standard Change Gear South Bend Lathe

An excellent tool for small, accurate machine work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A three-step cone for a 1-inch belt, gives six changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a ¾-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 2 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 2 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge which gives a rigid support for the tool slide. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

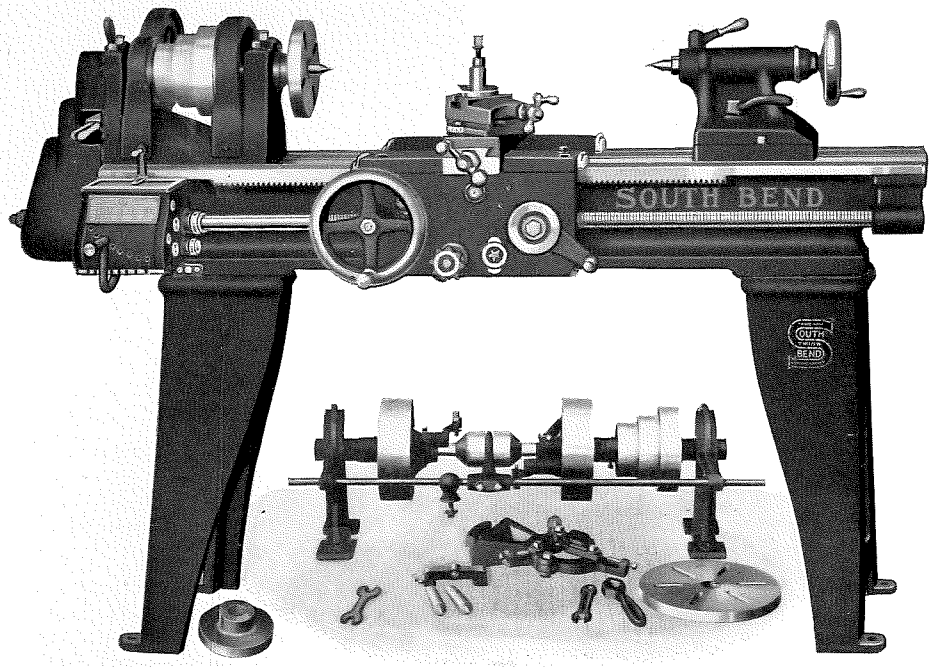
The Lead Screw is of a high quality steel, has an eight pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36, and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 2 inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
25-X	9¼ in.	2½ ft.	10 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dally	440 lbs.	500 lbs.
25-Y	9¼ in.	3 ft.	16 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dare	460 lbs.	530 lbs.
25-Z	9¼ in.	3½ ft.	22 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dean	480 lbs.	550 lbs.
25-A	9¼ in.	4 ft	28 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dell	500 lbs.	570 lbs.



No. 61—9-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 61—9-Inch Swing—Quick Change Gear South Bend Lathe

This excellent lathe for small, fine, accurate work in the machine shop

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A three-step cone for a 1-inch belt, gives six changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a ¾-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 2 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 2 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge which gives a rigid support for the tool slide. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

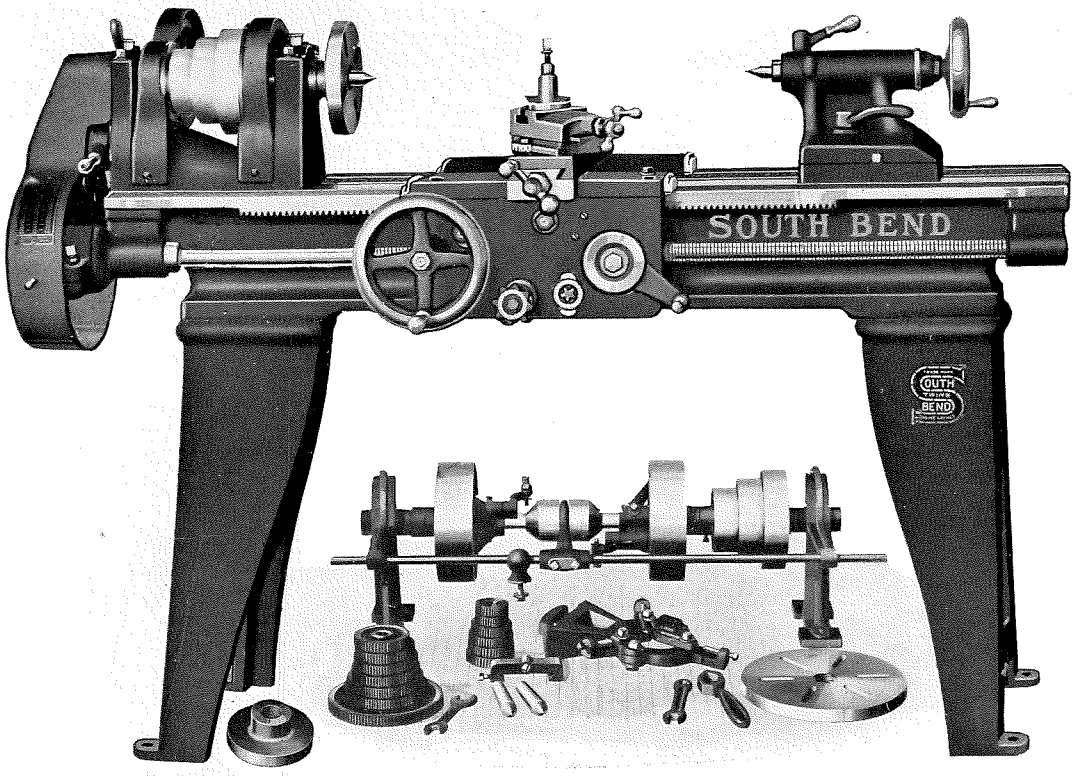
The Lead Screw is of a high quality steel, has an eight pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 2 inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
61-X	9¼ in.	2½ ft.	10 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Damp	440 lbs.	500 lbs.
61-Y	9¼ in.	3 ft.	16 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dirt	460 lbs.	530 lbs.
61-Z	9¼ in.	3½ ft.	22 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dort	480 lbs.	550 lbs.
61-A	9¼ in.	4 ft.	28 in.	6⅜ in.	¾ in.	⅓ H. P.	5/16 x ¾ in.	290 R. P. M.	Dust	500 lbs.	570 lbs.



No. 27—11-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 27—11-Inch Swing—Standard Change Gear South Bend Lathe

This Lathe is recommended for the finest, accurate precision work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A three-step cone for a 1¼-inch belt, gives six changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a ⅞-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 2 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 2 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

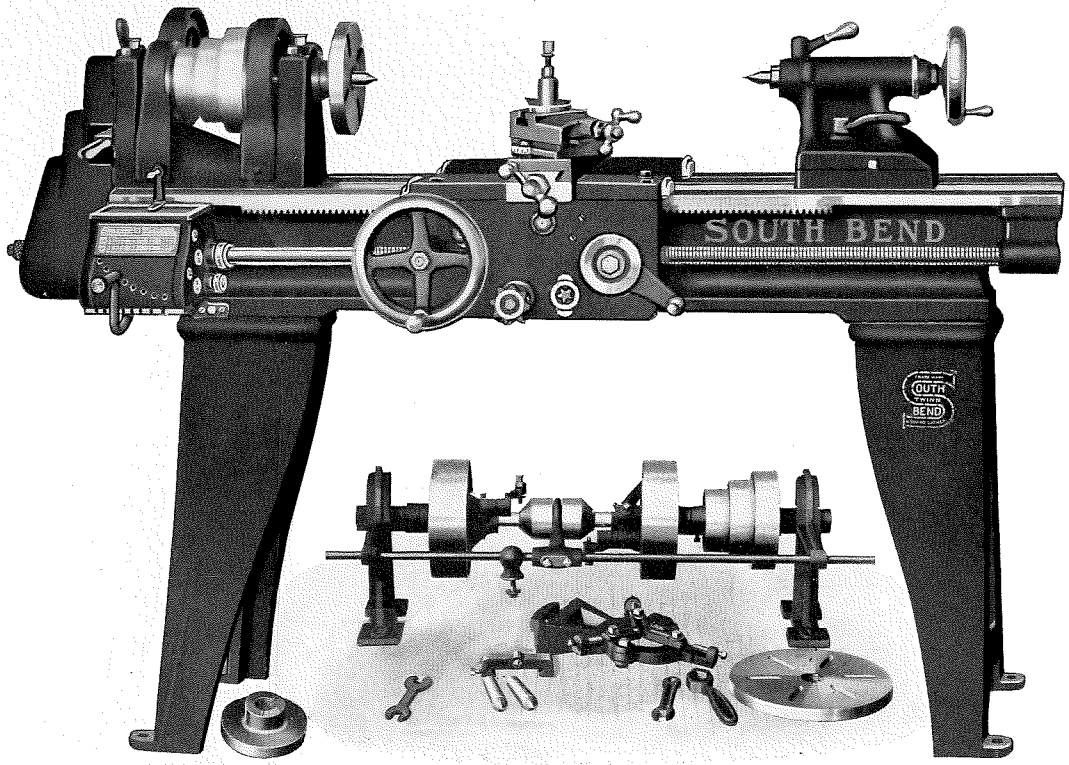
The Lead Screw is of a high quality steel, has an eight pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 2¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
27-Y	11¼ in.	3 ft.	14 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Fare	630 lbs.	765 lbs.
27-Z	11¼ in.	3½ ft.	20 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Fate	655 lbs.	800 lbs.
27-A	11¼ in.	4 ft.	26 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Fend	680 lbs.	835 lbs.
27-B	11¼ in.	5 ft.	38 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Foam	760 lbs.	905 lbs.



No. 63—11-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 63—11-Inch Swing—Quick Change Gear South Bend Lathe

A Precision Tool, for light, accurate tool work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A three-step cone for a 1¼-inch belt, gives six changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a ⅞-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 2 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 2 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge which gives a rigid support for the tool slide. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

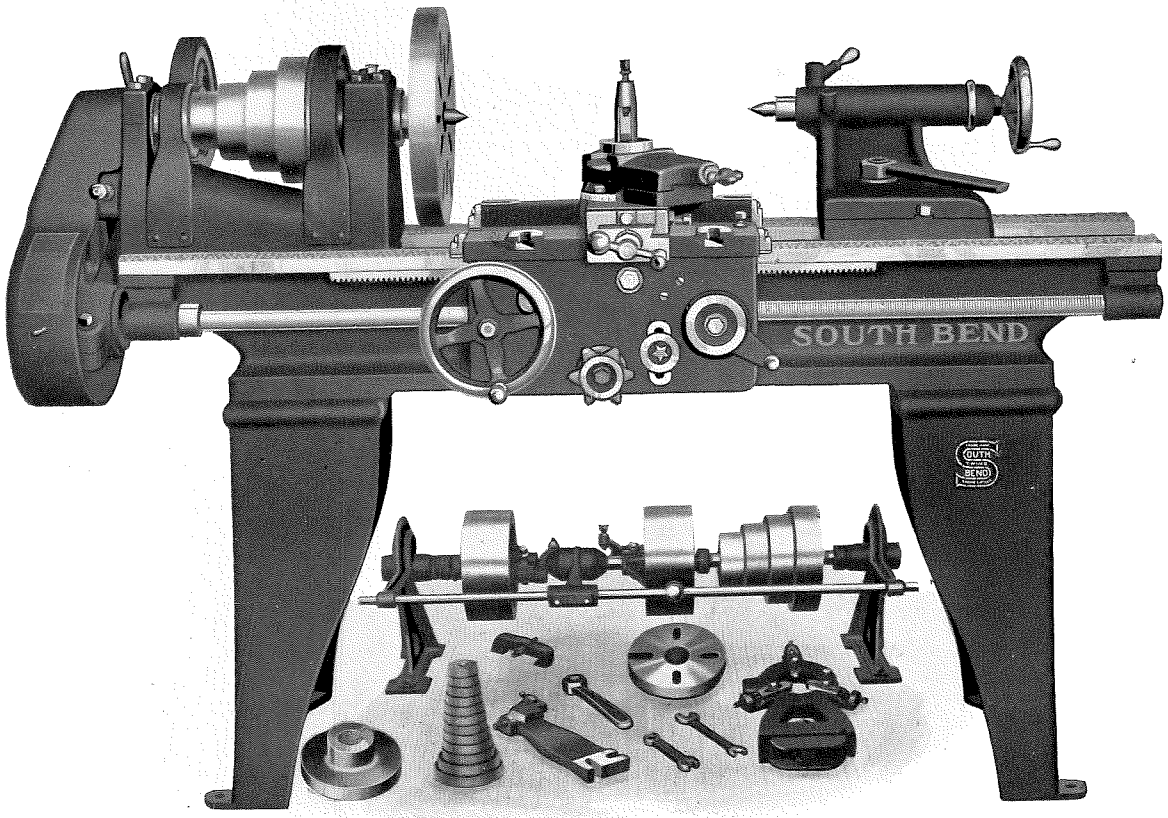
The Lead Screw is of a high quality steel, has an eight pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 2¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
63-Y	11¼ in.	3 ft.	14 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Fact	630 lbs.	765 lbs.
63-Z	11¼ in.	3½ ft.	20 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Fern	655 lbs.	800 lbs.
63-A	11¼ in.	4 ft.	26 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Film	680 lbs.	835 lbs.
63-B	11¼ in.	5 ft.	38 in.	7⅝ in.	⅞ in.	½ H. P.	⅜ x ⅞ in.	290 R. P. M.	Flax	760 lbs.	905 lbs.



No. 34—13-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 34—13-Inch Swing—Standard Change Gear South Bend Lathe

A practical lathe for tool room, machine shop and manufacturing plant

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 1½-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and two T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

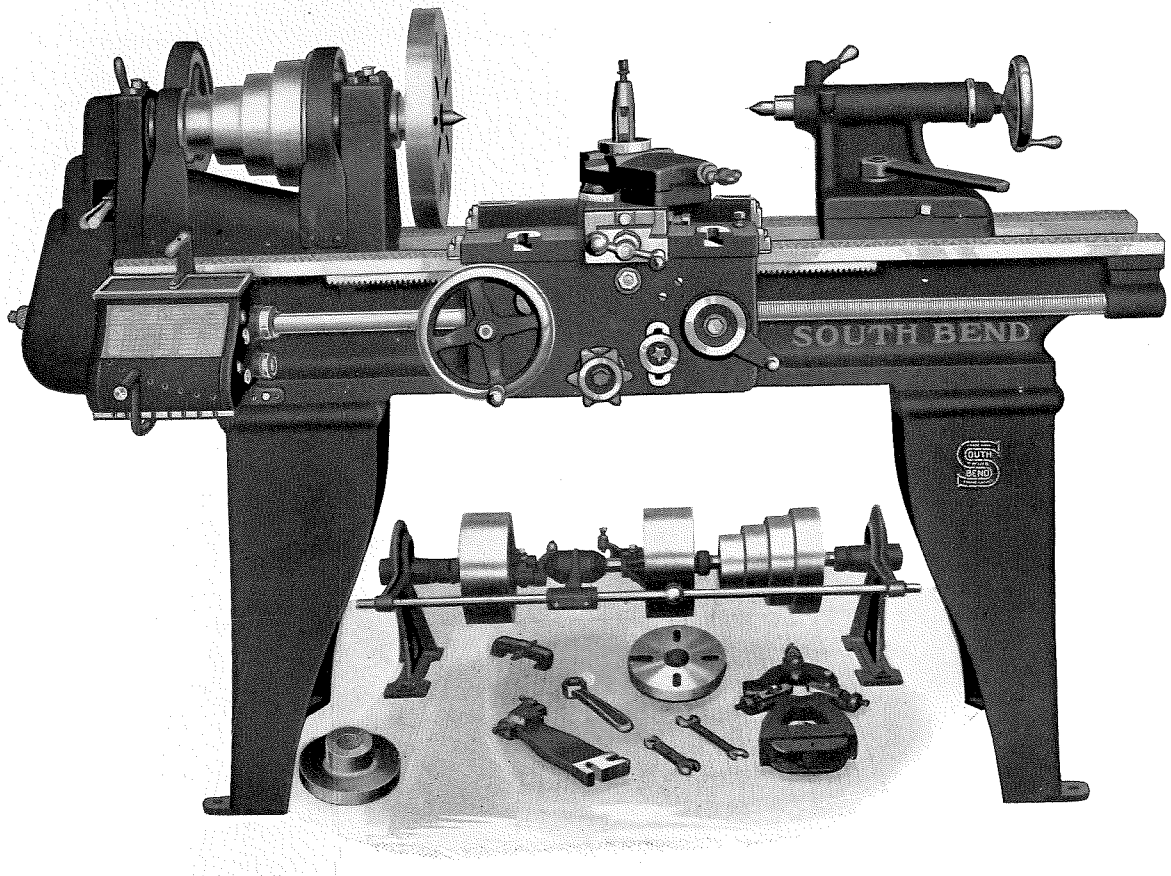
The Lead Screw is of a high quality steel, has a six pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 3⅛ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
34-A	13¼ in.	4 ft.	18 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Hail	1000 lbs.	1230 lbs.
34-B	13¼ in.	5 ft.	30 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Heald	1050 lbs.	1300 lbs.
34-C	13¼ in.	6 ft.	42 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Hire	1100 lbs.	1360 lbs.
34-D	13¼ in.	7 ft.	54 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Home	1150 lbs.	1430 lbs.
34-E	13¼ in.	8 ft.	66 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Husk	1200 lbs.	1500 lbs.



No. 65—13-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 65—13-Inch Swing—Quick Change Gear South Bend Lathe

Practical for precision work in manufacturing, machine shop and tool room

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 1½-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and two T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

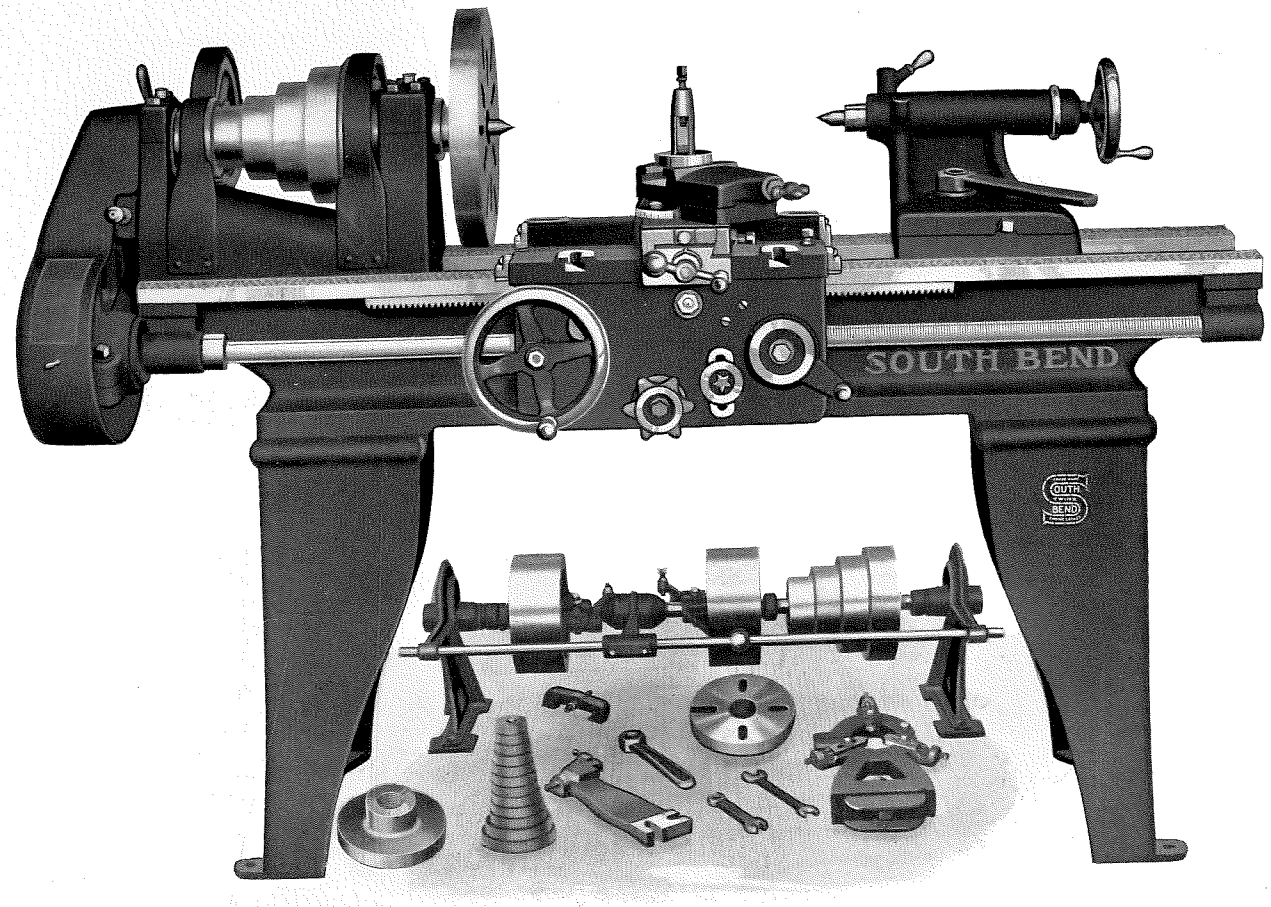
The Lead Screw is of a high quality steel, has a six pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 3⅛ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
65-A	13¼ in.	4 ft.	18 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Halt	1000 lbs.	1230 lbs.
65-B	13¼ in.	5 ft.	30 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Helm	1050 lbs.	1300 lbs.
65-C	13¼ in.	6 ft.	42 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Hoop	1100 lbs.	1360 lbs.
65-D	13¼ in.	7 ft.	54 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Hump	1150 lbs.	1430 lbs.
65-E	13¼ in.	8 ft.	66 in.	9 in.	1 in.	¾ H. P.	½ x 1⅛ in.	275 R. P. M.	Hymn	1200 lbs.	1500 lbs.



No. 37—15-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 37—15-Inch Swing—Standard Change Gear South Bend Lathe

A reliable tool, recommended for general manufacturing and machine work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 1¾-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignmemt. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1⅛-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

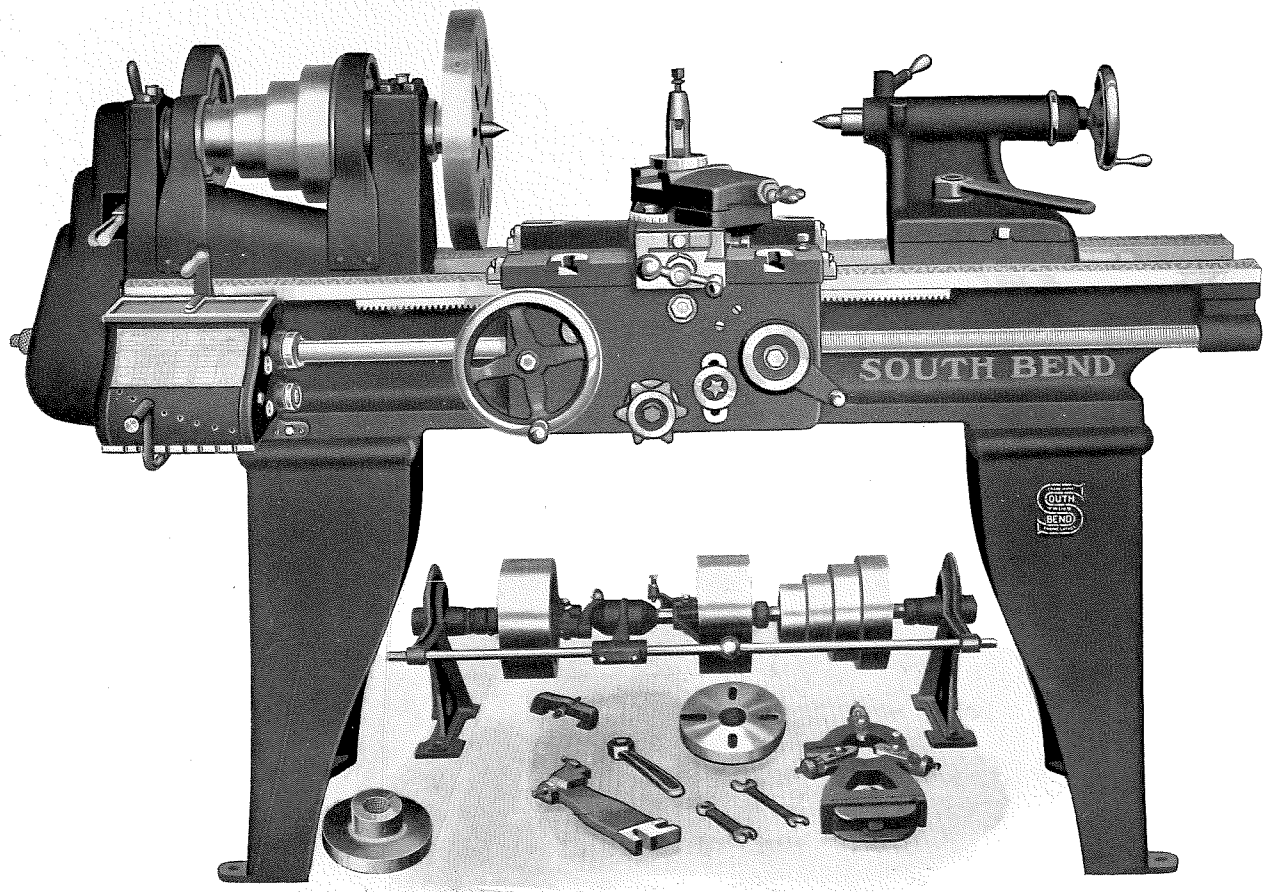
The Lead Screw is of a high quality steel, has a six pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 3⅜ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
37-B	15¼ in.	5 ft.	27 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Ideal	1400 lbs.	1650 lbs.
37-C	15¼ in.	6 ft.	39 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Image	1475 lbs.	1735 lbs.
37-D	15¼ in.	7 ft.	51 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Index	1550 lbs.	1830 lbs.
37-E	15¼ in.	8 ft.	63 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Iris	1660 lbs.	1925 lbs.
37-G	15¼ in.	10 ft.	87 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Issue	1825 lbs.	2125 lbs.



No. 67—15-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 67—15-Inch Swing—Quick Change Gear South Bend Lathe

A reliable tool for accurate work in the shop

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 1¾-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1⅛-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

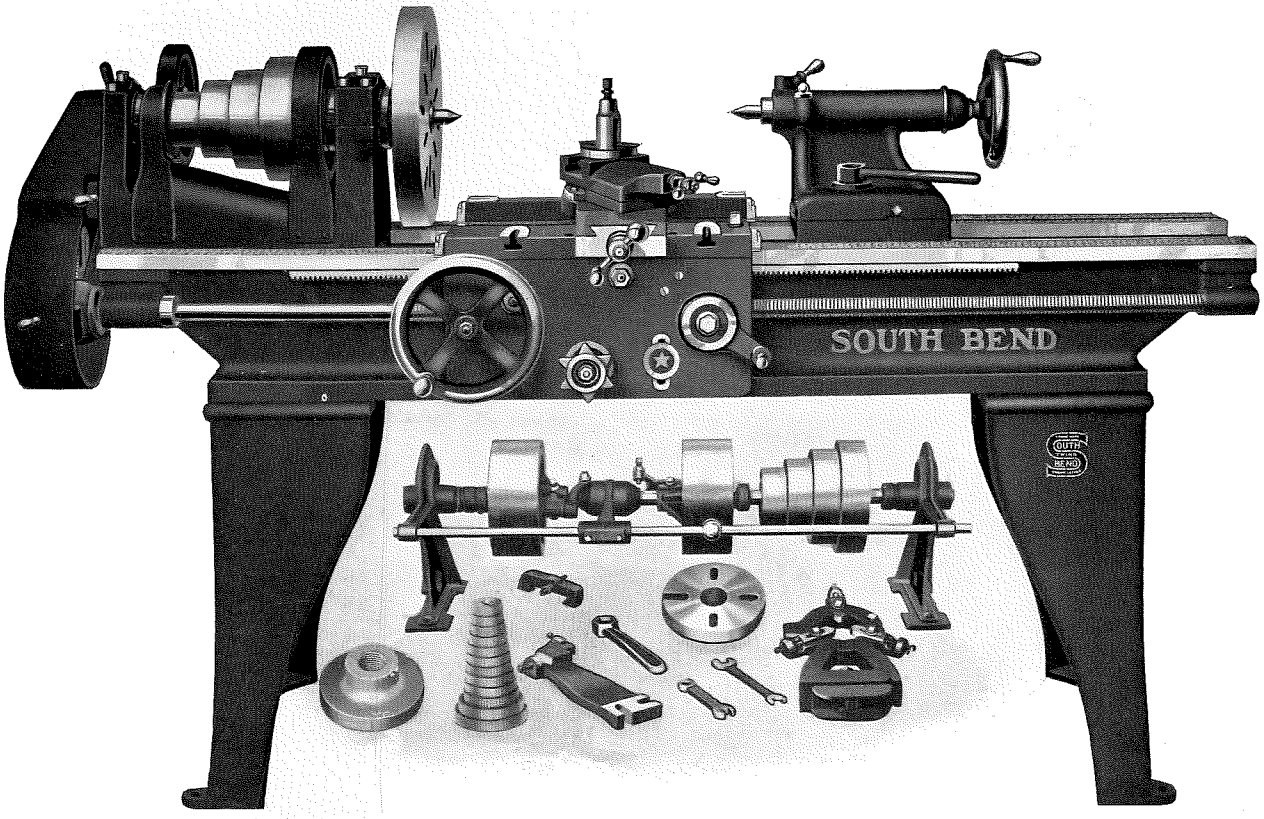
The Lead Screw is of a high quality steel, has a six pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 3⅜ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
67-B	15¼ in.	5 ft.	27 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Idle	1400 lbs.	1650 lbs.
67-C	15¼ in.	6 ft.	39 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Inca	1475 lbs.	1735 lbs.
67-D	15¼ in.	7 ft.	51 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Iron	1550 lbs.	1830 lbs.
67-E	15¼ in.	8 ft.	63 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Isle	1660 lbs.	1925 lbs.
67-G	15¼ in.	10 ft.	87 in.	10⅝ in.	1⅛ in.	1 H. P.	½ x 1⅛ in.	250 R. P. M.	Itch	1825 lbs.	2125 lbs.



No. 40—16-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 40—16-Inch Swing—Standard Change Gear South Bend Lathe

Recommended for manufacturing, for the Tool Room, and general all-round shop work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 2-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1 5/16-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

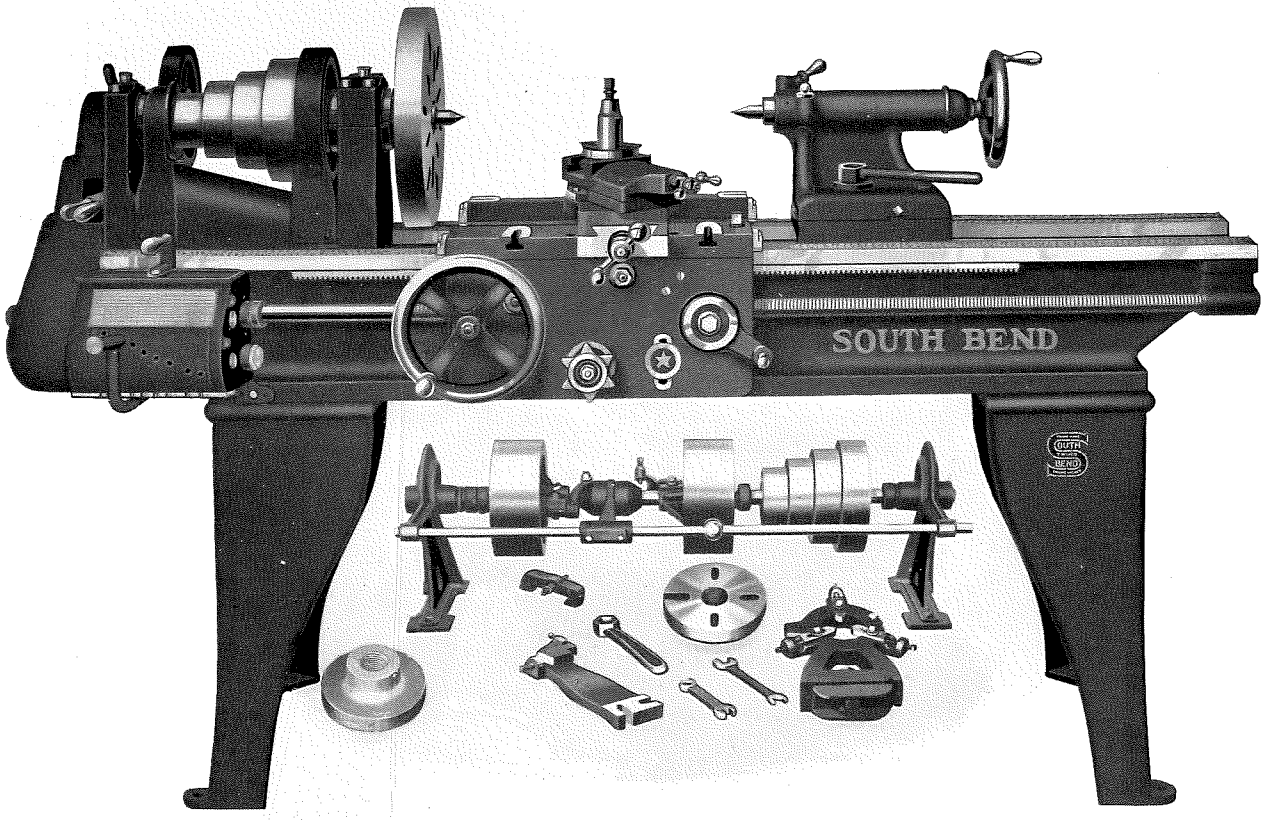
The Lead Screw is of a high quality steel, has a six pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 4 inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
40-C	16¼ in.	6 ft.	36 in.	11⅛ in.	1 5/16 in.	1 H. P.	⅝ x 1⅜ in.	225 R. P. M.	Jamb	1700 lbs.	1970 lbs.
40-D	16¼ in.	7 ft.	48 in.	11⅛ in.	1 5/16 in.	1 H. P.	⅝ x 1⅜ in.	225 R. P. M.	Jelly	1780 lbs.	2070 lbs.
40-E	16¼ in.	8 ft.	60 in.	11⅛ in.	1 5/16 in.	1 H. P.	⅝ x 1⅜ in.	225 R. P. M.	Jinks	1860 lbs.	2180 lbs.
40-G	16¼ in.	10 ft.	84 in.	11⅛ in.	1 5/16 in.	1 H. P.	⅝ x 1⅜ in.	225 R. P. M.	Joist	2020 lbs.	2390 lbs.
40-H	16¼ in.	12 ft.	108 in.	11⅛ in.	1 5/16 in.	1 H. P.	⅝ x 1⅜ in.	225 R. P. M.	Jute	2280 lbs.	2750 lbs.



No. 69—16-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 69—16-Inch Swing—Quick Change Gear South Bend Lathe

An excellent lathe for manufacturing and tool room work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 2-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1 5/16-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

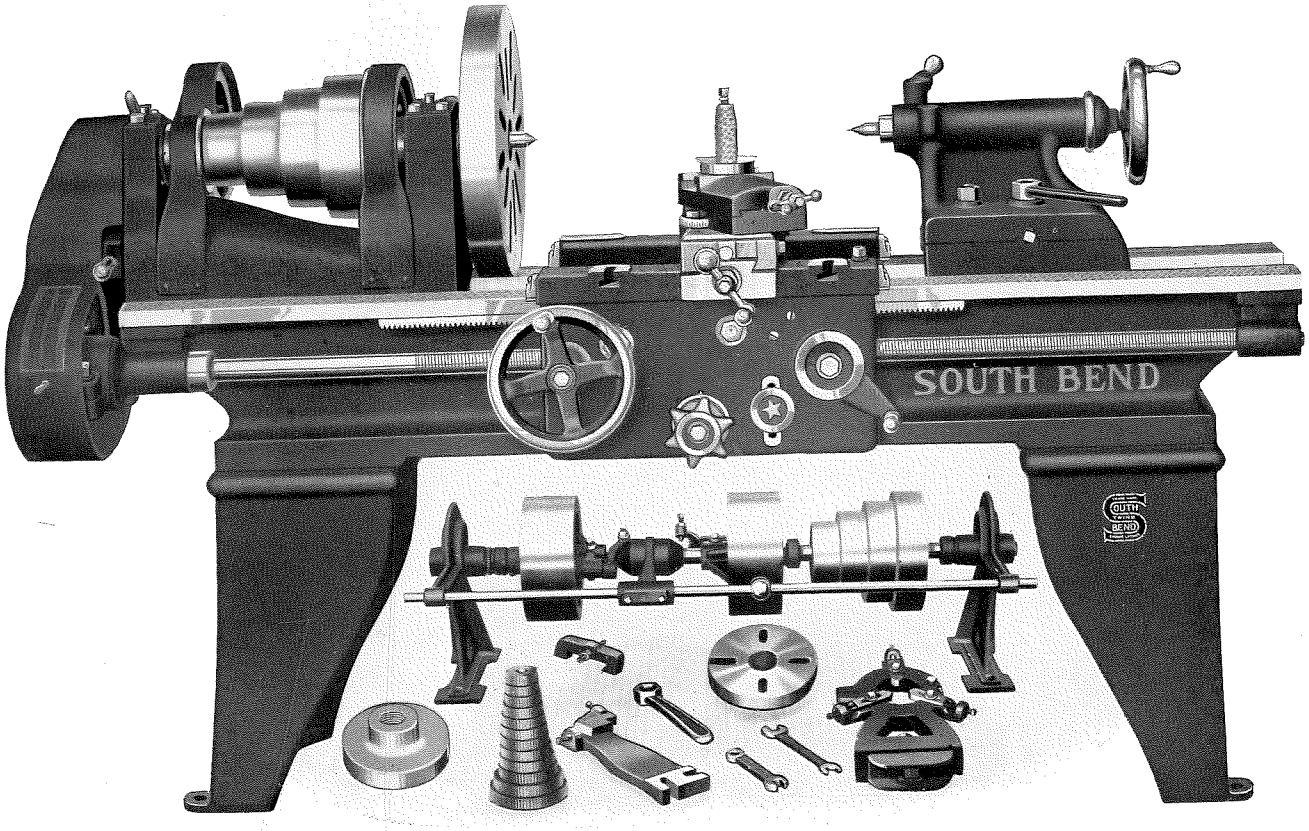
The Lead Screw is of a high quality steel, has a six pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 4 inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
69-C	16 1/4 in.	6 ft.	36 in.	11 1/8 in.	1 5/16 in.	1 H. P.	5/8 x 1 3/8 in.	225 R. P. M.	Jade	1700 lbs.	1970 lbs.
69-D	16 1/4 in.	7 ft.	48 in.	11 1/8 in.	1 5/16 in.	1 H. P.	5/8 x 1 3/8 in.	225 R .P. M.	Jerk	1780 lbs.	2070 lbs.
69-E	16 1/4 in.	8 ft.	60 in.	11 1/8 in.	1 5/16 in.	1 H. P.	5/8 x 1 3/8 in.	225 R. P. M.	Jibe	1860 lbs.	2180 lbs.
69-G	16 1/4 in.	10 ft.	84 in.	11 1/8 in.	1 5/16 in.	1 H. P.	5/8 x 1 3/8 in.	225 R. P. M.	Jorn	2020 lbs.	2390 lbs.
69-H	16 1/4 in.	12 ft.	108 in.	11 1/8 in.	1 5/16 in.	1 H. P.	5/8 x 1 3/8 in.	225 R. P. M.	Jump	2280 lbs.	2750 lbs.



No. 45—18-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 45—18-Inch Swing—Standard Change Gear South Bend Lathe

Has the power for manufacturing and general all-round work in the machine shop

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 2½-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1⅜-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

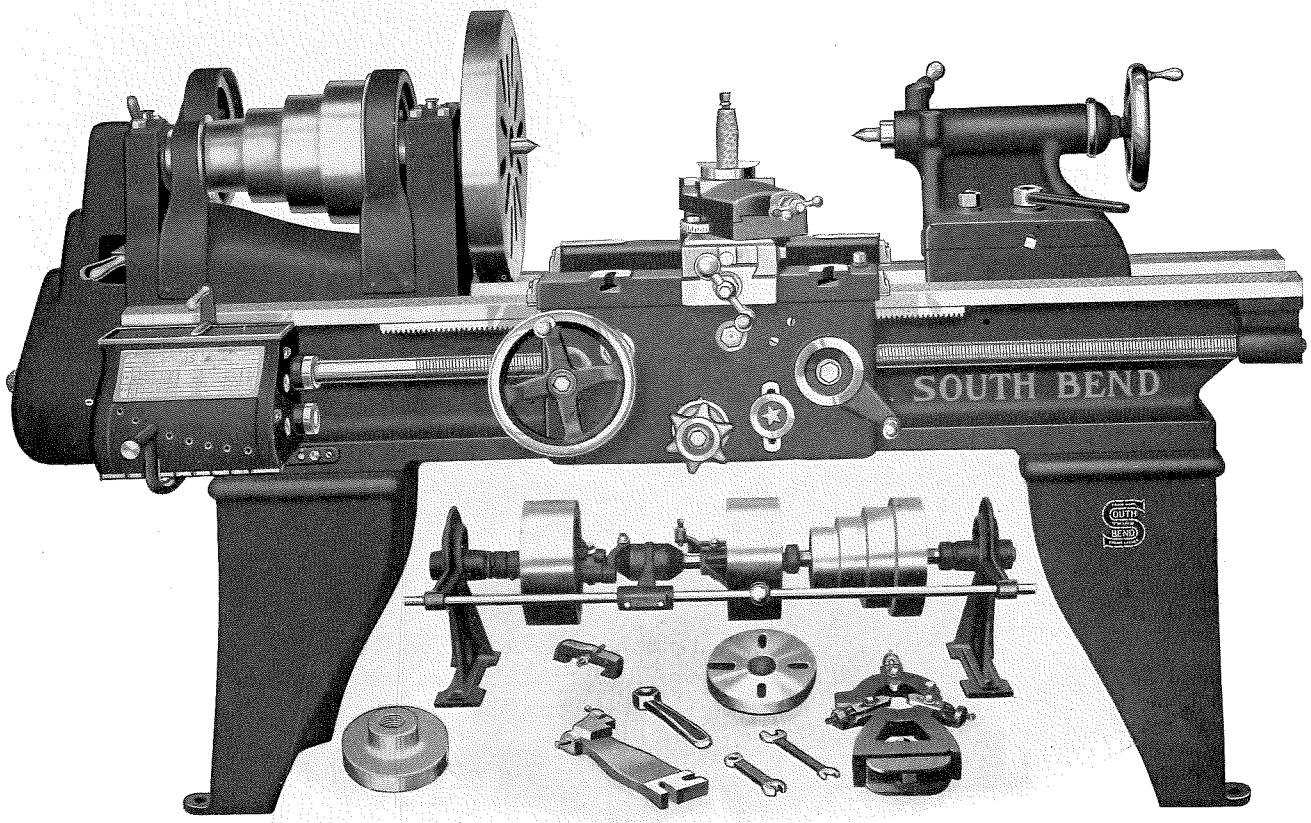
The Lead Screw is of a high quality steel, has a four pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 4¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
45-C	18¼ in.	6 ft.	31 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kafir	2300 lbs.	2600 lbs.
45-D	18¼ in.	7 ft.	43 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Khond	2400 lbs.	2730 lbs.
45-E	18¼ in.	8 ft.	55 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Knack	2500 lbs.	2860 lbs.
45-G	18¼ in.	10 ft.	79 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kohl	2700 lbs.	3210 lbs.
45-H	18¼ in.	12 ft.	103 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kurd	3000 lbs.	3520 lbs.
45-K	18¼ in.	14 ft.	127 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kvine	3400 lbs.	3800 lbs.



No. 71—18-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 71—18-Inch Swing—Quick Change Gear South Bend Lathe

A powerful lathe recommended for accurate machine work of all kinds

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 2½-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1⅜-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 3 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 3 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

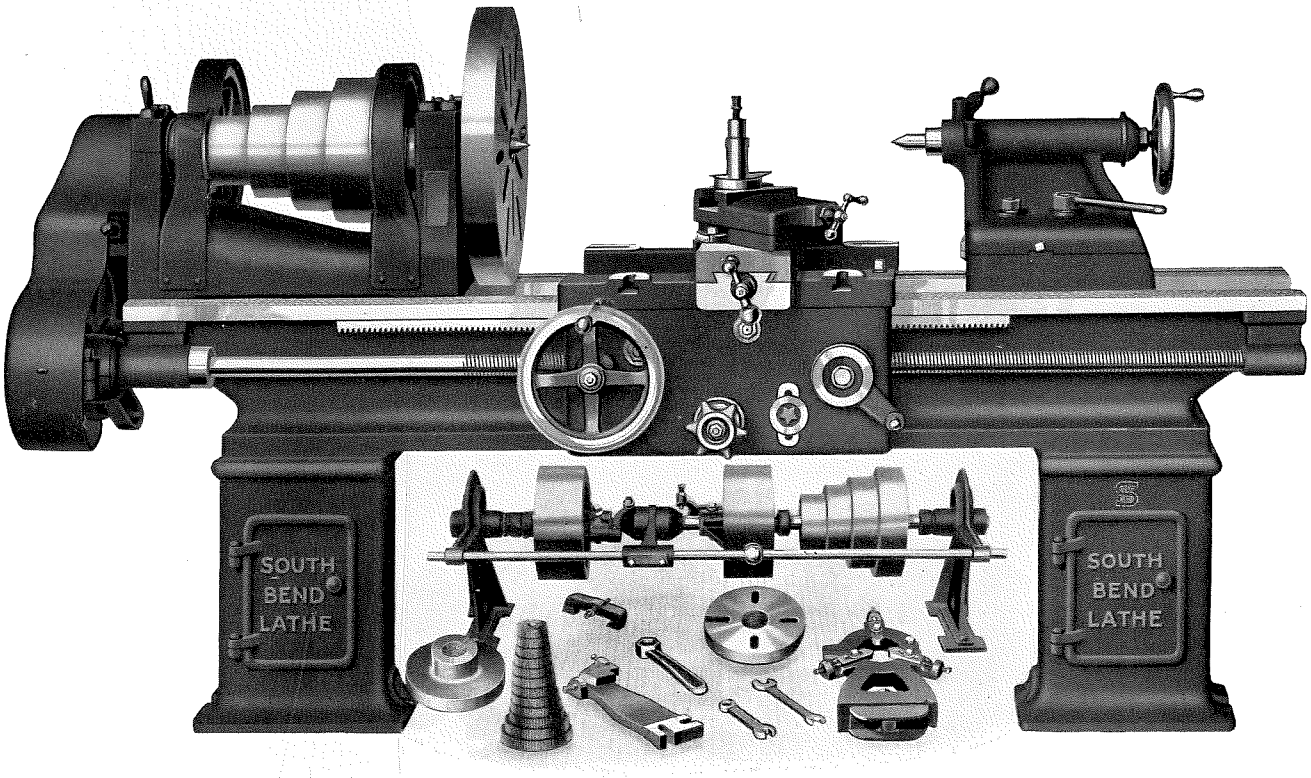
The Lead Screw is of a high quality steel, has a four pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 4¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
71-C	18¼ in.	6 ft.	31 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Katy	2300 lbs.	2600 lbs.
71-D	18¼ in.	7 ft.	43 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Keel	2400 lbs.	2730 lbs.
71-E	18¼ in.	8 ft.	55 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kilt	2500 lbs.	2860 lbs.
71-G	18¼ in.	10 ft.	79 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Knot	2700 lbs.	3210 lbs.
71-H	18¼ in.	12 ft.	103 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kris	3000 lbs.	3520 lbs.
71-K	18¼ in.	14 ft.	127 in.	12⅝ in.	1⅜ in.	2 H. P.	⅝ x 1⅜ in.	200 R. P. M.	Kute	3400 lbs.	3810 lbs.



No. 47—21-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 47—21-Inch Swing—Standard Change Gear South Bend Lathe

An excellent tool for production and general shop work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 3-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1½-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 4 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 4 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

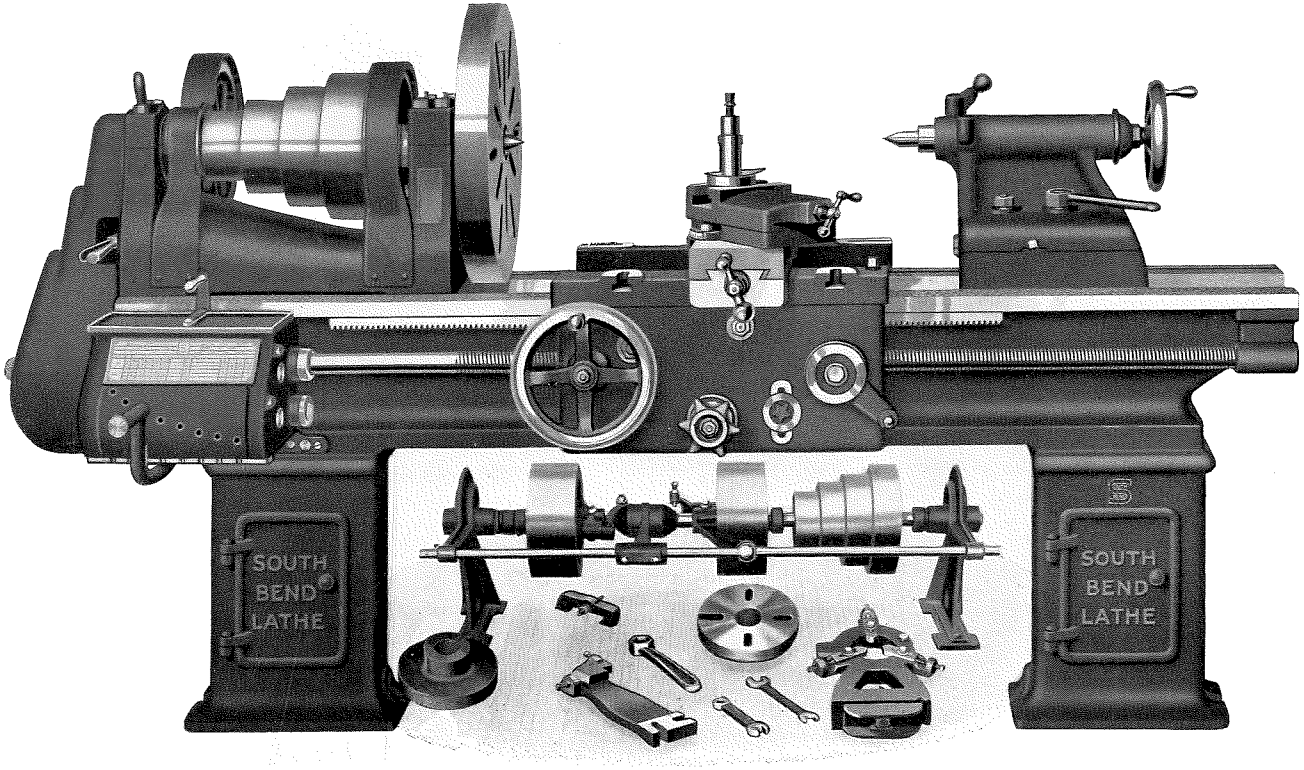
The Lead Screw is of a high quality steel, has a four pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 5¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
47-D	21¼ in.	7 ft.	36 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Paint	3400 lbs.	4050 lbs.
47-E	21¼ in.	8 ft.	48 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Pear	3600 lbs.	4350 lbs.
47-G	21¼ in.	10 ft.	72 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Photo	3850 lbs.	4725 lbs.
47-H	21¼ in.	12 ft.	96 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Pike	4210 lbs.	5200 lbs.
47-K	21¼ in.	14 ft.	120 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Plate	4430 lbs.	5500 lbs.



No. 73—21-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 73—21-Inch Swing—Quick Change Gear South Bend Lathe

An excellent all-round lathe for the general machine shop

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 3-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1½-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 4 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 4 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

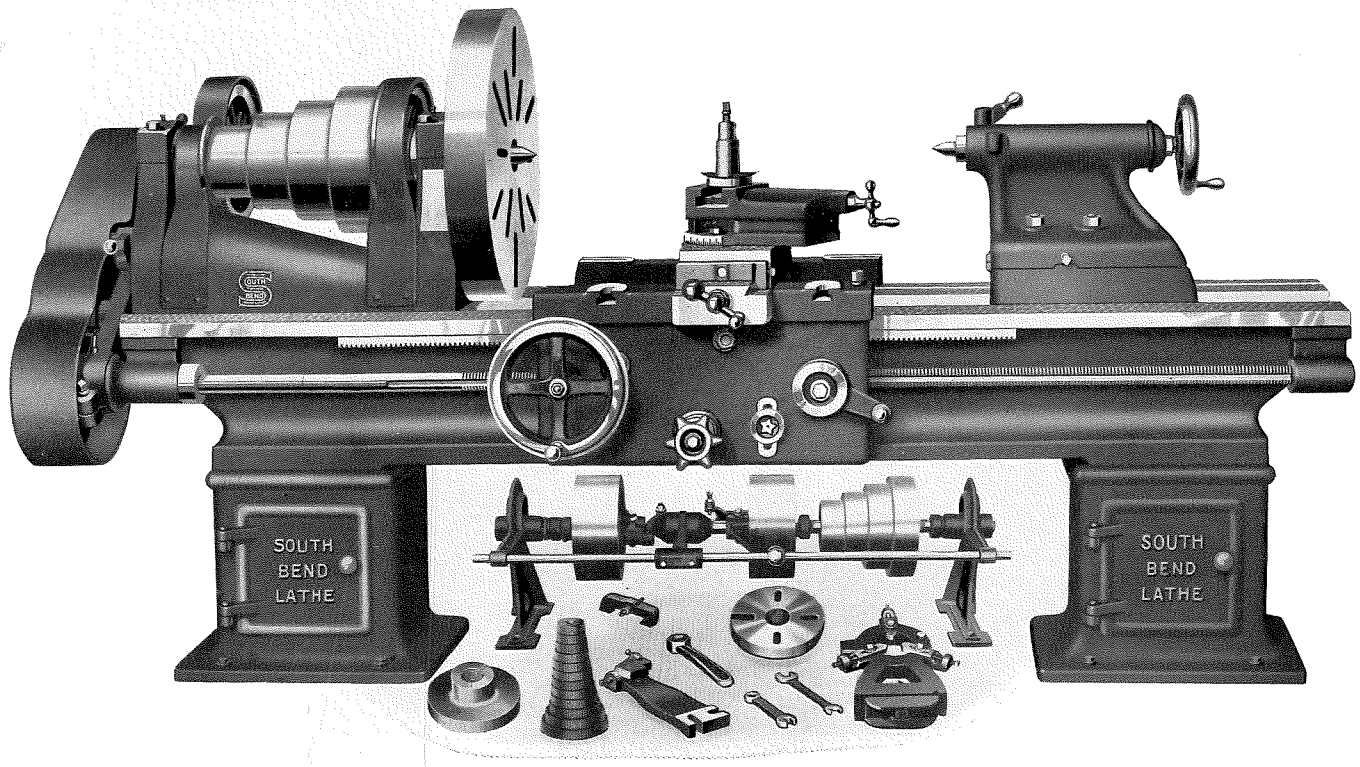
The Lead Screw is of a high quality steel, has a four pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 5¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
73-D	21¼ in.	7 ft.	36 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Pate	3400 lbs.	4050 lbs.
73-E	21¼ in.	8 ft.	48 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Pelt	3600 lbs.	4350 lbs.
73-G	21¼ in.	10 ft.	72 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Plot	3850 lbs.	4725 lbs.
73-H	21¼ in.	12 ft.	96 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Port	4210 lbs.	5200 lbs.
73-K	21¼ in.	14 ft.	120 in.	15⅛ in.	1½ in.	3 H. P.	¾ x 1⅝ in.	175 R. P. M.	Puff	4430 lbs.	5500 lbs.



No. 54—24-Inch Swing—Standard Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 54—24-Inch Swing—Standard Change Gear South Bend Lathe

A rigidly built lathe for heavy machine work

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 3½-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1¾-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 4 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 4 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

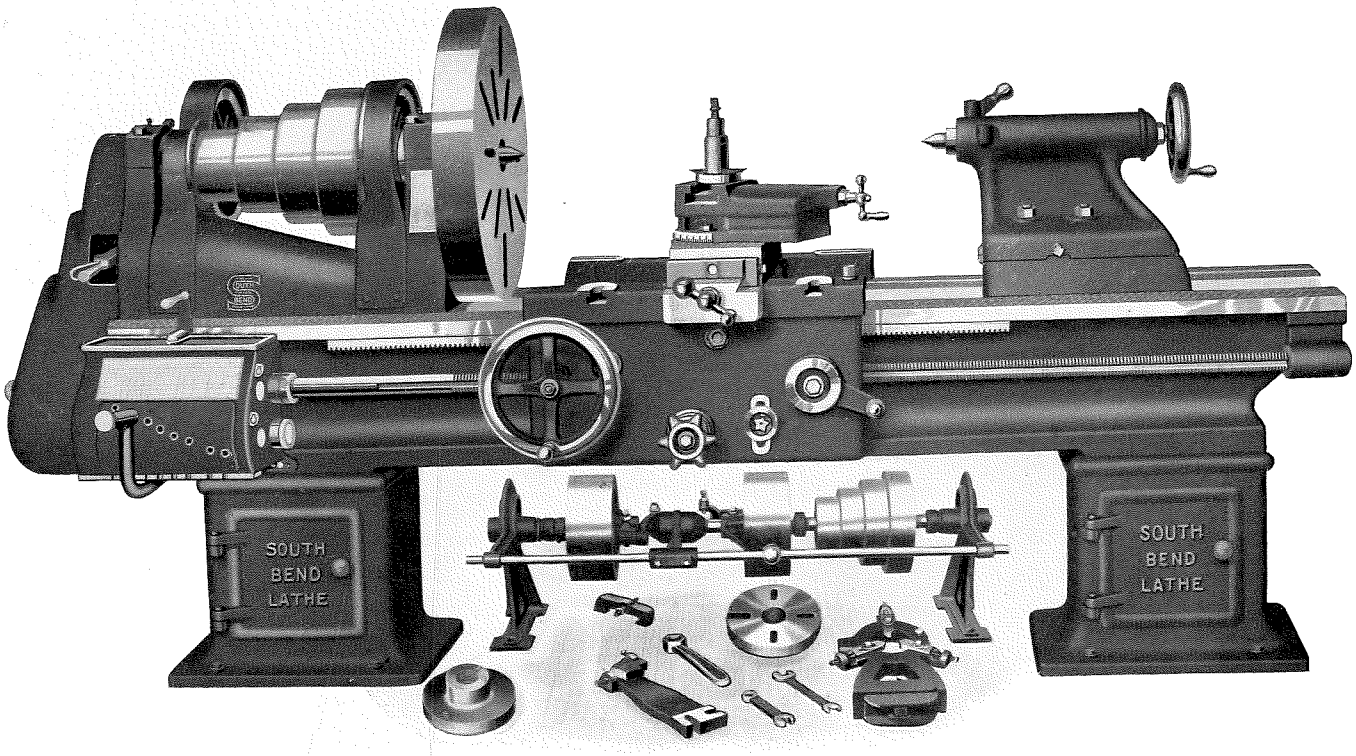
The Lead Screw is of a high quality steel, has a four pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

Thread Cutting. The lathe is indexed to cut the following standard threads per inch: 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 36 and 40. By compounding the gears furnished many other threads can be cut. Gears for longitudinal and cross feeds are included in regular equipment.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 5¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, set of change gears, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
54-E	24¼ in.	8 ft.	43 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Race	4400 lbs.	5200 lbs.
54-G	24¼ in.	10 ft.	67 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rend	4650 lbs.	5600 lbs.
54-H	24¼ in.	12 ft.	91 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rise	5050 lbs.	6100 lbs.
54-K	24¼ in.	14 ft.	115 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Roat	5320 lbs.	6500 lbs.
54-M	24¼ in.	16 ft.	139 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Ring	5600 lbs.	6900 lbs.



No. 75—24-Inch Swing—Quick Change Gear Lathe

Regular equipment, as illustrated under lathe, is included in the price of the lathe

No. 75—24-Inch Swing—Quick Change Gear South Bend Lathe

Gives excellent service for general all-round work in the machine shop

The Bed is a heavy semi-steel casting machined, seasoned, finished machined and hand scraped to a perfect bearing. It is cross ribbed by heavy cast box braces. The three V-ways and one flat way are hand scraped and serve as a perfect bearing for aligning the head stock, tail stock and carriage of the lathe. See page 5.

The Head Stock is back geared. A four-step cone for a 3½-inch belt, gives eight changes of spindle speeds. The head casting is webbed underneath. The head stock and the tail stock are bored in a special machine fitted with special jigs which insure perfect alignment. See page 45.

The Spindle is made of special high carbon spindle steel, ground to accurate dimensions. It has a 1¾-inch hole its entire length which permits the machining of long bars and rods through a Universal chuck or through the draw-in chuck attachment. A tapered hole in the spindle nose provides for a Morse No. 4 taper lathe center.

The Spindle Bearings are made of phosphor bronze castings with an alloy to meet U. S. Government specifications. These bronze boxes are hand scraped to a perfect bearing and are adjustable for wear. Patent oil cups in the head stock caps prevent dust from getting into the bearings.

The Tail Stock top can be set over for turning taper. It is of modern design and allows the compound rest to travel parallel to the axis of the lathe spindle. The tail stock spindle is fitted with a No. 4 Morse taper center that is self ejecting.

The Apron is provided with automatic cross feed and automatic longitudinal feed, only one of which can be engaged at a time. A safety device in the apron prevents the half nuts from being clamped to the lead screw while either of the automatic feeds is in action, and vice versa, it prevents the automatic feeds from being used while the half nuts are clamped to the lead screw for thread cutting. See page 6.

Carriage. The saddle and apron combined is called the carriage. The carriage is fitted to the ways of the bed and is hand scraped on the sliding surfaces for perfect alignment. The saddle has a wide, deep bridge and four T-slots for clamping work while milling and boring. A locking device is fitted to the front of the saddle so that the carriage can be locked when using the cross feed. The carriage has four felt oil pads attached for oiling the V-ways.

The Lead Screw is of a high quality steel, has a four pitch Acme thread that has been cut on a special machine equipped with a Pratt & Whitney master lead screw. This insures accuracy, so that precision taps, thread gauges, etc., can be cut. The threads of the lead screw are used for thread cutting only, as both of the automatic feeds are driven by a spline in the lead screw. See pages 5 and 6.

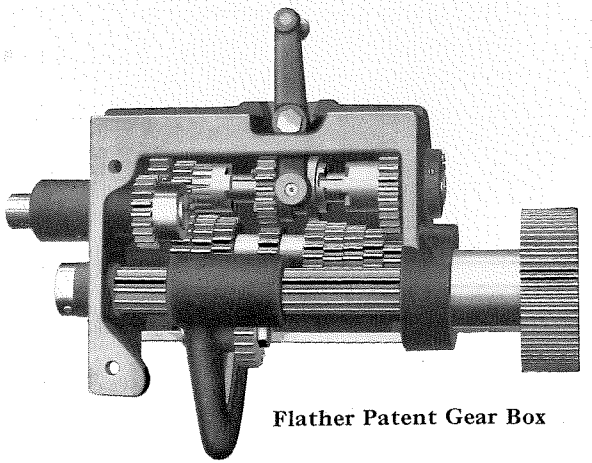
The Quick Change Gear Box provides forty-eight changes for threads and feeds. The following threads per inch, right or left, can be cut without removing a gear: 2, 2¼, 2½, 2¾, 2⅞, 3, 3¼, 3½, 4, 4½, 5, 5½, 5¾, 6, 6½, 7, 8, 9, 10, 11, 11½, 12, 13, 14, 16, 18, 20, 22, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112. See page 42.

The Compound Rest is graduated in 180 degrees so that any angle on the horizontal plane may be obtained for machining fine, accurate work. The compound rest screw has graduated micrometer collar reading in thousandths of an inch. The maximum travel of the compound rest is 5¾ inches. See page 7.

The Equipment as shown under cut is included in the price of lathe and consists of double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

No. of Lathe	Swing Over Bed	Length of Bed	Between Centers	Swing Over Carriage	Hole in Spindle	Horse Power Required	Lathe Tool Recommended	Countershaft Speed	Code Word	Weight on Skids Crated	Weight Boxed for Export
75-E	24¼ in.	8 ft.	43 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rail	4400 lbs.	5200 lbs.
75-G	24¼ in.	10 ft.	67 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rein	4650 lbs.	5600 lbs.
75-H	24¼ in.	12 ft.	91 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rich	5050 lbs.	6100 lbs.
75-K	24¼ in.	14 ft.	115 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rock	5320 lbs.	6500 lbs.
75-M	24¼ in.	16 ft.	139 in.	17⅜ in.	1¾ in.	3 H. P.	¾ x 1⅝ in.	150 R. P. M.	Rude	5600 lbs.	6900 lbs.

Quick Change Gear Mechanism for Screw Threads and Feeds



Flather Patent Gear Box

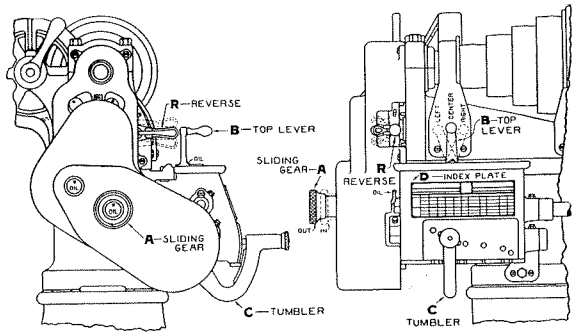
The cone of eight steel gears is mounted upon a shaft, any gear can be instantly engaged by simply moving the lever in front of the box. On another shaft located above the cone of gears is a double clutch gear, controlled by the small lever on top of the box. The moving of this lever to three different positions increases the number of changes obtained by the lower lever to twenty-four, which number is doubled by moving the sliding gear at the end of the lathe, making forty-eight in all.

Range of Threads

48 Threads of different pitch can be cut with this Quick Change Gear Box without changing a gear, as follows: **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, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, and 112 per inch.** If threads other than the ones enumerated above are to be cut, the addition of one gear will allow another series of 48 threads to be cut.

Range of Automatic Feeds

Any automatic longitudinal and cross feed, fine or coarse, can be obtained instantly through this gear box without changing a gear.



Front and End Elevation of Gear Box

The above cut illustrates the important parts of the Quick Change Gear Mechanism. Instructions for operating the gear mechanism will be found in the hand book on lathe work, which is included with the equipment of each lathe.

SOUTH BEND LATHE WORKS — **SOUTH BEND, INDIANA, U. S. A.**

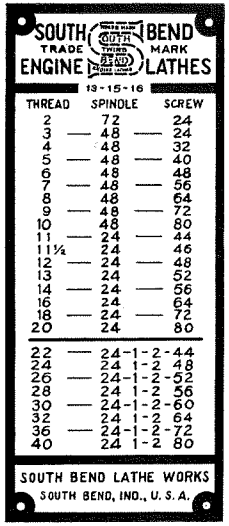
PATENT Nº 810634. — QUICK CHANGE GEAR

LONGITUDINAL FEEDS 2¾ — TIMES THREADS PER INCH

SLIDING GEAR	TOP LEVER	THREADS PER INCH								
IN	LEFT	2	2¼	2½	2¾	2⅞	3	3¼	3½	
	CENTER	4	4½	5	5½	5¾	6	6½	7	
	RIGHT	8	9	10	11	11½	12	13	14	
OUT	LEFT	16	18	20	22	23	24	26	28	
	CENTER	32	36	40	44	46	48	52	56	
	RIGHT	64	72	80	88	92	96	104	112	

Index Plate—Quick Change Gear Lathes

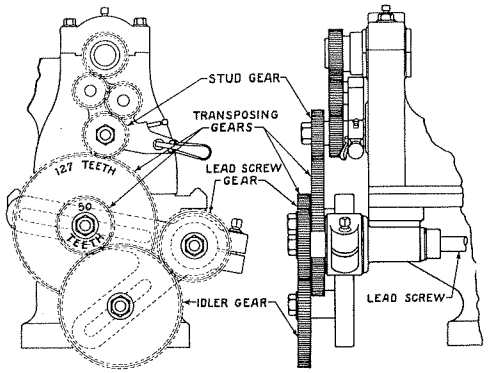
The above cut illustrates the index plate which is attached to each Quick Change Gear South Bend Lathe. This plate enables the operator to properly adjust the Quick Change Gear Mechanism for the automatic cross and longitudinal feeds and for cutting screw threads.



Index Plate for Standard Change Gear Lathes

A metal index plate as shown in the above cut is attached to each Standard Change Gear Lathe. This plate enables the operator to select the proper gears for cutting different pitches of screw threads.

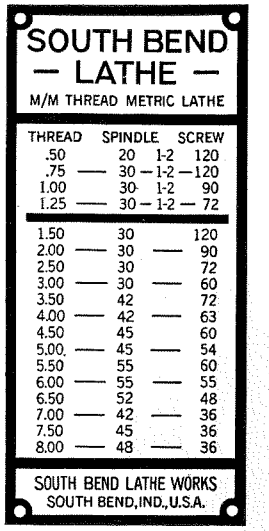
All standard screw threads, from 2 to 40 threads per inch, including the 11½-inch pipe thread can be cut by substituting the proper size gears as shown on the index plate. Threads other than the ones enumerated on the plate can be cut by compounding the gears furnished with the lathe. A set of automatic feed gears is included with the equipment of every Standard Change Gear South Bend Lathe.



Transposing Gears for Cutting Metric Threads

On Standard or Quick Change Gear Lathes Equipped with Acme Standard Lead Screw

To cut metric threads on a Standard or Quick Change Gear South Bend Lathe, a set of transposing gears is required. Included in the set is a large gear having 127 teeth and a smaller gear having 50 teeth, as shown in the above illustration. The 127-tooth gear meshes with the stud gear and the 50-tooth gear connects with an idler gear, which in turn meshes with the lead screw gear.



The Metric Thread Index

Cutting Metric Threads on a Lathe with a Metric Lead Screw

When a lathe is intended to cut metric threads exclusively, it is equipped with a metric lead screw. The index plate illustrated herewith shows the arrangement of gearing necessary for cutting metric threads on the 18-inch, 21-inch, and 24-inch South Bend Standard Change Gear Lathes that are equipped with a metric lead screw instead of an Acme lead screw.

Prices of Transposing Gears

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
For Standard Change Gear Lathes	$10.00	$12.00	$15.00	$18.00	$18.00	$24.00	$30.00	$32.00
For Quick Change Gear Lathes	20.00	24.00	30.00	36.00	36.00	48.00	60.00	64.00

Metric Lead Screw in Lieu of Acme Lead Screw

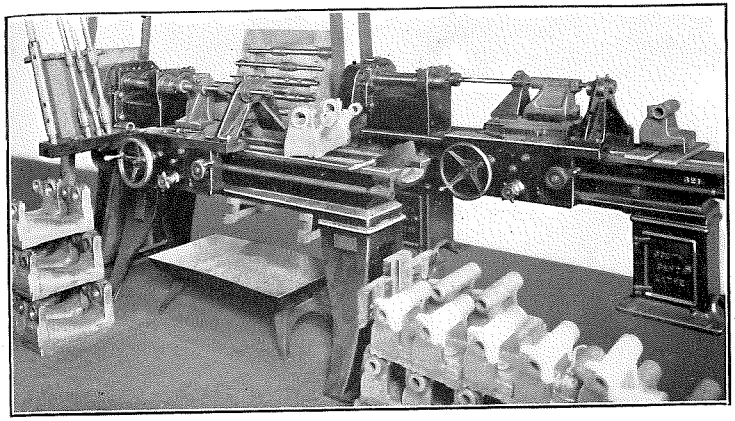
Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Price of Metric Lead Screw in Lieu of Acme Lead Screw	$3.00	$3.00	$4.00	$5.00	$6.00	$7.00	$8.50	$10.00

SUMMARY OF STANDARD AND QUICK CHANGE GEAR LATHES

Countershaft Driven

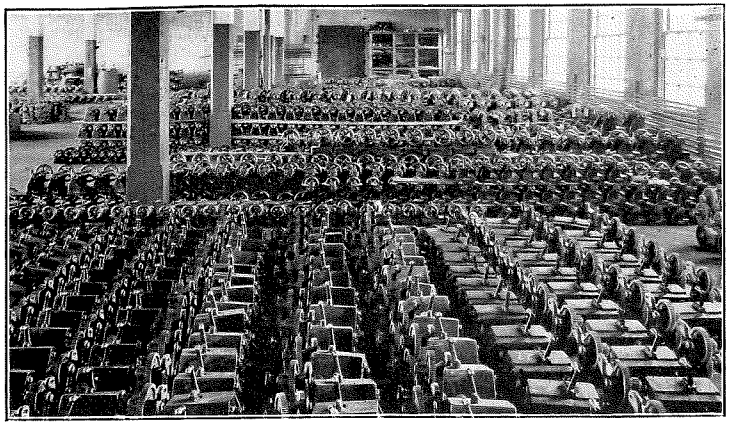
Prices F. O. B. Cars South Bend, Indiana — Skidded and Crated for Domestic Shipment

Swing over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole in Spindle Inches	Weight on Skids Crated	Horse-Power Required	Standard Change Gear Lathe		Quick Change Gear Lathe	
						Catalog Number	Code Word	Catalog Number	Code Word
9-Inch Lathes									
9¼	2½	10	¾	440	⅓ H. P.	25-X	Dally	61-X	Damp
9¼	3	16	¾	460	⅓ H. P.	25-Y	Dare	61-Y	Dirt
9¼	3½	22	¾	480	⅓ H. P.	25-Z	Dean	61-Z	Dort
9¼	4	28	¾	500	⅓ H. P.	25-A	Dell	61-A	Dust
11-Inch Lathes									
11¼	3	14	⅞	630	½ H. P.	27-Y	Fare	63-Y	Fact
11¼	3½	20	⅞	655	½ H. P.	27-Z	Fate	63-Z	Fern
11¼	4	26	⅞	680	½ H. P.	27-A	Fend	63-A	Film
11¼	5	38	⅞	760	½ H. P.	27-B	Foam	63-B	Flax
13-Inch Lathes									
13¼	4	18	1	1000	¾ H. P.	34-A	Hail	65-A	Halt
13¼	5	30	1	1050	¾ H. P.	34-B	Heald	65-B	Helm
13¼	6	42	1	1100	¾ H. P.	34-C	Hire	65-C	Hoop
13¼	7	54	1	1150	¾ H. P.	34-D	Home	65-D	Hump
13¼	8	66	1	1200	¾ H. P.	34-E	Husk	65-E	Hymn
15-Inch Lathes									
15¼	5	27	1⅛	1400	1 H. P.	37-B	Ideal	67-B	Idle
15¼	6	39	1⅛	1475	1 H. P.	37-C	Image	67-C	Inca
15¼	7	51	1⅛	1550	1 H. P.	37-D	Index	67-D	Iron
15¼	8	63	1⅛	1660	1 H. P.	37-E	Iris	67-E	Isle
15¼	10	87	1⅛	1825	1 H. P.	37-G	Issue	67-G	Itch
16-Inch Lathes									
16¼	6	36	1 5/16	1700	1 H. P.	40-C	Jamb	69-C	Jade
16¼	7	48	1 5/16	1780	1 H. P.	40-D	Jelly	69-D	Jerk
16¼	8	60	1 5/16	1860	1 H. P.	40-E	Jinks	69-E	Jibe
16¼	10	84	1 5/16	2020	1 H. P.	40-G	Joist	69-G	Jorn
16¼	12	108	1 5/16	2280	1 H. P.	40-H	Jute	69-H	Jump
18-Inch Lathes									
18¼	6	31	1⅜	2300	2 H. P.	45-C	Kafir	71-C	Katy
18¼	7	43	1⅜	2400	2 H. P.	45-D	Khond	71-D	Keel
18¼	8	55	1⅜	2500	2 H. P.	45-E	Knack	71-E	Kilt
18¼	10	79	1⅜	2700	2 H. P.	45-G	Kohl	71-G	Knot
18¼	12	103	1⅜	3000	2 H. P.	45-H	Kurd	71-H	Kris
18¼	14	127	1⅜	3400	2 H. P.	45-K	Kvine	71-K	Kute
21-Inch Lathes									
21¼	7	36	1½	3400	3 H. P.	47-D	Paint	73-D	Pate
21¼	8	48	1½	3600	3 H. P.	47-E	Pear	73-E	Pelt
21¼	10	72	1½	3850	3 H. P.	47-G	Photo	73-G	Plot
21¼	12	96	1½	4210	3 H. P.	47-H	Pike	73-H	Port
21¼	14	120	1½	4430	3 H. P.	47-K	Plate	73-K	Puff
24-Inch Lathes									
24¼	8	43	1¾	4400	3 H. P.	54-E	Race	75-E	Rail
24¼	10	67	1¾	4650	3 H. P.	54-G	Rend	75-G	Rein
24¼	12	91	1¾	5050	3 H. P.	54-H	Rise	75-H	Rich
24¼	14	115	1¾	5320	3 H. P.	54-K	Roat	75-K	Rock
24¼	16	139	1¾	5600	3 H. P.	54-M	Ring	75-M	Rude



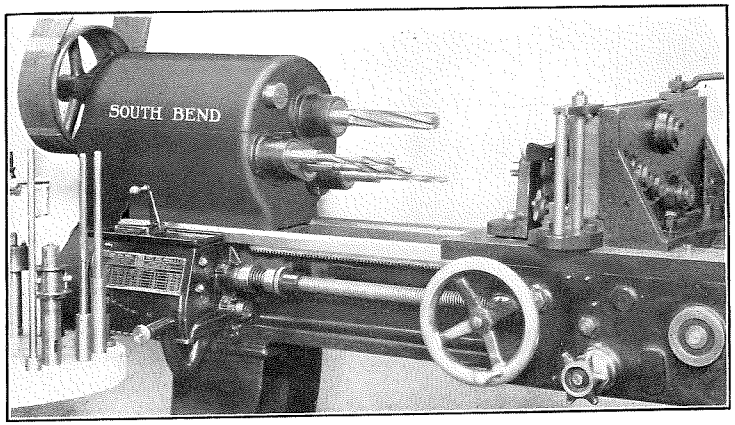
Boring Head and Tail Stocks on Special Lathes

The head stocks and tail stocks are bored, reamed, faced and tapped in quantities of one hundred at a time, insuring accuracy, interchangeability and increased production. Every head stock and tail stock is finished within .001 of an inch. We have one of these machines for each size lathe.



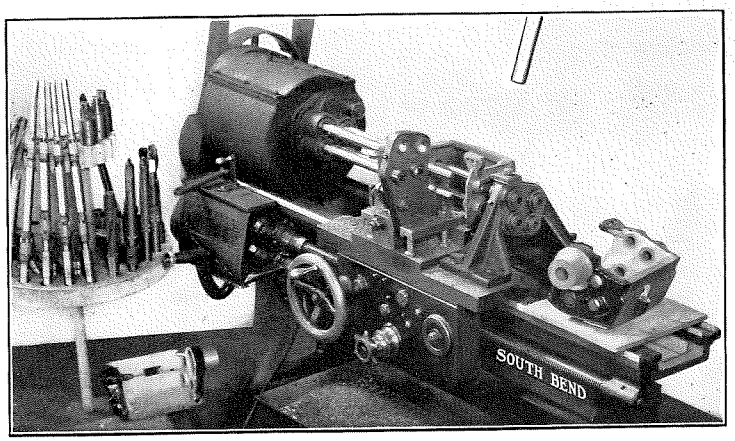
Stock Room Showing 1000 Lathe Units Assembled

These lathe units have all been machined on special machines equipped with jigs and fixtures which insures accuracy and interchangeability, increases production, avoids mistakes and permits quantity in manufacturing.



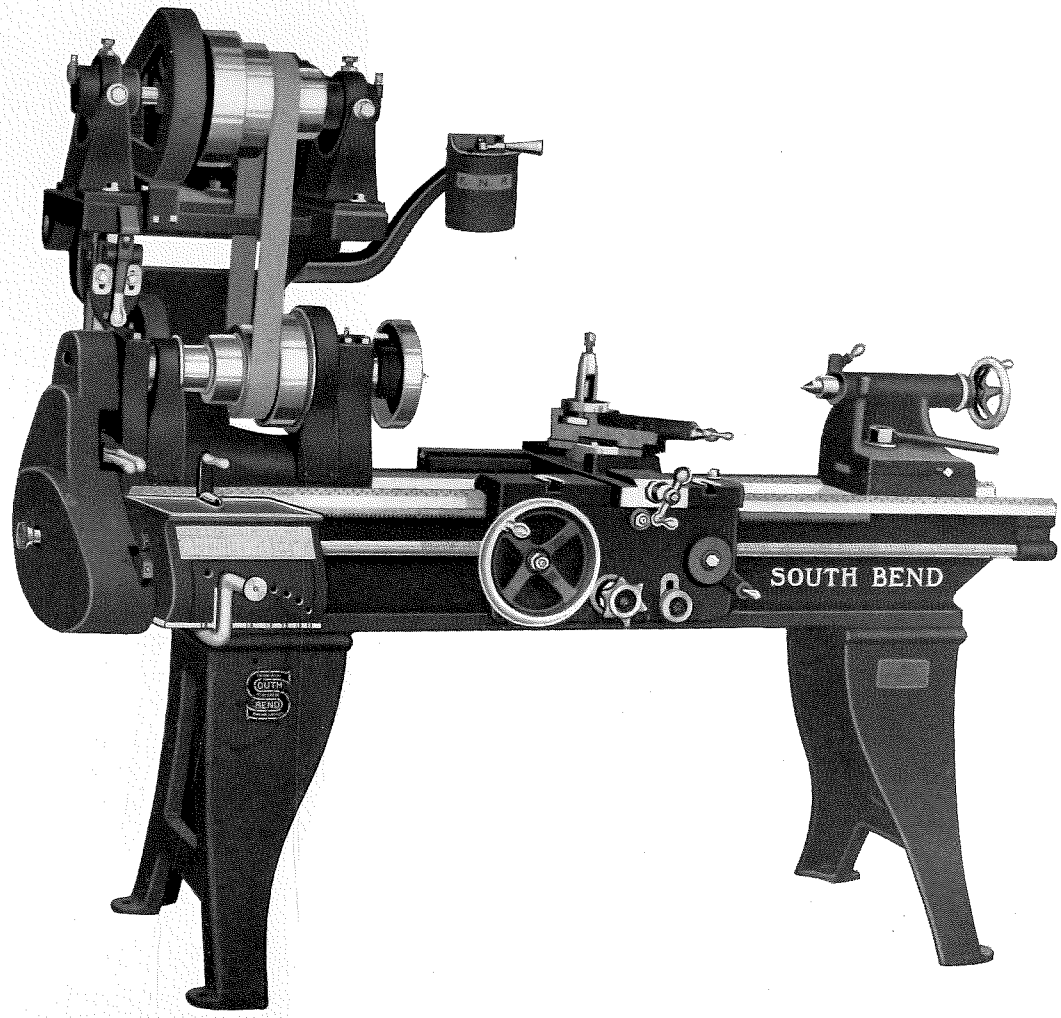
Boring Lathe Aprons on a Jig in the Lathe

The aprons are machined on a special machine for each size at one setting, which insures interchangeability, accuracy and ease of assembling. This increases production and reduces the cost, which means lower prices that we pass on to the consumer.



Boring Gear Boxes on a Special Jig in the Lathe

A special machine for boring each size gear box, machining four holes at a time which insures perfect alignment. All gear boxes are interchangeable and can be assembled without any special work. They are turned out in one hundred lots.



Silent Chain Motor Driven South Bend Lathe

Silent Chain Motor Driven South Bend Lathes

Made in quick change and standard change gear patterns, with straight or gap bed

The Silent Chain Drive has proven a remarkable motor drive for the South Bend Lathes. There are several thousand Silent Chain Motor Driven Lathes in use and some of them in the largest industrial plants in the United States, all producing enthusiastic results.

The Silent Chain Drive is as positive as a gear, flexible as a belt and more efficient than either. It prevents loss of time by having the tension always taken up between the motor and drive shaft. It has a further advantage of being noiseless in operation.

The Reversing Switch is located in a convenient place so that the operator has complete control of the lathe, as he can start, stop, and reverse the spindle instantaneously.

The Tilting Table on which the motor sets is operated by a small lever allowing the table to tilt and the belt to be shifted while the lathe is in operation. The small bracket carrying the lever admits of an independent adjustment for the taking up of the belt.

Motor is placed above the lathe so there is no danger of chips falling into the armature and field coils to interfere with the motor's efficient operation. On account of the design of the **South Bend Motor Driven Lathe,** a General Electric or Westinghouse Motor, having a speed of 1150 to 1200 R. P. M., is recommended.

Motor manufacturers carry a large stock of motors at South Bend, so we are able to secure prompt shipment and quote the regular market prices. In ordering motor driven lathes, it is advisable to let us furnish the motors, as our prices are low and there will be no delay in making shipment on the motor driven lathe you select.

It is necessary that the motor be fitted to the electric drive lathe in our shop.

Equipment included in the price of the Silent Chain Motor Driven Lathe consists of reversing switch, belt, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

The price of motor is not included in the price of regular equipment, because of the variation of prices on alternating and direct current motors. Approximate prices of motors are shown on page 49.

Electrical Specifications

In placing an order for a Silent Chain Motor Driven Lathe, please give the following specifications:

Current, whether alternating or direct.
If alternating, state voltage, phase and cycle.
If direct, state voltage.

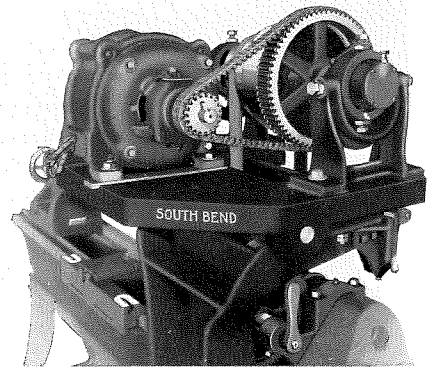
Special Reversing Switch for Direct Current Motors

One Horsepower Motors and Larger Sizes

When a Direct Current Motor is required on the 15-inch lathe and larger sizes it is necessary that a Special Reversing Switch be used. This switch has a resisting coil attached to the rear side, arranged so that it operates automatically in controlling the amount of current used in the motor. This Special Reversing Switch is used instead of the regular Reversing Switch and there is an additional charge of $25.00 as shown in the tabulation on page 49.

Horsepower of Motors Required for Silent Chain Motor Driven Lathes

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Horsepower of Motor	¼ or ⅓	½	1	1	1	2	3	3
Speed of Motor, R. P. M.	1150 to 1200	1150 to 1200	1150 to 1200	1150 to 1200	1150 to 1200	1150 to 1200	1150 to 1200	1150 to 1200



The Silent Chain Motor Drive

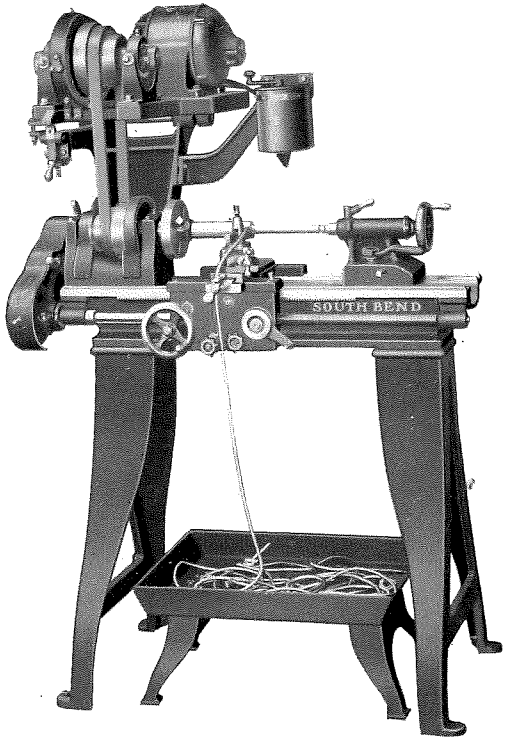
With Gear Guards Removed

The illustration is from a photograph of South Bend Silent Chain Motor Driven mechanism with the gear guard removed. The motor and countershaft are symmetrically balanced on top of the tilting table and directly over the lathe. The drive is direct from the armature shaft of the motor to the countershaft. The silent chain makes it as positive as though it were direct geared, but has the advantage of being more silent than gears.

Note that the motor is placed above the lathe so there is no danger of chips falling into the armature and field coils to interfere with the motor's efficient operation.

Prominent electrical engineers who are very familiar with various electric drive methods on machine tools say this is the very best they have seen. We have been making this electric drive now for over eight years, and its success has been remarkable.

The engineers of one of the largest manufacturers of electric motors in the United States, who have been using this silent chain electric motor drive in their shops for over seven years, say that the South Bend Motor Drive for lathes has no superior.



11-Inch Silent Chain Motor Driven Lathe

The illustration shows an 11-inch Silent Chain Motor Driven Lathe in operation. This is the Standard Change Gear pattern but we can also furnish the 9-inch and 11-inch Silent Chain Motor Driven Lathes in the Quick Change Gear pattern. The 9-inch and 11-inch Silent Chain Motor Driven Lathes are recommended for all classes of precision work in the tool room, manufacturing plant and the machine shop. They are constructed exactly the same as the larger South Bend Lathes, being equipped with the latest improvements and features such as power cross feed, automatic longitudinal feed, graduated collar on compound rest screw and cross feed screw, hole the entire length of the spindle, and other improvements described on pages 10, 11, 12, 13, 14, 15, 16 and 17.

We can furnish Draw-in Chuck with spring collets on this lathe for machining parts from bar stock.

Silent Chain Motor Driven Lathes

Prices Include Reversing Switches But Do Not Include Motors

F. O. B. Cars South Bend, Ind. — Skidded and Crated for Domestic Shipment

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Approx. Wt. Motor Driven Lathe and Motor, Crated Pounds	Horse Power of Motor	Standard Change Gear Lathes		Quick Change Gear Lathes	
					Catalog Number	Code Word	Catalog Number	Code Word
9-Inch Silent Chain Motor Driven Lathe								
9¼	2½	10	640	¼ or ⅓	325-X	Dallch	361-X	Damch
9¼	3	16	660	¼ or ⅓	325-Y	Darch	361-Y	Dirch
9¼	3½	22	680	¼ or ⅓	325-Z	Dorch	361-Z	Deach
9¼	4	28	700	¼ or ⅓	325-A	Delch	361-A	Dusch
11-Inch Silent Chain Motor Driven Lathe								
11¼	3	14	825	½	327-Y	Farch	363-Y	Fach
11¼	3½	20	850	½	327-Z	Fatch	363-Z	Ferch
11¼	4	26	875	½	327-A	Fench	363-A	Filch
11¼	5	38	990	½	327-B	Foach	363-B	Flach
13-Inch Silent Chain Motor Driven Lathe								
13¼	4	18	1400	¾	334-A	Haich	365-A	Halch
13¼	5	30	1450	¾	334-B	Healch	365-B	Helch
13¼	6	42	1500	¾	334-C	Hirch	365-C	Hooch
13¼	7	54	1550	¾	334-D	Homch	365-D	Humch
13¼	8	66	1625	¾	334-E	Husch	365-E	Hymch
15-Inch Silent Chain Motor Driven Lathe								
15¼	5	27	1850	1	337-B	Ideach	367-B	Idlch
15¼	6	39	1950	1	337-C	Imuch	367-C	Intch
15¼	7	51	2000	1	337-D	Indch	367-D	Iroch
15¼	8	63	2075	1	337-E	Irich	367-E	Islch
15¼	10	87	2225	1	337-G	Issuch	367-G	Ibach
16-Inch Silent Chain Motor Driven Lathe								
16¼	6	36	2200	1	340-C	Jamch	369-C	Jadch
16¼	7	48	2280	1	340-D	Jellch	369-D	Jerch
16¼	8	60	2360	1	340-E	Jinch	369-E	Jibch
16¼	10	84	2520	1	340-G	Joisch	369-G	Jorch
16¼	12	108	2780	1	340-H	Jutch	369-H	Jumch
18-Inch Silent Chain Motor Driven Lathe								
18¼	6	31	2900	2	345-C	Kafich	371-C	Katch
18¼	7	43	3000	2	345-D	Khoch	371-D	Keech
18¼	8	55	3100	2	345-E	Knach	371-E	Kilch
18¼	10	79	3300	2	345-G	Kohch	371-G	Knoch
18¼	12	103	3600	2	345-H	Kurch	371-H	Krich
18¼	14	127	4000	2	345-K	Kvinch	371-K	Kutch
21-Inch Silent Chain Motor Driven Lathe								
21¼	7	36	4150	3	347-D	Painch	373-D	Patch
21¼	8	48	4350	3	347-E	Peach	373-E	Pelch
21¼	10	72	4600	3	347-G	Photch	373-G	Ploch
21¼	12	96	4960	3	347-H	Pikch	373-H	Porch
21¼	14	120	5180	3	347-K	Platch	373-K	Pufch
24-Inch Silent Chain Motor Driven Lathe								
24¼	8	43	5275	3	354-E	Racch	375-E	Raich
24¼	10	67	5525	3	354-G	Rench	375-G	Reich
24¼	12	91	5925	3	354-H	Risch	375-H	Rmch
24¼	14	115	6195	3	354-K	Roach	375-K	Roch
24¼	16	139	6475	3	354-M	Rinch	375-M	Rudch

Prices of A.C. and D.C. Reversing Motors

For Silent Chain and Simplex Motor Driven Lathes

South Bend Motor-Driven Lathes are designed to be equipped with General Electric or Westinghouse reversing motors having a speed of 1150 to 1200 R. P. M.

Motor prices listed below do not include starter, base or pulley, as these parts are not required on South Bend motor-driven lathes.

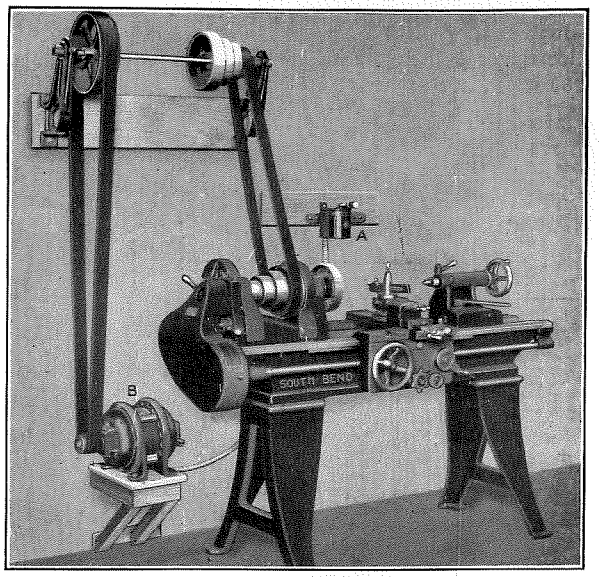
Size of Lathe Inches	Horse Power of Motor	Alternating Current 60-cycle, 110 or 220 Volts 1200 R. P. M.		Direct Current 115 or 230 Volts, 1200 R. P. M.	Special Reversing Switch for D. C. Motors Extra
		Single Phase	Three Phase		
9	¼ H.P.	**$47.50**	Not Made	**$27.00**	Not Required
9	⅓ H.P.	Not Made	**$37.00**	**38.25**	Not Required
11	½ H.P.	**65.00**	**45.00**	**44.00**	Not Required
13	¾ H.P.	**95.00**	**51.00**	**67.00**	Not Required
15	1 H.P.	**100.00**	**56.00**	**74.00**	**$25.00**
16	1 H.P.	**100.00**	**56.00**	**74.00**	**25.00**
18	2 H.P.	**145.00**	**72.00**	**112.00**	**25.00**
21	3 H.P.	**172.00**	**86.00**	**148.00**	**25.00**
24	3 H.P.	**172.00**	**86.00**	**148.00**	**25.00**

When Direct Current Motor is used on 15-inch lathes or larger, a special reversing switch is required. Prices as shown above.

Motor Prices subject to change without notice. We can supply motors of other specifications than shown. Prices furnished on request.

Motor manufacturers carry a large stock of motors at South Bend, so we are able to secure prompt shipment and quote the market prices. In ordering motor-driven lathes, it is advisable to let us furnish the motors as our prices are low and there will be no delay in making shipment on the motor-driven Lathe you select.

Simplex Motor Drive for Standard and Quick Change Gear South Bend Lathes



South Bend Lathe with Simplex Motor Drive

The Simplex Motor Drive was designed to meet the demand for a simple, inexpensive electric drive for those who do not care to purchase the Silent Chain Motor Driven Lathe.

The reversible type motor (B) having a constant speed of 1500 to 2000 R. P. M., is located on a shelf attached to the wall behind the lathe.

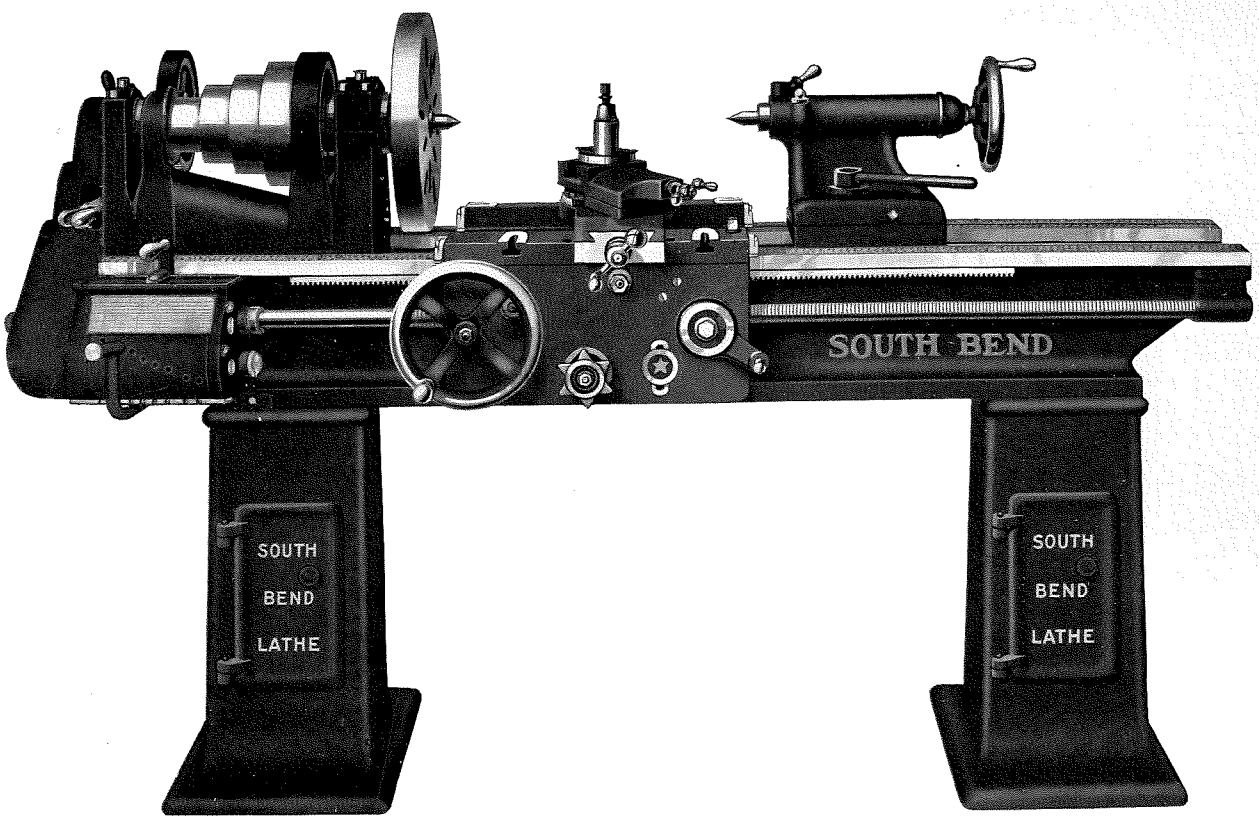
A reversing switch (A) is conveniently located and controls the starting, stopping and reversing of the lathe spindle. To rotate the spindle forward, throw the switch handle to the left; to stop, throw it to the central or neutral point, and to reverse, throw the handle to the right.

The Equipment included in the price of the Simplex Motor Driven Lathe as listed in the tabulation consists of a simplex countershaft, a leather belt, a reversing switch, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe, and a 160-page book on the care and operation of the lathe.

Simplex Motor Driven Lathes

Prices Include Reversing Switches But Do Not Include Motors
See Page 49 for Motor Prices
F. O. B. Cars South Bend, Ind. — Skidded and Crated for Domestic Shipment

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Horse Power of Motor	Standard Change Gear Lathes		Quick Change Gear Lathes	
				Catalog Number	Code Word	Catalog Number	Code Word
9-Inch Lathes with Simplex Motor Drive							
9¼	2½	10	⅓	525-X	Dallsi	561-X	Damsi
9¼	3	16	⅓	525-Y	Darsi	561-Y	Dirsi
9¼	3½	22	⅓	525-Z	Dorsi	561-Z	Deasi
9¼	4	28	⅓	525-A	Delsi	561-A	Dussi
11-Inch Lathes with Simplex Motor Drive							
11¼	3	14	½	527-Y	Farsi	563-Y	Facsi
11¼	3½	20	½	527-Z	Fatsi	563-Z	Fersi
11¼	4	26	½	527-A	Fensi	563-A	Filsi
11¼	5	38	½	527-B	Foasi	563-B	Flasi
13-Inch Lathes with Simplex Motor Drive							
13¼	4	18	¾	534-A	Haisi	565-A	Halsi
13¼	5	30	¾	534-B	Healsi	565-B	Helsi
13¼	6	42	¾	534-C	Hirsi	565-C	Hoosi
13¼	7	54	¾	534-D	Homsi	565-D	Humsi
13¼	8	66	¾	534-E	Hussi	565-E	Hymsi
15-Inch Lathes with Simplex Motor Drive							
15¼	5	27	1	537-B	Ideasi	567-B	Idlsi
15¼	6	39	1	537-C	Imagsi	567-C	Incsi
15¼	7	51	1	537-D	Indesi	567-D	Irosi
15¼	8	63	1	537-E	Irisi	567-E	Islsi
15¼	10	87	1	537-G	Issusi	567-G	Itcsi
16-Inch Lathes with Simplex Motor Drive							
16¼	6	36	1	540-C	Jamsi	569-C	Jadsi
16¼	7	48	1	540-D	Jellsi	569-D	Jersi
16¼	8	60	1	540-E	Jinksi	569-E	Jibsi
16¼	10	84	1	540-G	Joissi	569-G	Jorsi
16¼	12	108	1	540-H	Jutsi	569-H	Jumsi
18-Inch Lathes with Simplex Motor Drive							
18¼	6	31	2	545-C	Kafisi	571-C	Katsi
18¼	7	43	2	545-D	Khonsi	571-D	Keesi
18¼	8	55	2	545-E	Knacsi	571-E	Kilsi
18¼	10	79	2	545-G	Kohsi	571-G	Knosi
18¼	12	103	2	545-H	Kursi	571-H	Krisi
18¼	14	127	2	545-K	Kvinsi	571-K	Kutsi
21-Inch Lathes with Simplex Motor Drive							
21¼	7	36	3	547-D	Painsi	573-D	Patsi
21¼	8	48	3	547-E	Peasi	573-E	Pelsi
21¼	10	72	3	547-G	Photsi	573-G	Plosi
21¼	12	96	3	547-H	Piksi	573-H	Porsi
21¼	14	120	3	547-K	Platsi	573-K	Pufsi
24-Inch Lathes with Simplex Motor Drive							
24¼	8	43	3	554-E	Racsi	575-E	Raisi
24¼	10	67	3	554-G	Rensi	575-G	Reisi
24¼	12	91	3	554-H	Rissi	575-H	Ricsi
24¼	14	115	3	554-K	Roasi	575-K	Rocsi
24¼	16	139	3	554-M	Rinsi	575-M	Rudsi



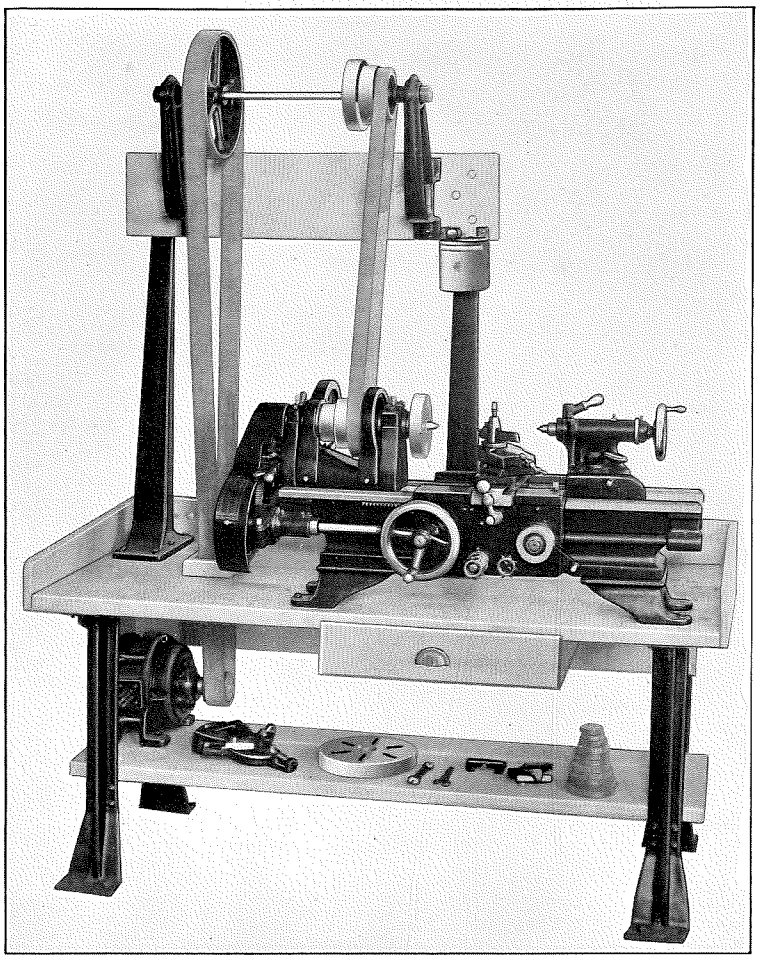
Cabinet Legs for South Bend Lathes

The above illustration shows a 16-inch x 8-foot Quick Change Gear Lathe fitted with cabinet legs in lieu of the regular legs. We can furnish two cabinet legs on any of the Quick Change Gear or Standard Change Gear Lathes or one cabinet leg under the head stock and the regular leg under the tail stock end of the lathe. Cabinet legs are standard equipment on the 21-inch and 24-inch lathes.

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.
Price of Two Cabinet Legs in Lieu of the Regular Legs	**$18.00**	**$22.00**	**$26.00**	**$30.00**	**$32.00**	**$36.00**
Price of One Cabinet Leg in Lieu of the Regular Leg	**9.00**	**11.00**	**13.00**	**15.00**	**16.00**	**18.00**

11-Inch Bench Standard Change Gear Lathe

With Simplex Motor Drive



11-Inch Swing x 4-Foot Bench Simplex Standard Change Gear Lathe

The 9-inch and 11-inch Bench Standard Change Gear Lathes are the same in every way as our regular 9-inch and 11-inch Standard Change Gear Lathes illustrated and described on pages 10, 11, 14 and 15 of this catalog. The only difference between the long leg lathes and the bench lathes is that the bench lathes are fitted with short legs and in this case equipped with simplex motor drive on a bench.

The bench is mounted on two pressed steel bench legs built up of formed sections and electrically welded. There are also two cast iron countershaft standards which serve as a rigid support for the board on which the countershaft is mounted.

A ½-H. P. reversible type motor is mounted on the shelf under the bench. A reversing switch is mounted on the right-hand standard and controls the starting, stopping and reversing of the lathe spindle.

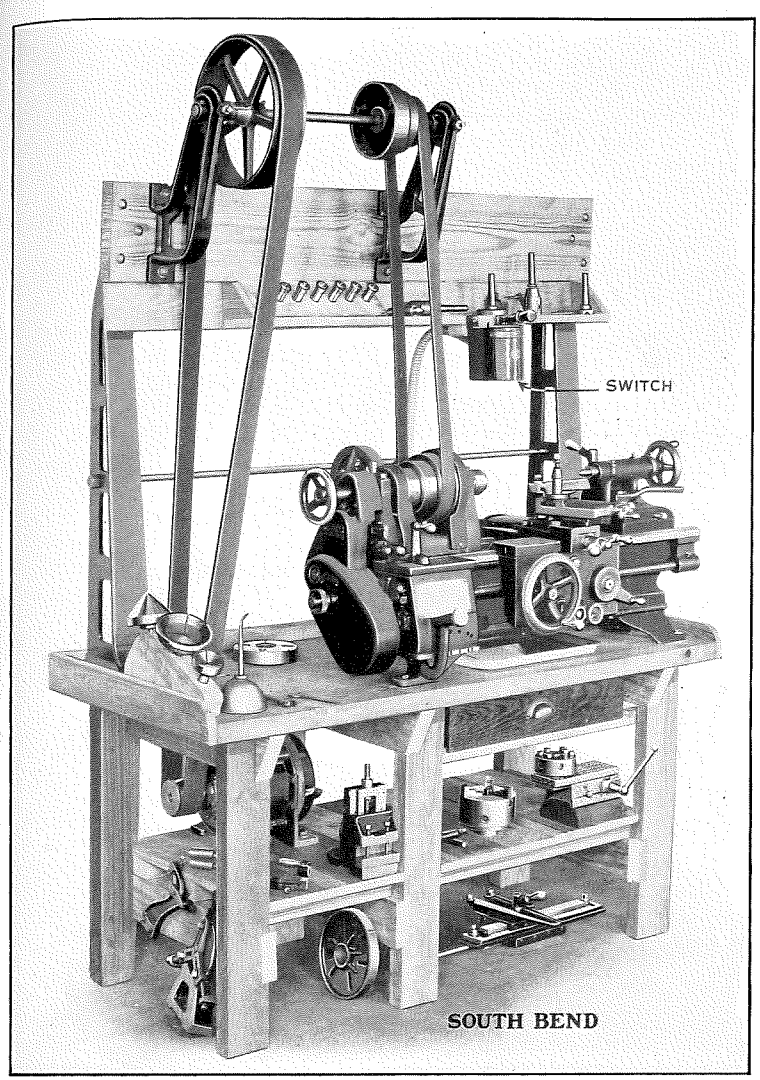
The equipment included in the price of the Simplex Bench Unit as listed below consists of a simplex countershaft, two leather belts, a reversing switch, large and small face plates, chuck back threaded to spindle nose, set of change gears, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

9-Inch and 11-Inch Bench Standard Change Gear Lathes

With Simplex Motor Drive

Prices include Reversing Switches But Do Not Include Motors, See Page 49 for Motor Prices.

No. of Lathe	Swing Over Bed Inches	Length of Bed Feet	Horse Power of Motor	Code Word	Price of Bench Including Two Metal Legs and Two Countershaft Standards	Price of Two Metal Bench Legs	Price of Two Countershaft Standards
525-XB	9¼	2½	⅓ H. P.	Dallsb	**$45.00**	**$12.00**	**$13.50**
525-YB	9¼	3	⅓ H. P.	Darsb	**45.00**	**12.00**	**13.50**
525-ZB	9¼	3½	⅓ H. P.	Deasb	**45.00**	**12.00**	**13.50**
525-AB	9¼	4	⅓ H. P.	Delsb	**45.00**	**12.00**	**13.50**
527-YB	11¼	3	½ H. P.	Farsb	**45.00**	**12.00**	**13.50**
527-ZB	11¼	3½	½ H. P.	Fatsb	**45.00**	**12.00**	**13.50**
527-AB	11¼	4	½ H. P.	Fensb	**45.00**	**12.00**	**13.50**
527-BB	11¼	5	½ H. P.	Foasb	**45.00**	**12.00**	**13.50**



11-Inch Swing x 4-Foot Bench Simplex Quick Change Gear Lathe

11-Inch Bench Quick Change Gear Lathe

With Simplex Motor Drive

The 9-inch and 11-inch Bench Quick Change Gear Lathes are the same in every way as our regular 9-inch and 11-inch Quick Change Gear Lathes illustrated and described on pages 12, 13, 16 and 17 of this catalog. The only difference is that the bench lathes are fitted with short legs and in this case equipped with Simplex Motor Drive on a bench.

The bench is made of wood and there are two cast iron countershaft standards which serve as a rigid support for the board on which the countershaft is mounted. We can supply drawings of this bench or the one shown on the opposite page, as either type can be substituted for the other if preferred. The user can make the bench himself and thus make a considerable saving in the freight.

A ½-H. P. reversible type motor is mounted on the shelf under the bench. A reversing switch is mounted on the countershaft board and controls the starting, stopping and reversing of the lathe spindle.

The equipment shown under the lathe in the cut is mostly all special and is not included with the equipment of the lathe but is extra. There are such attachments shown as the taper attachment, bed turret, chuck, milling attachment and draw-in chuck attachment. The price of these attachments can be found in this catalog.

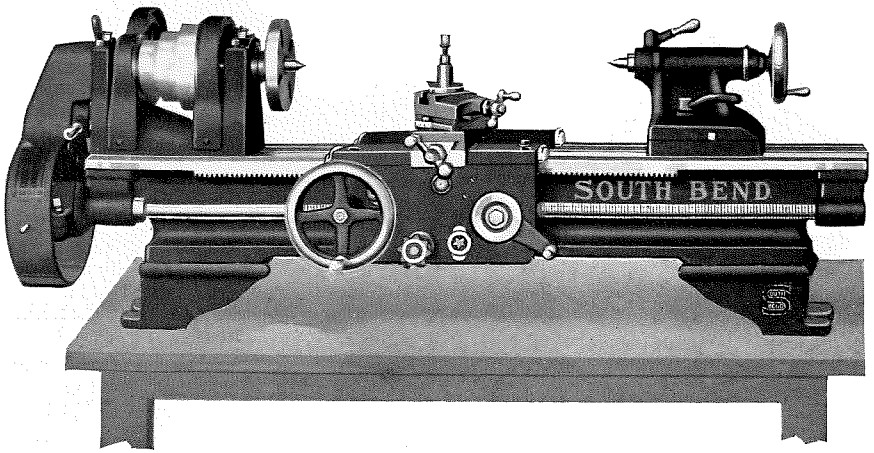
The regular equipment included with the lathe is the same as that described on page 52 under the head of the 11-inch Bench Standard Change Gear Lathe with Simplex Motor Drive.

9-Inch and 11-Inch Bench Quick Change Gear Lathes

With Simplex Motor Drive

Prices Include Reversing Switches But Do Not Include Motors.
See Page 49 for Motor Prices.

No. of Lathe	Swing over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Horse Power of Motor	Code Word	Price of Bench Including 2 Countershaft Standards	Price of Two Countershaft Standards
561-XB	9¼	2½	10	⅓ H. P.	Damsb	**$45.00**	**$13.50**
561-YB	9¼	3	16	⅓ H. P.	Dirsb	**45.00**	**13.50**
561-ZB	9¼	3½	22	⅓ H. P.	Dorsb	**45.00**	**13.50**
561-AB	9¼	4	28	⅓ H. P.	Dussb	**45.00**	**13.50**
563-YB	11¼	3	14	½ H. P.	Facsb	**45.00**	**13.50**
563-ZB	11¼	3½	20	½ H. P.	Fersb	**45.00**	**13.50**
563-AB	11¼	4	26	½ H. P.	Filsb	**45.00**	**13.50**
563-BB	11¼	5	38	½ H. P.	Flosb	**45.00**	**13.50**



11-Inch Swing x 4-Foot Bench Standard Change Gear Lathe

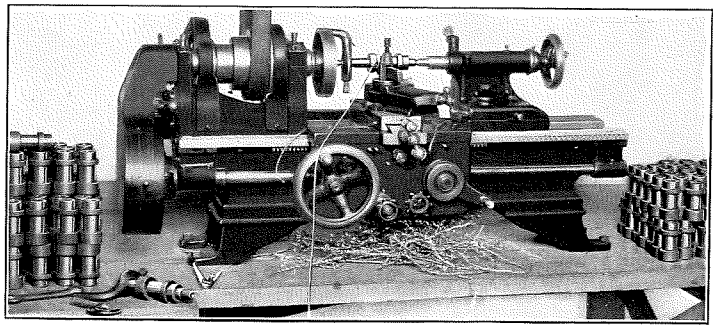
9- and 11-Inch Bench Standard Change Gear Lathes

The 9-inch and 11-inch Bench Standard Change Gear Lathes are the same in every way as our regular 9-inch and 11-inch Standard Change Gear Lathes illustrated and described on pages 10, 11, 14, and 15 of this catalog. The only difference between the long leg lathes and the bench lathes is that the latter are fitted with short legs for a bench instead of long floor legs.

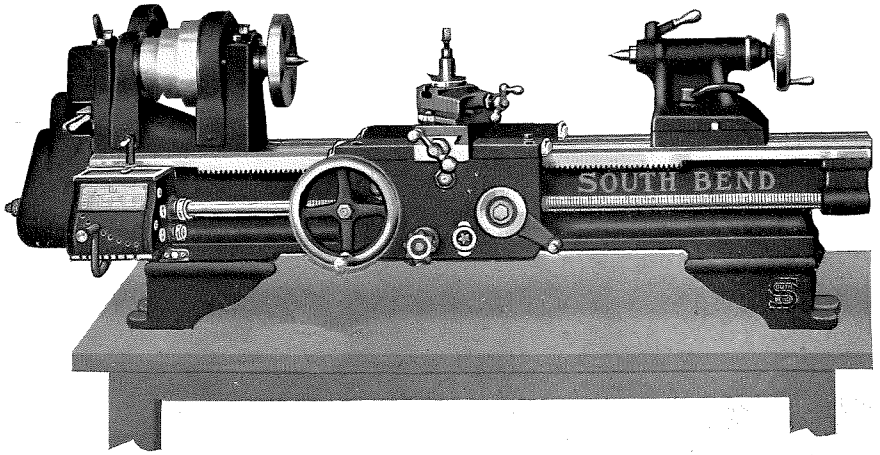
Prices of Bencn Standard Change Gear Lathes

No. of Lathe	Swing over Bed	Length of Bed	Distance Between Centers	Horse Power Required	Weight on Skids Crated	Weight Boxed for Export
9-Inch Bench Lathes						
25-XB	9¼ in.	2½ ft.	10 in.	¼ or ⅓ H. P.	365 lbs.	450 lbs.
25-YB	9¼ in.	3 ft.	16 in.	¼ or ⅓ H. P.	410 lbs.	480 lbs.
25-ZB	9¼ in.	3½ ft.	22 in.	¼ or ⅓ H. P.	440 lbs.	500 lbs.
25-AB	9¼ in.	4 ft.	28 in.	¼ or ⅓ H. P.	460 lbs.	520 lbs.
11-Inch Bench Lathes						
27-YB	11¼ in.	3 ft.	14 in.	½ H. P.	520 lbs.	705 lbs.
27-ZB	11¼ in.	3½ ft.	20 in.	½ H. P.	550 lbs.	735 lbs.
27-AB	11¼ in.	4 ft.	26 in.	½ H. P.	600 lbs.	775 lbs.
27-BB	11¼ in.	5 ft.	38 in.	½ H. P.	665 lbs.	845 lbs.

The equipment of the Bench Standard Change Gear Lathe includes exactly the same equipment as the long leg lathe, which is as follows: Double friction countershaft, large and small face plates, chuck back threaded to spindle nose, set of change gears, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.



An 11-Inch x 4-Foot Bench Standard Change Gear Lathe On a Manufacturing Job



11-Inch Swing by 4-Foot Bench Quick Change Gear Lathe

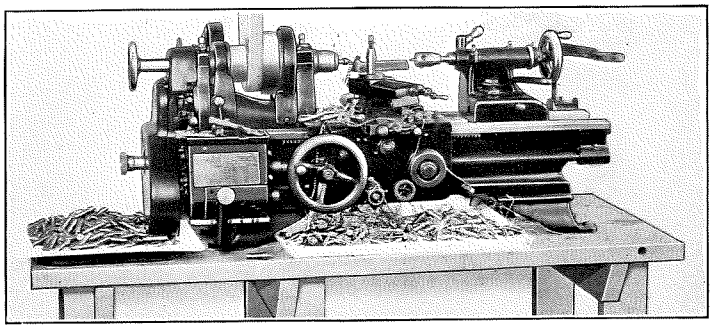
9- and 11-Inch Bench Quick Change Gear Lathes

The 9-inch and 11-inch Bench Quick Change Gear Lathes are the same in every way as our regular 9-inch and 11-inch Quick Change Gear Lathes illustrated and described on pages 12, 13, 16, and 17 of this catalog. The only difference between the long leg lathes and the bench lathes is that the latter are fitted with short legs for a bench instead of long floor legs.

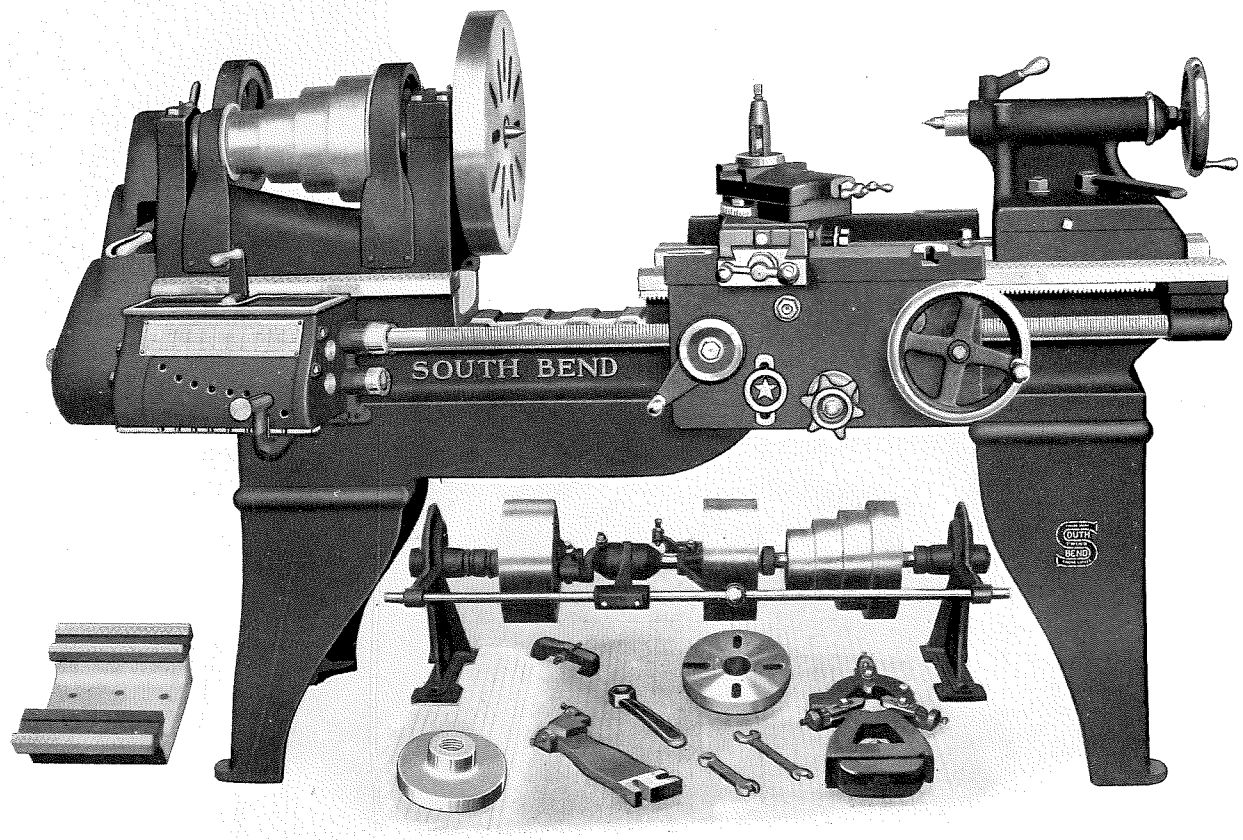
The equipment of the Bench Quick Change Gear Lathe includes exactly the same equipment as the long leg lathe, which is as follows: Double friction countershaft, large and small face plates, chuck back threaded to spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.

Prices of Bench Quick Change Gear Lathes

No. of Lathe	Swing over Bed	Length of Bed	Distance Between Centers	Horse Power Required	Weight on Skids Crated	Weight Boxed for Export
9-Inch Bench Lathes						
61-XB	9¼ in.	2½ ft.	10 in.	¼ or ⅓ H. P.	365 lbs.	450 lbs.
61-YB	9¼ in.	3 ft.	16 in.	¼ or ⅓ H. P.	410 lbs.	480 lbs.
61-ZB	9¼ in.	3½ ft.	22 in.	¼ or ⅓ H. P.	440 lbs.	500 lbs.
61-AB	9¼ in.	4 ft.	28 in.	¼ or ⅓ H. P.	460 lbs.	520 lbs.
11-Inch Bench Lathes						
63-YB	11¼ in.	3 ft.	14 in.	½ H. P.	520 lbs.	705 lbs.
63-ZB	11¼ in.	3½ ft.	20 in.	½ H. P.	550 lbs.	735 lbs.
63-AB	11¼ in.	4 ft.	26 in.	½ H. P.	600 lbs.	775 lbs.
63-BB	11¼ in.	5 ft.	38 in.	½ H. P.	665 lbs.	845 lbs.



An 11-Inch x 4-Foot Bench Quick Change Gear Lathe on a Manufacturing Job



Gap Bed South Bend Lathe

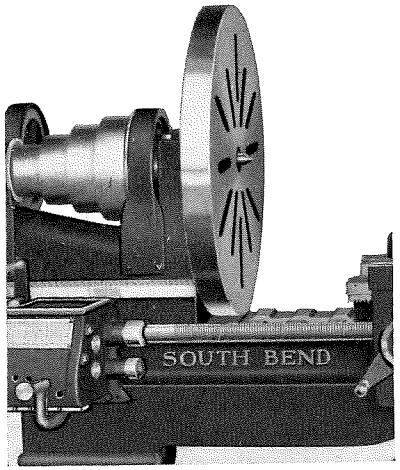
Gap Bed South Bend Lathes

Standard Change Gear, Quick Change Gear and Motor Driven Lathes

Illustration on page 56 shows the 16-24 inch No. 169 Quick Change Gear Lathe fitted with gap bed and bridge. The bridge has been removed from the bed and rests on the floor. The illustration also shows carriage mechanism transposed. This allows the carriage to pass over the gap without letting down. The Gap Bed Lathes are rigidly constructed and are equal in accuracy to the Straight Bed Lathes. They are given the same close accuracy tests throughout the factory. For description of gap bed Lathes, see that of straight bed Lathes, as the only difference is the bridge, and gap construction of bed and apron, which requires more strength.

Bridge is used to close up the gap so that the Lathe may be used as a straight bed. When work of large diameter is to be machined, bridge may be removed from bed in a few minutes, as it is accurately machined, scraped, and fitted to gap, located by means of two steel dowel pins and held in position by four substantial bolts. Bridge must be fitted in Lathe at factory.

The Equipment as shown under cut is included in the price of lathe, and consists of double friction countershaft, gap and bridge, large and small face plates, chuck back threaded to fit the spindle nose, adjustable stop for thread cutting, center rest, follower rest, two steel lathe centers, tool post, ring and wedge, necessary wrenches, blue prints showing how to set up the lathe and a 160-page book on the care and operation of the lathe.



Full Swing Gap Face Plate

The illustration above shows a full swing Gap Face Plate to accommodate work of a large diameter at the increased swing

This is not included with equipment but is extra as listed below.

Prices of Gap Bed Lathes

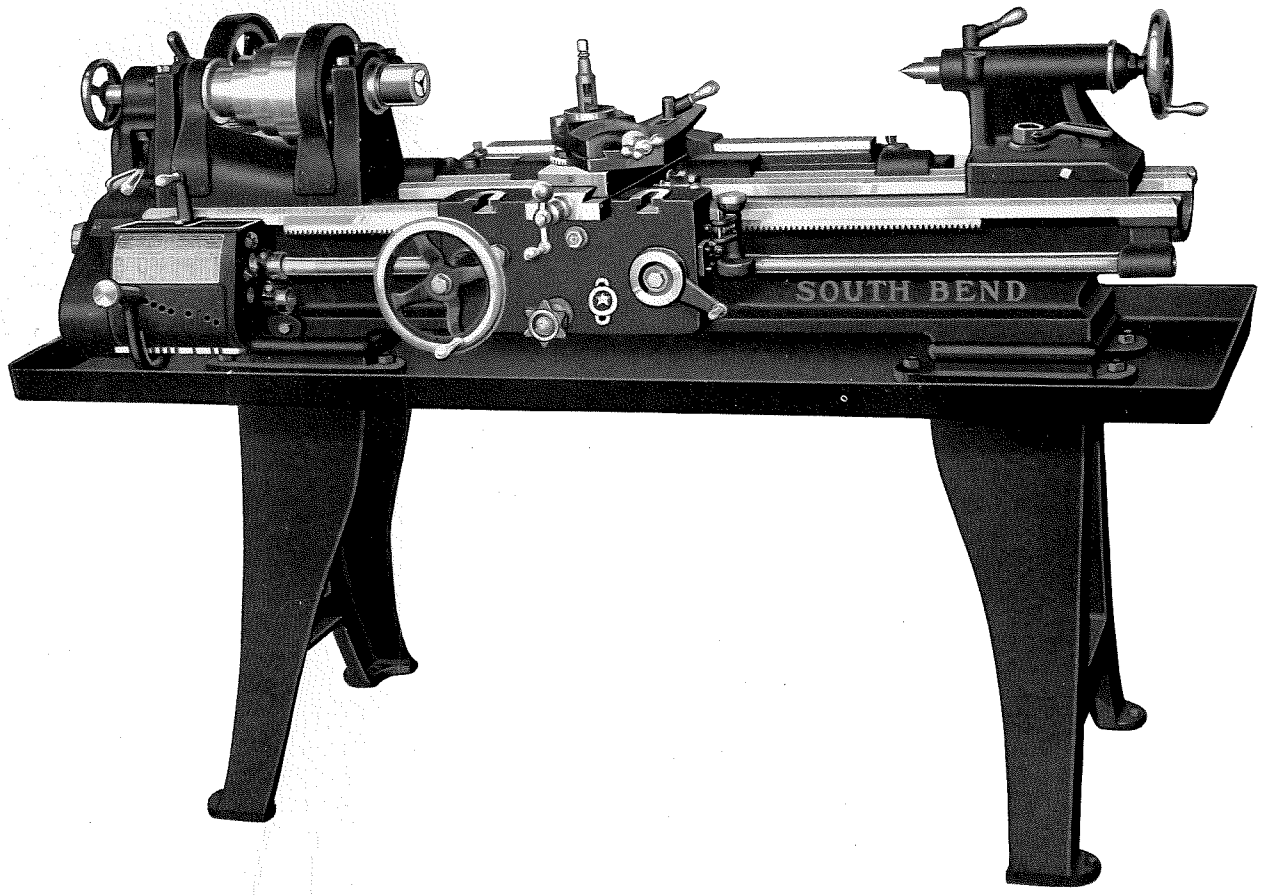
As the Gap Bed Lathes are built in the Standard Change Gear, Quick Change Gear and Motor Driven types, to arrive at the price of any type of gap lathe, add the price of Gap and Bridge as listed in the tabulation below, to the price of the straight bed lathe, as shown on Page 44.

Additional Price of Gap and Bridge to That of Straight Bed Lathes

Numbers of Gap Bed Lathes		Swing over Straight Bed	Swing over Gap	Width of Gap	Lengths of Gap Beds in Feet	Extra Weight of Gap Bed	Price Extra for Gap Bed and Bridge
Standard Change Gear	Quick Change Gear						
127	163	11¼ in.	16½ in.	5 in.	3, 3½, 4, 5	50 lbs.	**$ 25.00**
134	165	13¼ in.	19½ in.	7 in.	4, 5, 6, 7, 8	100 lbs.	**30.00**
137	167	15¼ in.	22½ in.	8 in.	5, 6, 7, 8, 10	125 lbs.	**36.00**
140	169	16¼ in.	24½ in.	8⅜ in.	6, 7, 8, 10, 12	140 lbs.	**40.00**
145	171	18¼ in.	26½ in.	10 in.	6, 7, 8, 10, 12, 14	170 lbs.	**50.00**
147	173	21¼ in.	30½ in.	12 in.	7, 8, 10, 12, 14	250 lbs.	**100.00**
154	175	24¼ in.	36½ in.	15 in.	8, 10, 12, 14, 16	350 lbs.	**150.00**

Prices of Full Swing Gap Face Plates

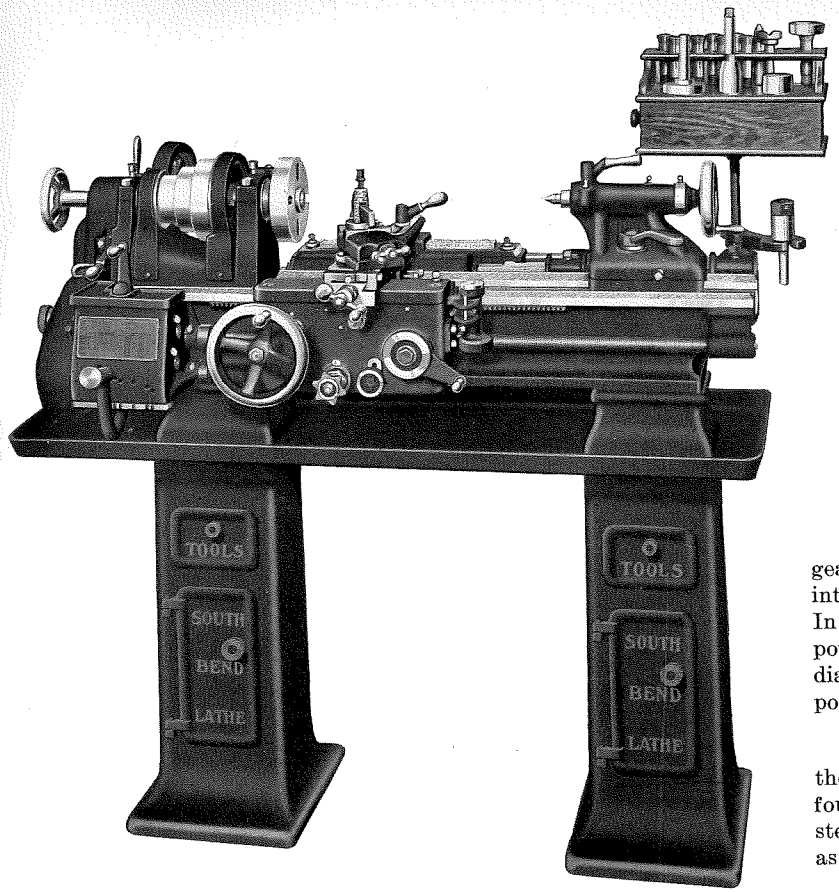
Size of Lathe	Diameter of Plate	Price of Plate
11-in.	15 in.	**$12.00**
13-in.	18 in.	**18.00**
15-in.	21½ in.	**25.00**
16-in.	23 in.	**28.00**
18-in.	25 in.	**35.00**
21-in.	29 in.	**45.00**
24-in.	35 in.	**55.00**



13-Inch x 5-Foot Tool Room Lathe

Tool Room Lathes are built in the following sizes: 11-in. x 4-ft., 13-in. x 5-ft. and 15-in. x 6-ft.

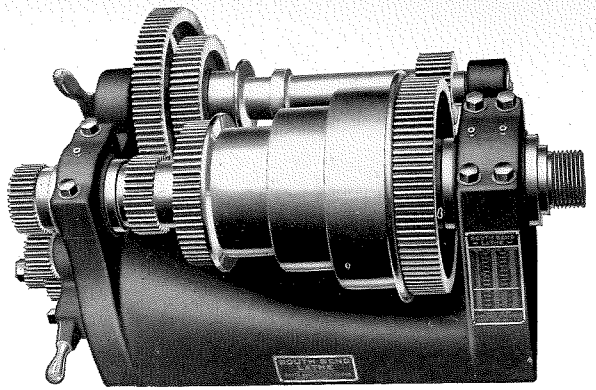
Prices on application



Tool Room Lathe

11-Inch Swing by 4-Foot Bed

Prices on application



Double or Second Back Gear Lathe Head

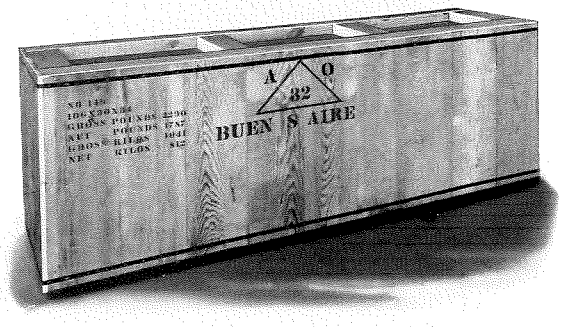
The illustration shows the double or second back gear lathe head with gear guards removed. The extra or second back gear is a gear drive of intermediate power between the single back gear and the direct cone drive. In other words, the single back gearing develops low speed and greatest power. The second back gear develops intermediate speed and intermediate power. The direct cone drive develops high speed and minimum power.

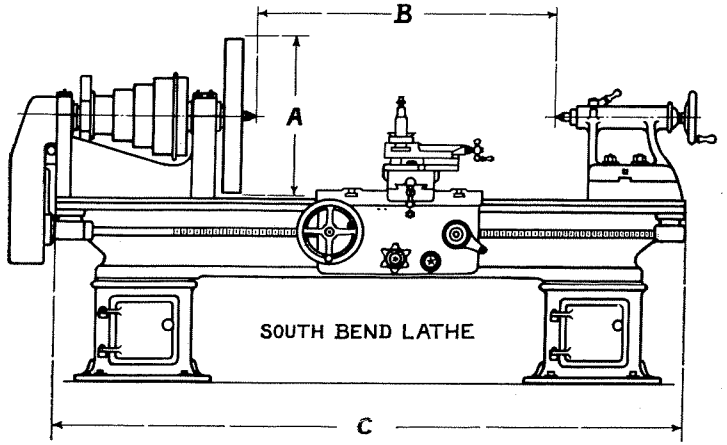
Spindle Speeds: Nine changes of spindle speeds are obtainable with the double or second back gear head, but this head stock eliminates the fourth or small step of the cone which is the most important of all the steps. This step is used more than any other step for general work, such as polishing, filing, drilling, etc. etc.

Prices for Double or Second Back Gear Head

Size of Lathe	15-inch	16-inch	18-inch	21-inch	24-inch
Price Extra	**$65.00**	**$75.00**	**$85.00**	**$100.00**	**$125.00**

South Bend Lathes for Export





Boxing for Export

In preparing a South Bend Lathe for export, the lathe is knocked down as much as possible, and all machined parts greased and oiled. Each lathe is covered with oil paper to prevent rust from dampness, and carefully packed complete in one case which is bound on the outside by steel bands.

Packing for Mule-Back Transportation

Any South Bend Lathe can be boxed in several cases suitable for mule-back transportation at a small additional cost. The bed, however, must be boxed in one case, as it is cast in one piece.

South Bend Lathes may be purchased for export in standard change gear or the quick change gear type, both in straight bed and gap bed, and any size or type with electric motor drive.

The Standard Change Gear **South Bend Lathe** may be equipped with the metric lead screws or the English lead screws and transposing gears for the cutting of metric threads. The quick change gear lathe cannot be equipped with the metric lead screw, but can be equipped with the transposing gears for the cutting of metric threads.

Size of a Lathe

The size of an Engine Lathe is determined by the SWING OVER BED AND LENGTH OF BED.

A—SWING OVER BED
B—DISTANCE BETWEEN CENTERS
C—LENGTH OF BED

The Europeans determine the size of a lathe by its radius or center distance, for example: An 8-inch center lathe is a lathe having a radius of 8 inches. What the European calls an 8-inch center lathe, we call a 16-inch swing lathe.

Export Prices

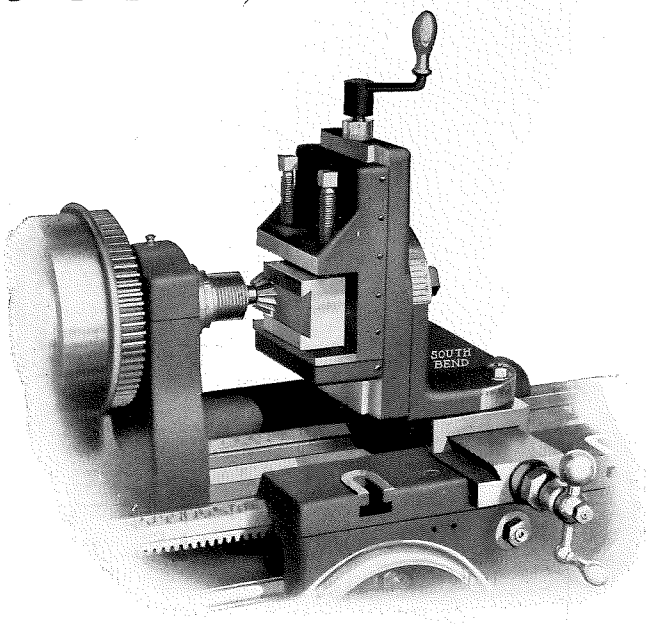
All prices shown in this catalog are for lathes and attachments crated for domestic shipment only. An additional charge is required to cover the cost of boxing for Ocean shipment and the freight charges on the shipment from South Bend to New York City. See our latest Export price list No. 84-E.

LATHES BOXED FOR EXPORT

Standard and Quick Change Gear South Bend Lathes with Straight and Gap Beds. Dimensions of cases in inches, and gross weight in pounds.

Lathe Swing over Bed	Length of Bed	Straight Bed Lathes				Gap Bed Lathes		
		Dimensions of Cases Inches	Wt. Boxed for Export Pounds	Code Word Standard Change Gear Lathe	Code Word Quick Change Gear Lathe	Dimensions of Cases Inches	Wt. Boxed for Export Pounds	Code Word for Gap Bed Lathes
9-Inch South Bend Lathes								
9¼ in.	2½ ft.	43 x 30 x 25	500	Dally	Damp	Not Made		Not Made
9¼ in.	3 ft.	50 x 30 x 25	530	Dare	Dirt	Not Made		Not Made
9¼ in.	3½ ft.	55 x 30 x 25	550	Dean	Dort	Not Made		Not Made
9¼ in.	4 ft.	60 x 30 x 25	570	Dell	Dust	Not Made		Not Made
11-Inch South Bend Lathes								
11¼ in.	3 ft.	61 x 33 x 26	765	Fare	Fact	61 x 31 x 26	800	
11¼ in.	3½ ft.	67 x 33 x 26	800	Fate	Fern	69 x 31 x 26	835	
11¼ in.	4 ft.	73 x 33 x 26	835	Fend	Film	73 x 31 x 26	870	
11¼ in.	5 ft.	73 x 33 x 26	905	Foam	Flax	73 x 31 x 26	940	
13-Inch South Bend Lathes								
13¼ in.	4 ft.	73 x 31 x 28	1230	Hail	Halt	73 x 31 x 28	1330	
13¼ in.	5 ft.	73 x 31 x 28	1300	Heald	Helm	73 x 31 x 28	1400	
13¼ in.	6 ft.	84 x 31 x 28	1360	Hire	Hoop	84 x 31 x 28	1460	
13¼ in.	7 ft.	96 x 31 x 28	1430	Home	Hump	96 x 31 x 28	1530	
13¼ in.	8 ft.	109 x 31 x 28	1500	Husk	Hymn	109 x 31 x 28	1600	
15-Inch South Bend Lathes								
15¼ in.	5 ft.	72 x 33 x 30	1650	Ideal	Idle	72 x 31 x 30	1775	
15¼ in.	6 ft.	84 x 33 x 30	1735	Image	Inca	84 x 31 x 30	1860	
15¼ in.	7 ft.	96 x 33 x 30	1830	Index	Iron	96 x 31 x 30	1955	
15¼ in.	8 ft.	108 x 33 x 30	1925	Iris	Isle	108 x 31 x 30	2050	
15¼ in.	10 ft.	131 x 33 x 30	2125	Issue	Itch	131 x 31 x 30	2250	
16-Inch South Bend Lathes								
16¼ in.	6 ft.	84 x 32 x 31	1970	Jamb	Jade	84 x 30 x 34	2110	
16¼ in.	7 ft.	96 x 32 x 31	2070	Jelly	Jerk	96 x 30 x 34	2210	
16¼ in.	8 ft.	108 x 32 x 31	2180	Jinks	Jibe	108 x 30 x 34	2320	
16¼ in.	10 ft.	131 x 32 x 31	2390	Joist	Jorn	131 x 30 x 34	2530	
16¼ in.	12 ft.	154 x 32 x 31	2750	Jute	Jump	154 x 30 x 34	2890	
18-Inch South Bend Lathes								
18¼ in.	6 ft.	84 x 32 x 31	2600	Kafir	Katy	84 x 30 x 37	2770	
18¼ in.	7 ft.	96 x 32 x 31	2730	Khond	Keel	96 x 30 x 37	2900	
18¼ in.	8 ft.	108 x 32 x 31	2860	Knack	Kilt	108 x 30 x 37	3030	
18¼ in.	10 ft.	131 x 32 x 31	3210	Kohl	Knot	131 x 30 x 37	3380	
18¼ in.	12 ft.	154 x 32 x 31	3520	Kurd	Kris	154 x 30 x 37	3690	
18¼ in.	14 ft.	183 x 32 x 31	3830	Kvine	Kute	183 x 30 x 37	3910	
21-Inch South Bend Lathes								
21¼ in.	7 ft.	96 x 43 x 37	4050	Paint	Pate	96 x 42 x 40	4300	
21¼ in.	8 ft.	108 x 43 x 37	4350	Pear	Pelt	108 x 42 x 40	4600	
21¼ in.	10 ft.	132 x 43 x 37	4725	Photo	Plot	132 x 42 x 40	4975	
21¼ in.	12 ft.	156 x 43 x 37	5200	Pike	Port	156 x 42 x 40	5450	
21¼ in.	14 ft.	180 x 43 x 37	5500	Plate	Puff	180 x 42 x 40	5750	
24-Inch South Bend Lathes								
24¼ in.	8 ft.	108 x 43 x 40	5200	Race	Rail	108 x 46 x 40	5550	
24¼ in.	10 ft.	132 x 43 x 40	5600	Rend	Rein	132 x 46 x 40	5950	
24¼ in.	12 ft.	156 x 43 x 40	6100	Rise	Rich	157 x 46 x 40	6450	
24¼ in.	14 ft.	180 x 43 x 40	6500	Roat	Rock	180 x 46 x 40	6850	
24¼ in.	16 ft.	205 x 43 x 40	6900	Ring	Rude	205 x 46 x 40	7250	

When ordering Gap Bed Lathes, add word "Gap" to the Code Word covering Straight Bed Lathes.



South Bend Milling and Keyway Cutting Attachment No. 5

Milling Attachment for South Bend Lathes

The illustration shows our improved Milling and Key-way Cutting Attachment fitted to the carriage of a 16-inch South Bend Lathe.

The depth of the cut is controlled by the feed of the carriage, the length by the cross-feed screw, and the graduated screw at the top takes care of the vertical motion. The attachment swivels all the way around like the compound rest, and is graduated in degrees. In addition, it swivels on the upright angle plate which is graduated in 180 degrees. There is a graduated collar on the vertical screw reading in one-thousandths of an inch. This attachment is practical in the shop because it equips the lathe for doing a great deal of work that otherwise could be done only on the shaper or milling machine.

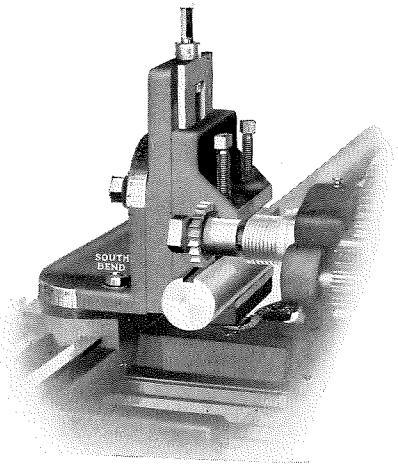
The regular equipment consists of milling attachment, two steel V-blocks, one crank-handle, one double-end wrench, and two bolts and nuts for attaching.

This attachment is often used in the manufacture of small duplicate parts on the lathe. A jig for holding the parts is fastened in the attachment vise and the work is machined in the jig.

Specifications of Milling Attachment

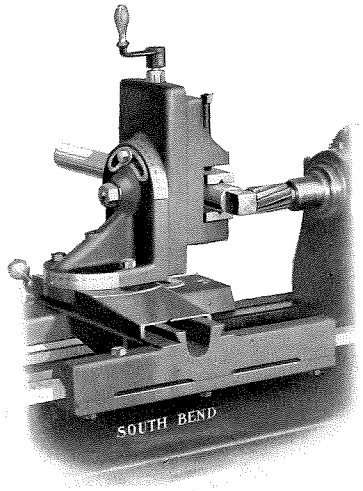
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 5½	No. 6	No. 7
Size of Lathe	9 in.	11 in.	13 in.	15 in.	16 in.	18 in.	21 in.	24 in.
Vertical Feed	2½ in.	3 in.	5 in.	6 in.	7 in.	7 in.	8 in.	10 in.
Cross Feed	3 in.	4 in.	8 in.	11 in.	11 in.	14 in.	15 in.	20 in.
Vise will hold	1½ in.	1½ in.	2¾ in.	3½ in.	4 in.	4 in.	4½ in.	5 in.
Depth of Jaws	1 in.	1 in.	1⅝ in.	1¾ in.	2 in.	2 in.	2¼ in.	2½ in.
Width of Base	3¼ in.	3⅞ in.	5 in.	5½ in.	6 in.	6½ in.	7½ in.	8 in.
Width of Jaws	3 in.	3½ in.	5 in.	5½ in.	6 in.	6 in.	7½ in.	8 in.
Weight	25 lbs.	30 lbs.	40 lbs.	50 lbs.	65 lbs.	75 lbs.	80 lbs.	100 lbs.
Price	**$36.00**	**$40.00**	**$45.00**	**$50.00**	**$55.00**	**$65.00**	**$80.00**	**$90.00**
Code	Vag	Vale	Victo	Visit	Volt	Vox	Vurry	Vusel

Milling Attachment for South Bend Lathes



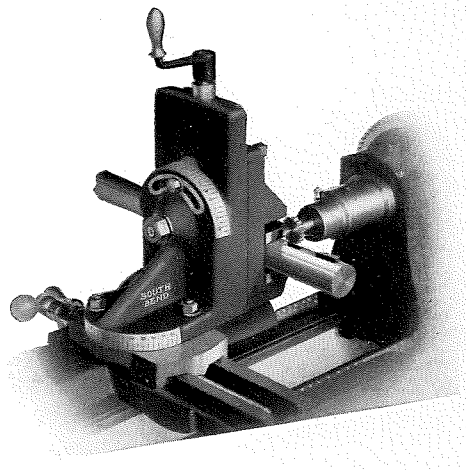
Milling a Keyway on a Shaft

The above illustration shows the application of the milling and keyway cutting attachment cutting a keyway on the shaft in the lathe. It is obvious that by adjusting the shaft in the vise the keyway can be cut the entire length of the shaft, or if a taper shaft is to be milled the vise can be tilted to the desired angle and the keyway can be cut in the shaft as though it were straight.



Squaring a Steel Shaft

The above cut illustrates the squaring of a shaft held in the milling attachment of the lathe. A spiral end mill with Morse taper shank is held in the spindle of the lathe. This is an excellent method of milling squares, hexagons and flats, because the end mill cuts a clean, true surface.

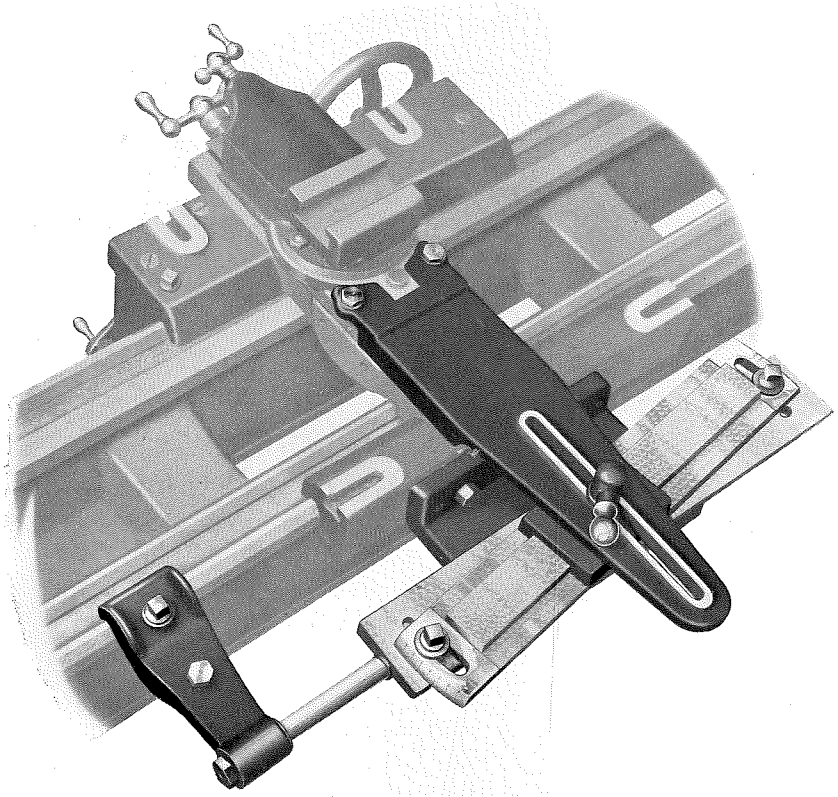


Milling a Woodruff Keyway

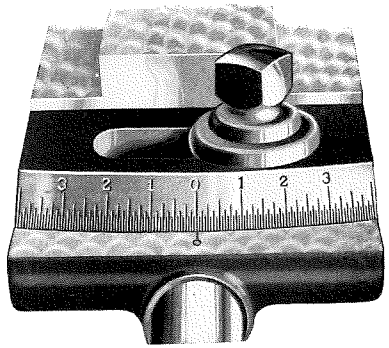
The above cut shows the method of milling a Woodruff Keyway in a shaft. The shaft is held in the Milling Attachment and the Woodruff Cutter is held in a Blacksmith Drill Chuck that fits the taper of the lathe spindle. Woodruff cutters are illustrated on page 75 and the Blacksmith Drill Chuck is shown on page 77.

Milling Cutters, Etc.

For Spiral End Mills, Side Milling Cutters, Milling Arbors, etc., see page 75, where these tools are illustrated, priced and described.



Graduated Taper Attachment



Close View of Graduated Taper

The taper attachment illustrated herewith is bolted to the back of the saddle and clamped to the rear V-way of the bed. This admits adjustment of the taper attachment along the entire length of the lathe. The swivel bar which controls the taper is graduated, one end in inches per foot and the other end in degrees.

The taper attachment can be fitted at any time after the lathe has left the factory, as the rear of the saddle is planed and drilled to receive it.

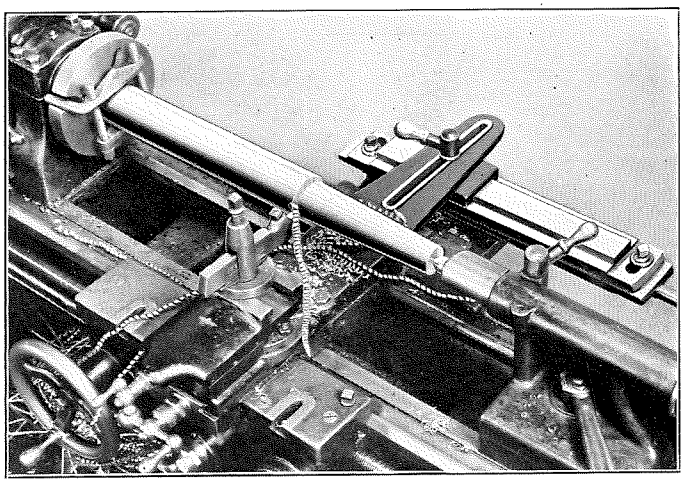
The graduated taper attachment is quickly fitted to the lathe. The connecting slide is fastened to the tool cross slide. The angle base is secured to the back of the lathe saddle. The table is fastened to the angle base and attached on one end by a bracket clamped on the ways of the lathe. The swivel slide rail is pivoted on the table. This rail is graduated on either end—one end in degrees, and the other end in inches per foot of taper.

When the taper attachment is to be used, remove the screw that holds the cross feed control nut on the saddle and clamp the taper attachment to the ways by setting the square headed screw on the clamp, then the taper slide bar controls the feed of the slide rest and the taper attachment is ready for operation.

Prices and Specifications of the Taper Attachment

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Maximum Length of Taper that can be cut at one setting	9 in.	9 in.	10 in.	10 in.	12 in.	12 in.	14 in.	14 in.
Maximum Taper, Inches per foot	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.	3 in.
Maximum Taper, Degrees	14	14	14	14	14	14	14	14
Prices of Taper Attachment	**$50.00**	**$60.00**	**$65.00**	**$70.00**	**$75.00**	**$80.00**	**$100.00**	**$115.00**

Graduated Taper Attachment in Operation

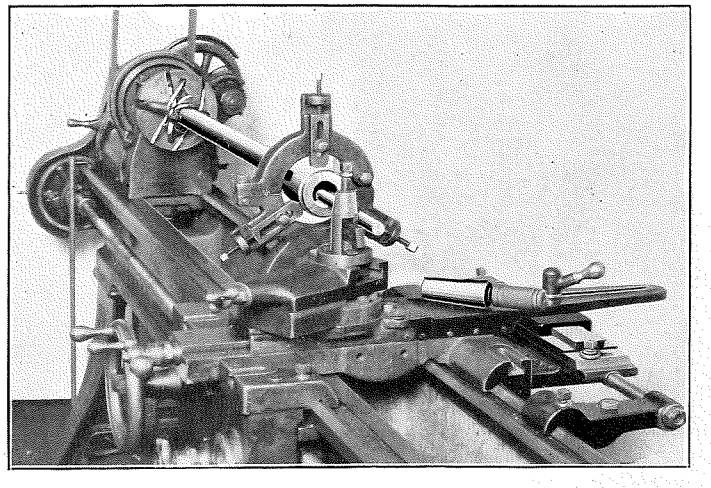


Turning Taper using the Graduated Taper Attachment

The illustration shows the application of taper attachment on a lathe, turning the taper shank of a spindle for a drill press. The taper is a Morse No. 5 and the job is being done between centers on the lathe.

Testing a Taper Fit

In testing the taper on a piece of work that is to fit a spindle and is nearly finished, make a chalk mark along the element or side of the taper piece. Place the work in the taper hole it is to fit and turn carefully by hand. Then remove the work and the chalk mark will show where the taper is bearing. If it is a perfect fit, it will indicate along the entire line of the chalk mark. If it is not, it will show where the adjustment is needed. Make the adjustment, take another light chip and test again. Be sure the taper is correct before turning to the finished diameter.



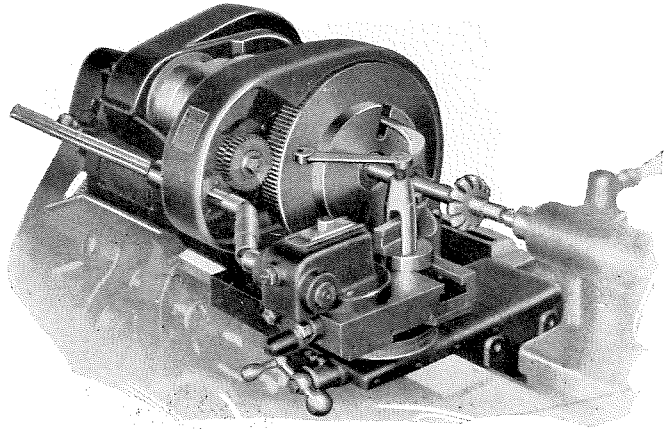
Boring a Taper Hole with the Taper Attachment

The illustration shows the application of the taper attachment boring a No. 4 Morse taper hole in a drill press spindle. One end of the spindle is held on the head center, the other end in the center rest.

After the spindle has been bored for the No. 4 Morse taper as illustrated above, it is good practice to stop the lathe and with a No. 4 Morse taper reamer, take a light chip, turning the reamer by hand, using a tap wrench for turning. This operation will standardize size of the taper hole.

Height of Cutting Edge of the Tool for Taper Turning and Boring

For the turning and boring of tapers, the cutting edge of the too should be set exactly at the center of the work. That is, set the point of the cutting edge even with the point of the tail stock or head stock center of the lathe.



Relieving Attachment for South Bend Lathes

The illustration shows the relieving attachment in use on the Lathe for relieving a formed cutter. No machine work or special parts are required to fit the relieving attachment to any size South Bend Lathe listed below.

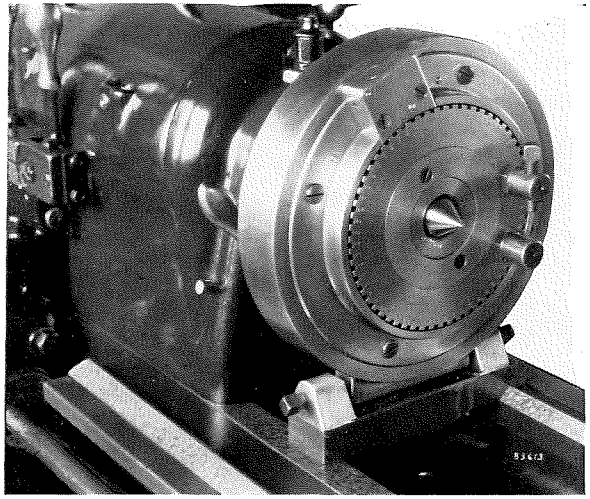
This attachment does every kind of relieving except spiral relieving. It has an unlimited range of angular work. It can be quickly changed from relieving to plain turning, thread cutting or vice versa. It has a graduated scale for amount of relief from 0 to 7/16 inch.

The diameter of work that can be relieved on

13-inch lathe is 4½ inches,
16-inch lathe is 5½ inches,
18-inch lathe is 7 inches.

The class of work that can be relieved consists of: Milling cutters, reamers, taps, hobs, etc. It is also arranged for internal relieving of threading dies, etc.

Size of Lathe.....	13-in.	15-in.	16-in.	18-in.
Price of Relieving Attachment....	**$285.00**	**$285.00**	**$285.00**	**$310.00**



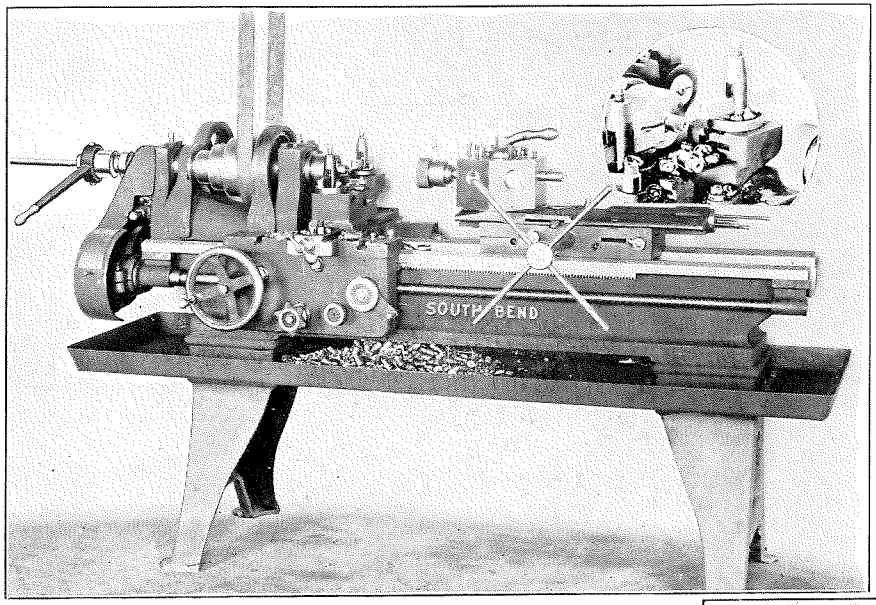
Speed Reducing and Indexing Face Plate

The cut illustrates the new Pratt & Whitney speed reducing face plate attachment for screw cutting lathes. It gives a reduction of 6 to 1 in the spindle speed which makes an extremely slow speed. Prices on this attachment for the various size South Bend Lathes may be had on application.

The attachment takes the general form of a face plate. A gear is attached to the spindle nose of the lathe, and two planetary gears mesh with this gear and a large, fixed internal gear which is held from rotating by being clamped to the bed. These two planetary gears are attached to a separate plate which carries a driving dog, and this plate is given the reduced speed through the gearing.

Indexing Face Plate

The reducing face plate can also be used as an accurate index plate, as it has 60 notches, giving every sub-division needed for ordinary work requiring multiple starts.



The Lathe as a Screw Machine for Bar and Rod Work

The illustration at the left shows the application of the screw cutting lathe in use as a screw machine for making small, hollow screws, with a close-up of the set-up of the cutting tools.

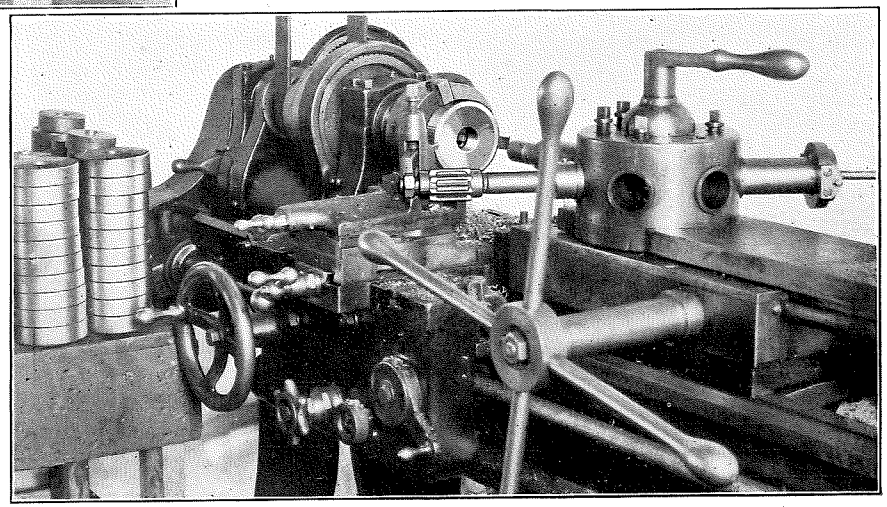
The draw-in chuck attachment is fitted with a hand lever closing device which allows the collet to be opened or closed and the rods fed through without stopping the lathe.

The screw cutting lathe can be used as a screw machine for bar and rod work in manufacturing, by using the quick acting hand lever draw-in chuck attachment in conjunction with the turnstile bed turret and lathe carriage.

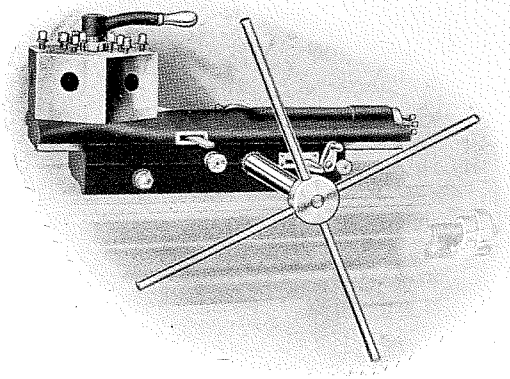
The Lathe as a Turret Lathe for Chucking Work

The illustration at the right shows a screw cutting lathe fitted with a turnstile turret on the bed for chucking work. The turret is bored to receive six different tools. The job illustrated is that of machining steel discs. The tools in the turret are: A centering tool, a drill, a boring tool, and a reamer.

The lathe fitted with a turnstile turret makes an excellent chucking machine for manufacturing. While the work is held in the chuck, a tool may be used in the tool post, using the carriage feeds for facing or turning, and the turret tools can be in operation at the same time, operated by an automatic feed on the turret slide.



Bed Turrets for South Bend Lathes



Automatic Turnstile Turret on Bed

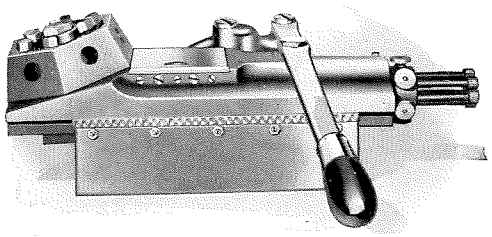
The turret slide of the Turnstile Turret is fed by hand, but after the operation of each tool on the work the turnstile automatically revolves the turret 1/6 of a turn which brings the next tool into position. The turret has six holes for tools. Adjustable stops on the end of the slide regulate the depth of each of the six holes.

This turret should be fitted to the lathe at the factory.

The turret slide may be fitted with automatic feed if desired, at extra cost. Prices will be furnished on request.

Prices of Automatic Turnstile Turret

Size of Lathe	Turret Feed	Size of Turret Holes	Price of Turret
11-in.	6 in.	1 in.	**$200.00**
13-in.	7 in.	1 in.	**210.00**
15-in.	8 in.	1 in.	**210.00**
16-in.	9 in.	1 in.	**210.00**
18-in.	12 in.	1¾ in.	**300.00**



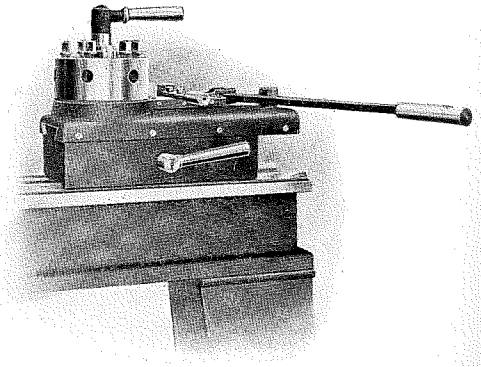
Automatic Bed Turret with Hand Lever

The automatic bed turret with hand lever illustrated above is intended only for the 9-inch and 11-inch lathes. The turret revolves automatically 1/6 of a turn each time the hand lever is brought back to the latch release. There are six stops that are adjustable for regulating the depth of each of the six tools. The feed of the turret slide is controlled by the hand lever.

This turret should be fitted to the lathe at the factory.

Prices of Automatic Bed Turret with Hand Lever

Size of Lathe	Turret Feed	Size of Turret Holes	Price of Turret
9-in.	4¼ in.	9/16 in.	**$150.00**
11-in.	4¼ in.	9/16 in.	**150.00**



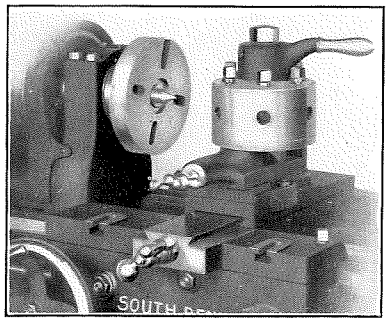
Hand Feed Bed Turret with Hand Lever

The Bed Turret illustrated above is not automatic, as the turret head is revolved by hand. To place in operation the various tools the turret lever is released and the hand lever drawn back. The turret is then revolved by hand and can be locked on any one of the six tools by the hand lever latch. The turret must be fastened by the top lever before each tool operates.

This is a practical turret and is low in price because it is not equipped with the automatic turning device.

Prices of Hand Feed Bed Turret with Hand Lever

Size of Lathe	Turret Feed	Size of Turret Holes	Price of Turret
11-in.	4½ in.	¾ in.	**$78.00**
13-in.	5½ in.	⅞ in.	**88.00**



Tool Post Turret

Style E

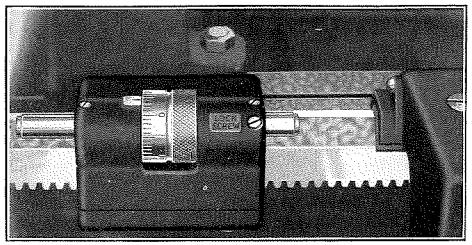
The illustration shows the application of a tool post turret held in the compound rest of the lathe.

The turret must be revolved ⅙ of a turn by hand after each tool has been in action.

The turret holes are about two inches deep and are left undersize in diameter so they can be bored out to the sizes shown below, on the lathe, to insure perfect alignment with the lathe spindle.

Prices and Specifications of Tool Post Turret

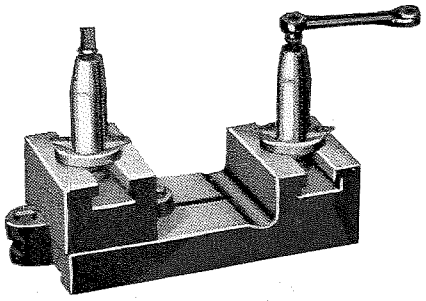
Size of Lathe	Size of Turret Holes	Price of Turret
9-in.	¾ in.	**$45.00**
11-in.	¾ in.	**45.00**
13-in.	⅞ in.	**55.00**
15-in.	1¼ in.	**70.00**
16-in.	1¼ in.	**70.00**



Micrometer Carriage Stop

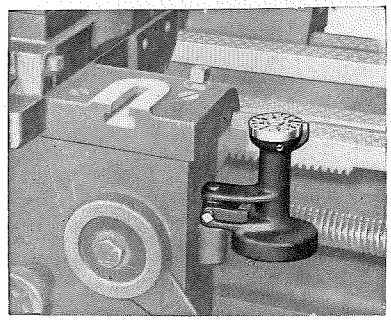
The micrometer carriage stop illustrated above is clamped to the front way of the lathe bed to be used as a stop, limiting the hand feed of the carriage.

Price for any size Lathe, **$10.00.**



Double Tool Rest Slide

This tool rest is scraped and fitted to the saddle of the lathe and operated by the cross feed screw. Prices on application.



Thread Dial for a Lathe

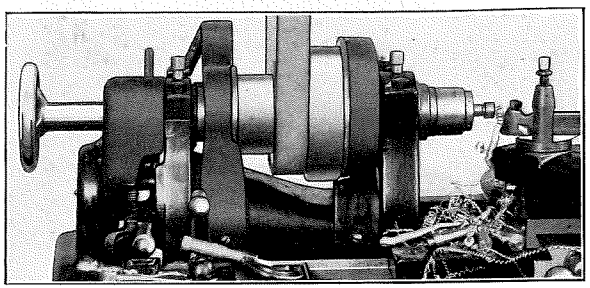
The cut shows a thread dial fitted to the carriage of a South Bend Lathe. This thread dial assists the operator to cut screw threads of various pitches on the lathe, as he can release the half nuts after each cut, and reverse the carriage by hand so that when the cutting tool is at the starting point of the thread he can then clamp the half nuts on the lead screw, being guided by the thread dial as to the proper time to clamp them on the screw.

The thread dial is used when cutting screw threads in quantity.

Prices of Thread Dial

Size of Lathe	Price of Dial
9-in.	**$ 8.00**
11-in.	**8.00**
13-in.	**8.00**
15-in.	**10.00**
16-in.	**11.00**
18-in.	**12.00**
21-in.	**13.00**
24-in.	**14.00**

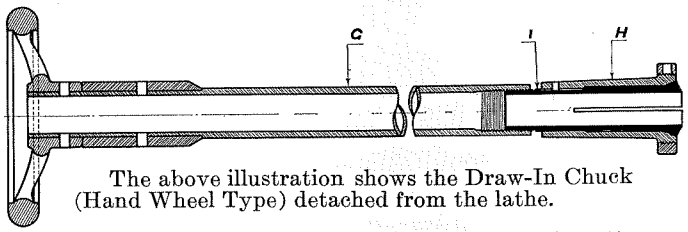
Draw-In Chuck Attachments for South Bend Lathes



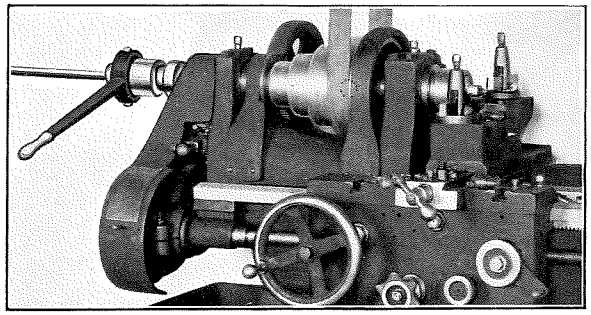
No. 43 Draw-In Chuck (Hand Wheel Type)

The above illustration shows a lathe fitted with Draw-In Chuck Attachment (Hand Wheel Type). The expert tool and die maker is very partial to the Draw-In Chuck Attachment on small lathes from 9-inch to 16-inch swing, inclusive. His experience is that for production of small, delicate and accurate parts, the efficiency of the Draw-In Chuck Attachment is remarkable, especially in the two most important qualities, namely, production and accuracy.

Collet capacity of the Draw-In Chuck Attachments for the various lathes is shown in the tabulation below.



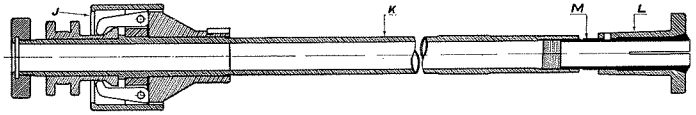
The above illustration shows the Draw-In Chuck (Hand Wheel Type) detached from the lathe.



No. 52 Draw-In Chuck (Hand Closing Lever Type)

The illustration shows Draw-In Chuck Attachment (Hand Closing Lever Type). The automatic closing lever enables the stock to be fed without stopping the machine. The attachment may be fitted to any size South Bend Lathe and is especially recommended in manufacturing small duplicate parts or when using the lathe as a screw machine.

Collet capacity of the Draw-In Chuck Attachment for the various lathes is shown in the tabulation below.

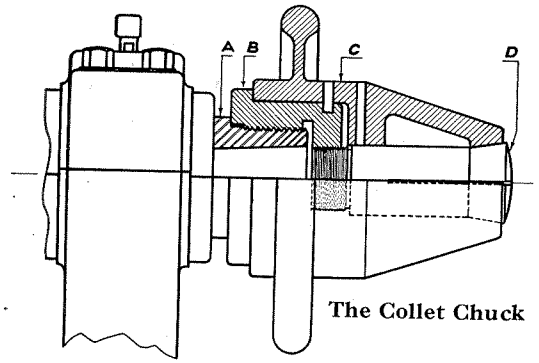


The above illustration shows the Draw-In Chuck (Hand Closing Lever Type) detached from the lathe. The lever is included with the equipment but is not shown in drawing.

Prices of Draw-In Chucks and Collets (Prices of Draw-In Chuck Attachments include one Collet)

Size of Lathe	Catalog Number	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.
Hole through Lathe Spindle	.....	3/4 in.	7/8 in.	1 in.	1 1/8 in.	1 5/16 in.	1 3/8 in.
Collet capacity of Draw-In Chuck Attachments, 1/16-in. up to	.....	1/2 in.	9/16 in.	11/16 in.	3/4 in.	7/8 in.	1 in.
Price of Draw-In Chuck Attachment (Hand Wheel Type)	43	**$30.00**	**$37.00**	**$40.00**	**$45.00**	**$50.00**	**$55.00**
Price of Draw-In Chuck Attachment (Hand Lever Type)	52	**45.00**	**55.50**	**60.00**	**67.50**	**75.00**	**82.50**
Spring Collets for Round Stock, each	.....	**3.00**	**3.75**	**4.50**	**5.00**	**5.50**	**6.00**

Collet Chuck (Fitted to Spindle Nose)



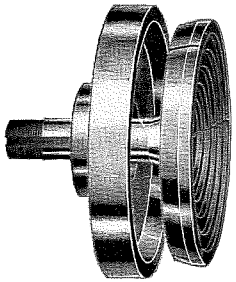
The Collet Chuck

The illustration shows the application of a collet chuck fitted to the spindle nose of the lathe. The advantage of the collet chuck is that it can take a larger capacity collet, being limited only by the diameter of the hole in the lathe spindle. The collet chuck is adjusted by turning the wheel "C" which opens and closes the Collet as desired.

Prices of Collet Chucks and Collets

Prices of Collet Chucks include one spring collet.

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Collet Capacity $\frac{1}{16}$ in. up to	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.	$1\frac{1}{8}$ in.	$1\frac{1}{4}$ in.	$1\frac{3}{8}$ in.	$1\frac{1}{2}$ in.
Prices of Collet Chucks	$30.00	$37.00	$40.00	$45.00	$50.00	$55.00	$70.00	$80.00
Extra Collets for Collet Chucks	3.50	3.50	4.00	4.00	11.00	11.00	11.00	15.00



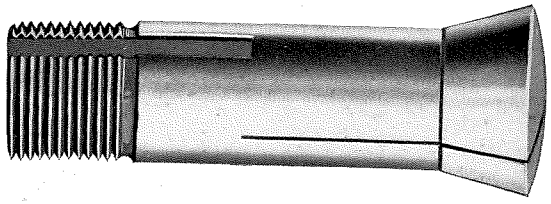
Step Chuck and Closer

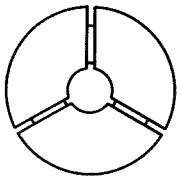
Step Chucks and Closers

Step Chucks and Closers are extremely useful in holding large and small punchings, thin tubing, etc., the chucks being readily turned out for receiving the work to be held.

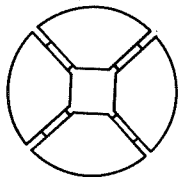
Prices of Step Chucks and Closers furnished on application.

Spring Collets

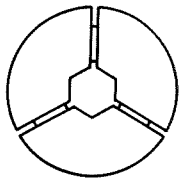




Round



Square



Hexagon

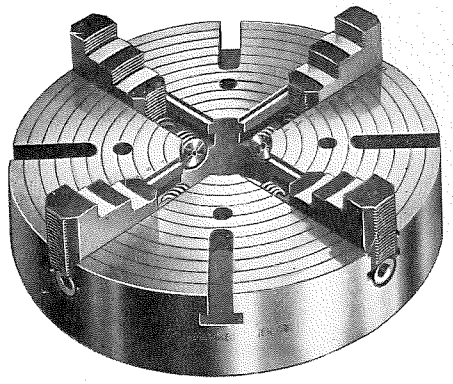
The above illustrations show the styles of spring collets that are used in the Draw-in Chuck Attachments and the Collet Chuck.

The collets are made of steel, hardened and ground inside and outside and are capable of holding the most accurate work.

Round Spring Collets for Draw-in Chucks

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Capacity $\frac{1}{16}$ in. up to	$\frac{1}{2}$ in.	$\frac{9}{16}$ in.	$\frac{11}{16}$ in.	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.	$1\frac{1}{8}$ in.	$1\frac{3}{8}$ in.
Price Each	$3.00	$3.75	$4.50	$5.00	$5.50	$6.00	$7.00	$11.00

The prices above are for round spring collets for Draw-in Chucks. Prices of square or hexagon spring collets sent on application.



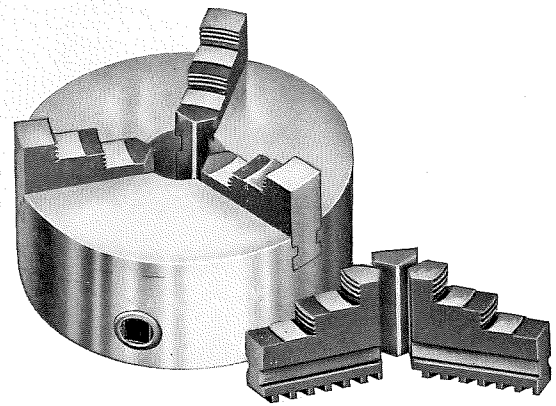
Independent Lathe Chuck

With Four Independent Reversible Jaws

This Chuck has four solid jaws with half nut, reversible by running out of chuck at the periphery, and turning end for end. The jaws are hardened, have raised and ground steps. The face of Chuck is ground true to straight edge and is accurately graduated in inches. T-slots are furnished only on chucks 12 inches and larger.

They are all made with **hardened steel bearing** for the screws. Price includes wrench.

Rated Size of Chuck Inches	Number of Chuck	Will Hold About Inches	Price 4-Jaw Chuck
4½	904	6	**$20.00**
6	906	7½	**22.00**
7½	907	8¾	**25.00**
8	908	9½	**26.00**
9	909	11½	**28.00**
10	910	12½	**30.00**
12	912	14½	**35.00**
14	914	16½	**40.00**
15	915	18	**43.00**
16	916	19	**46.00**
18	918	21	**54.00**



Universal Chuck

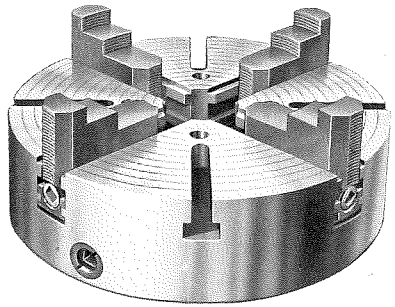
Geared Scroll

With Two Sets of Jaws

The 3-jaw Universal Geared Scroll Chuck is intended for holding round work. The jaws operate universally and center the work. This chuck is usually fitted with two sets of jaws, both of which are shown in the illustration.

This style chuck is used for holding round pieces. It is strictly a universal chuck the jaws being moved simultaneously by the scroll-threaded plate. Price includes wrench.

Rated Size of Chuck Inches	Number of Chuck	Will Hold About Inches	Price with 2 Sets of Jaws
3	3403	3⅛	**$20.00**
4	3404	4¼	**22.00**
5	3405	5	**24.00**
6	3406	6⅛	**28.00**
7½	3407	7½	**32.00**
9	3409	9	**38.00**
10½	3410	10¾	**44.00**
12	3412	12	**52.00**
15	3415	15	**70.00**



Combination Chuck

Geared Scroll

With Solid Reversible Jaws

This improved Chuck is provided with independently adjustable jaws which may be set as required for chucking round, elliptical or irregular work, either in a concentric or in an eccentric position, and the Geared Scroll Jaw operating mechanism may be used to grip the work. In tightening by the scroll mechanism universally, it is not necessary to apply the wrench successively in different positions around the Chuck, as any single application will give the full gripping power.

Rated Size of Chuck Inches	Number of Chuck	Will Hold About Inches	Price 4-Jaw Chuck
4	8504	5⅜	**$31.00**
5	8505	6½	**34.00**
6	8506	7⅝	**39.00**
7½	8507	9¼	**47.00**
9	8509	11¼	**55.00**
10½	8510	12½	**63.00**
12	8512	14¾	**75.00**
15	8515	17½	**96.00**
18	8518	21	**124.00**

The Practical Type of Chuck for the Lathe

If the lathe is to have but one lathe chuck, it should be a 4-jaw Independent chuck, as it will hold work both rectangular, round, and various other shapes.

If the lathe is to be fitted with two chucks, then the Universal Geared Scroll Chuck should be used in addition to the Independent Chuck, as this enables the operator to handle a great deal of round work without time being spent for continually truing up the work, as the Universal Chuck is self centering.

The Size of the Lathe Chuck

The 4-jaw Independent Chuck should be as large as the lathe will swing with the chuck jaws extended beyond the body. The size of the Universal Chuck should be much smaller, as it is used for holding round work, and great capacity is not needed. In the tabulation we show the approximate size chuck, both the Universal and Independent, for each size lathe. The tabulation has been based on chucks to meet the requirements for general work in the machine shop.

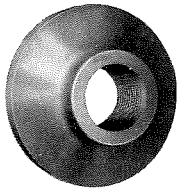
Size of Chucks for a Lathe

	Universal Chuck	Independent Chuck
9-inch Lathe, size of chuck	4½ in.	6 in.
11-inch Lathe, size of chuck	4½ in.	6 in.
13-inch Lathe, size of chuck	5 in.	7½ in.
15-inch Lathe, size of chuck	6 in.	9 in.
16-inch Lathe, size of chuck	7½ in.	10 in.
18-inch Lathe, size of chuck	9 in.	12 in.
21-inch Lathe, size of chuck	10 in.	14 in.
24-inch Lathe, size of chuck	12 in.	15 in.

Chuck Fitted to Lathe at Factory

When ordering a lathe with chuck included, the chuck should be fitted to the lathe before it leaves the factory, because it is a difficult job for one to fit a chuck accurately, especially without the proper tools for doing this work.

We have a special equipment for fitting chucks to lathes, charging only the actual cost of the labor and material. We do this as an accommodation to the customer, so that the chuck will fit the lathe accurately and run true.



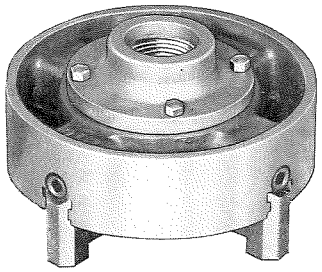
Chuck Back

Chuck Back Threaded To Fit Spindle Nose of Lathe

The illustration on the left shows a cast iron semi-machined chuck back that has been threaded to fit the spindle nose of the lathe. One of these chuck backs will be found in the equipment of the lathe.

Price of Extra Chuck Backs Threaded To Fit Spindle Nose

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Price	$1.50	$1.75	$2.00	$2.50	$3.00	$3.50	$4.00	$5.00



Fitting Lathe Chucks

The cut on the left shows a semi-machined chuck back that has been fitted to a 4-jaw Independent Lathe Chuck.

This chuck is now ready for use on the lathe.

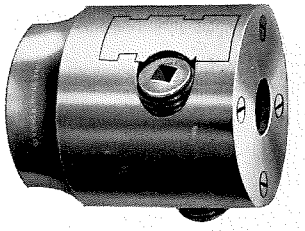
Prices for Fitting Lathe Chucks to Lathe

One Semi-Machined Chuck Back Included in Each Lathe Equipment.

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
No. 1. Price for fitting one Lathe Chuck to Lathe	$2.00	$2.25	$2.50	$3.00	$3.50	$4.00	$4.50	$5.00
No. 2. Price for fitting an extra Chuck to Lathe including extra Chuck Back	3.50	4.00	4 .50	5.50	6.50	7.50	8.50	10.00

Number one prices apply when only one lathe chuck is to be fitted to the lathe, as the semi-machined chuck back included with the lathe equipment is used in the fitting of this chuck.

Number two prices apply to the fitting of more than one lathe chuck to a lathe, using an extra semi-machined chuck back.



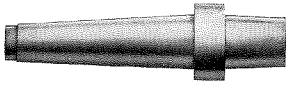
Drill Chuck

No.	Diameter	Capacity	Price
41	1 3/8 in.	0 to 1/4 in.	$6.00
42	1 11/16 in.	0 to 3/8 in.	6.50
43	2 3/16 in.	0 to 1/2 in.	7.00
44	2 7/8 in.	0 to 3/4 in.	8.00
45	3 7/16 in.	0 to 1 in.	10.00

A drill chuck for round or square shank drills. Jaws and screws are tempered cast steel. The hole in the hub fits taper arbor for use in head or tail spindle of lathe.

Drill Chuck Arbor

Machined to fit drill chuck.

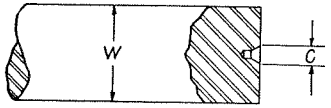


Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Finished Arbor	$1.75	$1.75	$2.00	$2.00	$2.00	$2.00	$2.50	$2.50

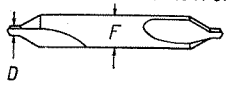
Combined Drill and Countersink

The above cut shows a combined drill and countersink made of carbon steel, hardened and ground, ready for use, which drills the center hole and countersinks a 60-degree angle for the lathe center.

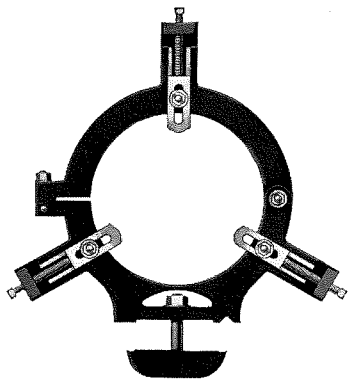
The drawing and tabulation below show the correct size of the countersunk center hole for the diameter of the work.



Combined Drill & Countersink



No. of Comb. Drill & Countersink	Dia. of Work W	Large Diameter of Countersunk Hole C	Dia. of Drill D	Dia. of Body F	Price Each	Price per Doz.
1	3/16" to 5/16"	1/8"	1/16"	13/64"	.25	2.25
2	3/8" to 1"	3/16"	3/32"	3/10"	.30	2.75
3	1 1/4" to 2"	1/4"	1/8"	3/10"	.30	2.75
4	2 1/4" to 4"	5/16"	5/32"	7/16"	.40	3.50



Extra Large Steady Rests

We can furnish Extra Large Steady Rests when desired.

Size of Lathe	Cap. of Reg. Steady Rests	Cap of. Spec. Extra Large Steady Rests	Price Each
13-in.	0 to 3 3/4 in.	3 3/4 to 8 3/4 in.	$16.00
15-in.	0 to 4 3/4 in.	4 3/4 to 10 1/2 in.	19.00
16-in.	0 to 4 3/4 in.	4 3/4 to 10 3/4 in.	24.00
18-in.	0 to 5 3/4 in.	5 3/4 to 12 1/2 in.	30.00
21-in.	0 to 6 3/4 in.	6 3/4 to 15 in.	35.00
24-in.	0 to 8 3/4 in.	8 3/4 to 17 in.	40.00

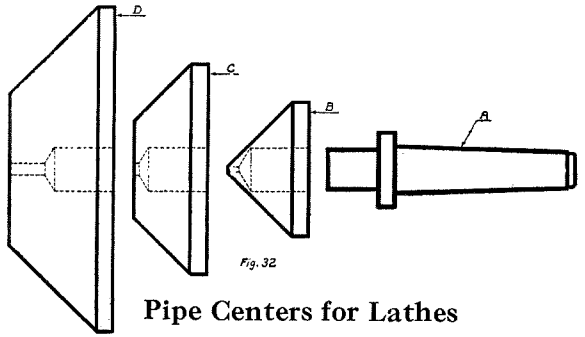
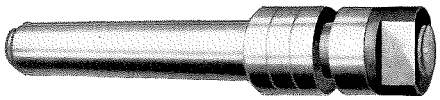


Fig. 32

Pipe Centers for Lathes

The above drawing shows a practical pipe center for the engine lathe. The taper shank "A" fits into the head spindle and tail stock spindle. The conical disc "B" fits loosely and revolves on taper shank "A".

	Size of Lathe	Price
Taper Shank "A"	9-in.	$3.00
Taper Shank "A"	11-in.	3.00
Taper Shank "A"	13-in.	4.00
Taper Shank "A"	15-in., 16 in., 18 in	4.50
Taper Shank "A"	21-in., 24 in	6.00
Disc "B" takes from 1/2-in. to 3-in. Pipe		6.00
Disc "C" takes from 3-in. to 5-in. Pipe		9.00
Disc "D" takes from 5-in. to 8-in. Pipe		15.00

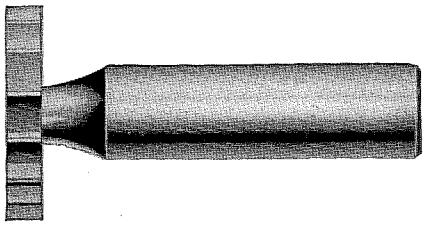


Milling Arbors for Cutters and Saws

The cut illustrates the arbor used in the head spindle of the lathe which holds milling cutters, slitting saws, etc. This arbor is made to take cutters with a 1-inch hole. Capacity between the shoulder and nut is 1⅜ inches.

Prices of Milling Arbors

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
No. of Morse Taper	2	2	3	3	3	3	4	4
Price of Arbor	$6.00	$6.00	$7.00	$7.00	$7.00	$7.00	$8.00	$8.00



Woodruff System Milling Cutters

The cut illustrates Woodruff System Keyseat Cutter. The right-hand cutters only are carried in stock. Prices on left-hand cutters on application.

No.	Diameter	Width	Price Each	No.	Diameter	Width	Price Each	No.	Diameter	Width	Price Each
1	½ in.	1/16 in.	$1.20	13	1 in.	3/16 in.	$2.15	21	1¼ in.	¼ in.	$2.50
3	½ in.	⅛ in.	1.20	15	1 in.	¼ in.	2.15	E	1¼ in.	⅜ in.	2.50
5	⅝ in.	⅛ in.	1.35	B	1 in.	5/16 in.	2.15	22	1⅜ in.	¼ in.	2.65
7	¾ in.	⅛ in.	1.60	16	1⅛ in.	3/16 in.	2.30	23	1⅜ in.	5/16 in.	2.65
9	¾ in.	1/16 in.	1.60	18	1⅛ in.	¼ in.	2.30	F	1⅜ in.	⅜ in.	2.65
11	⅞ in.	1/16 in.	1.75	C	1⅛ in.	5/16 in.	2.30	24	1½ in.	¼ in.	2.85
A	⅞ in.	¼ in.	1.75	19	1¼ in.	5/16 in.	2.50	25	1½ in.	5/16 in.	2.85
								G	1½ in.	⅜ in.	2.85

End Mills for Lathe Spindle Morse Taper

The end mill shown above fits into the head spindle of lathe. These end mills can be supplied with a cutting edge 7/16 inch to 1 inch inclusive in diameter, having a No. 2 Morse taper shank; ¾ inch to 1½ inch inclusive in diameter having a No. 3 Morse taper shank; 1¼ to 1½ inch inclusive in diameter with a No. 4 Morse taper shank.

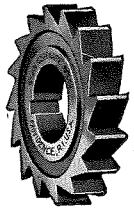
Prices of End Mills

No. 2 Taper	No. 3 Taper	No. 4 Taper
1/16 in. Dia. $2.50	¾ in. Dia. $3.15	1¼ in. Dia. $3.85
½ in. Dia. 2.70	⅞ in. Dia. 3.25	1⅜ in. Dia. 4.10
5/8 in. Dia. 2.70	1 in. Dia. 3.25	1½ in. Dia. 4.40
¾ in. Dia. 2.70	1⅛ in. Dia. 3.50	.....
⅞ in. Dia. 2.90	1¼ in. Dia. 3.75	.....
1 in. Dia. 3.10	1⅜ in. Dia. 4.00	.....
.....	1½ in. Dia. 4.40	.....

Face Milling and Side Milling Cutters

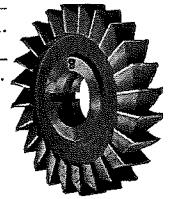
The face milling cutter machines the work on the face only. The side milling cutter will machine the work on the face and either side.

Milling Cutters (carbon steel)



Face Milling Cutters

Width of Face Inches	Diam. of Hole Inches	Diameter in Inches: Face Mill. Cutters	Diameter in Inches: Side Mill. Cutters	Prices of Cutters: Face Mill. Cutters	Prices of Cutters: Side Mill. Cutters
3/16	1	2½	.....	$1.65	.....
¼	1	2½	3	1.80	$3.15
5/16	1	2½	3	1.90	3.60
⅜	1	2½	3	2.10	3.85
7/16	1	2½	3	2.20	4.10
½	1	2½	3	2.30	4.30
5/8	1	2½	3½	2.50	5.80
¾	1	2½	4	2.80	7.65
⅞	1	2½	4	3.10	8.25
I	1	2½	5	3.30	9.90

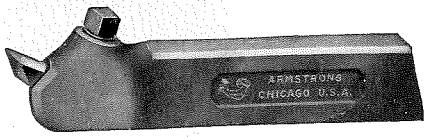


Side Milling Cutters

Patent Lathe Tool Holders

Each Patent Lathe Tool is carefully packed in a cardboard box, and price includes one Drop-Forged Wrench and one High-Speed Steel Cutter

Turning Tools



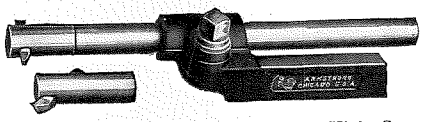
Size of Lathe	No. L.Hand	No. R.Hand	No. Straight	Size of Shank	Size of Cutter	Price Each Complete
9-in.	00-L	00-R	00-S	5/16 x 3/4 x 4 1/2 in.	3/16 in. sq.	$2.70
11-in.	0-L	0-R	0-S	3/8 x 7/8 x 5 in.	1/4 in. sq.	2.85
13-in., 15-in.	1-L	1-R	1-S	1/2 x 1 1/8 x 6 in.	5/16 in. sq.	3.25
16-in., 18-in.	2-L	2-R	2-S	5/8 x 1 3/8 x 7 in.	3/8 in. sq.	4.00
21-in., 24-in.	3-L	3-R	3-S	3/4 x 1 5/8 x 8 in.	7/16 in. sq.	5.40

High-Speed Steel Bits—Cutter Lengths—Hardened

Require grinding only to make them ready for use in **Lathe Tool Holders**

Size of Squares	3/16 in.	1/4 in.	5/16 in.	3/8 in.	7/16 in.	1/2 in.
Length	1 1/2 in.	2 1/4 in.	2 1/2 in.	3 in.	3 1/2 in.	4 1/4 in.
Price Each	$0.15	$0.20	$0.35	$0.55	$0.90	$1.30

Boring Tools



Price includes Holder and Bar, straight and 45-degree End Caps, two High-Speed Cutters and Double Head Wrench.

Size of Lathe	No.	Size of Shank	Size of Bar	Size of Cutter	Price Each Complete	Ex. Cutter Bits High Speed Steel
9-in.	00-B	5/16 x 3/4 in.	1/2 in. dia.	3/16 in. sq.	$4.90	$0.10
11-in.	8	3/8 x 7/8 in.	9/16 in. dia.	3/16 in. sq.	4.90	.10
13-in., 15-in.	9	1/2 x 1 1/8 in.	3/4 in. dia.	1/4 in. sq.	5.80	.18
16-in., 18-in.	10	5/8 x 1 3/8 in.	1 1/16 in. dia.	3/8 in. sq.	7.65	.30
21-in., 24-in.	11	3/4 x 1 5/8 in.	1 1/8 in. dia.	3/8 in. sq.	10.85	.50

Cutting-Off Tools

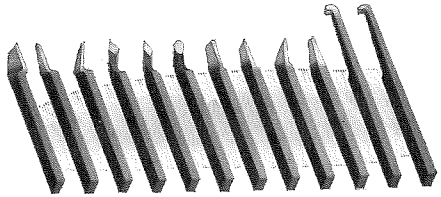
Size of Lathe	Right-Hand Off-Set	Size of Shank	Size of Cutters	Price Each Complete	Extra Cutters High Speed Steel
9-in.	No. 29-R	5/16 x 3/4 in.	3/32 x 1/2 in.	$2.85	$0.60
11-in.	No. 30-R	3/8 x 7/8 in.	3/32 x 5/8 in.	3.00	.65
13-in., 15-in.	No. 31-R	1/2 x 1 1/8 in.	1/8 x 3/4 in.	3.60	.90
16-in., 18-in.	No. 32-R	5/8 x 1 3/8 in.	1/8 x 7/8 in.	4.50	1.30
21-in., 24-in.	No. 33-R	3/4 x 1 5/8 in.	3/16 x 1 in.	6.00	2.15

Threading Tools

Price includes Wrench and a Single Point Cutter, V, U, S, or Whitworth Standard.

Size of Lathe	No.	Size of Holder, Inches	Price Each Complete	Extra Cutters High Speed Steel
9-in.	00-T	5/16 x 3/4 x 5	$4.15	$2.65
11-in.	50	3/8 x 7/8 x 5	4.15	2.65
13-in., 15-in.	51	1/2 x 1 1/8 x 6	5.00	3.15
16-in., 18-in.	52	5/8 x 1 3/8 x 7	6.40	4.15
21-in., 24-in.	53	3/4 x 1 5/8 x 8	8.25	5.25

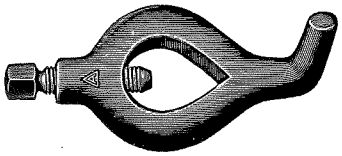
Forged Carbon Steel Lathe Tools



1 2 3 4 5 6 7 8 9 10 11 12

1. Left-hand Side Tool
2. Right-hand Side Tool
3. Right-hand Bent Tool
4. Right-hand Diamond Point
5. Left-hand Diamond Point
6. Round Nose Tool
7. Cutting-off Tool
8. Threading Tool
9. Bent Threading Tool
10. Roughing Tool
11. Boring Tool
12. Inside Threading Tool

Size of Lathe	9-in.	11-in.	13-in.	15-in.	16-in.	18-in.	21-in.	24-in.
Price of Tools, Each	$0.50	$0.65	$1.00	$1.50	$1.50	$1.50	$2.50	$2.50
Per Set of 12 Tools	5.00	6.50	10.00	15.00	15.00	15.00	25.00	25.00

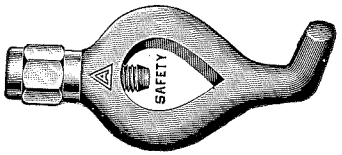


Lathe Dogs

These lathe dogs are heavy, malleable iron with hardened tool steel set screw. We can furnish forged steel dogs at higher prices if desired.

	Set 6A Size	Price Each		Set 6B Size	Price Each
No. 1	¼ in.	$0.40	No. 11	1¾ in.	$1.10
No. 2	½ in.	.50	No. 12	2 in.	1.20
No. 4	¾ in.	.60	No. 14	2½ in.	1.45
No. 6	1 in.	.70	No. 15	3 in.	1.60
No. 8	1¼ in.	.80	No. 16	3½ in.	1.80
No. 10	1½ in.	.95	No. 17	4 in.	2.10
		$3.95			$9.25

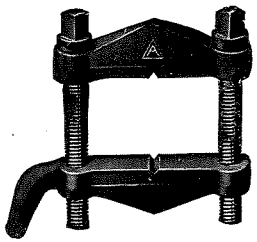
Entire Set of 6A..... $3.50 Entire Set of 6B..... $8.50
Set of 12 — 6A and 6B..... $11.00



Safety Lathe Dogs

The Safety Lathe dog is made of drop forged Steel. The set screw head is shielded. No special wrench is needed.

No.	Capacity Inches	Price Each	No.	Capacity Inches	Price Each
1-D	⅜	$1.80	7-D	1¾	$ 4.00
2-D	½	1.90	8-D	2	4.80
3-D	¾	2.00	9-D	2½	6.00
4-D	1	2.30	10-D	3	7.60
5-D	1¼	2.80	11-D	3½	10.00
6-D	1½	3.40	12-D	4	14.00



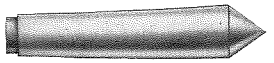
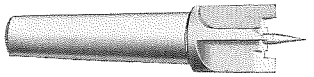
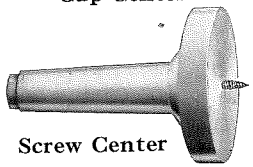
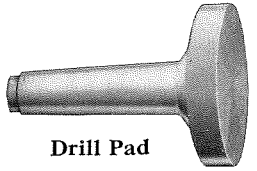
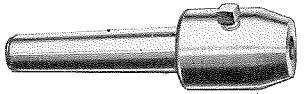
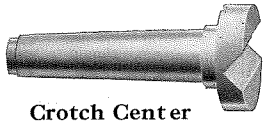
Clamp Lathe Dogs

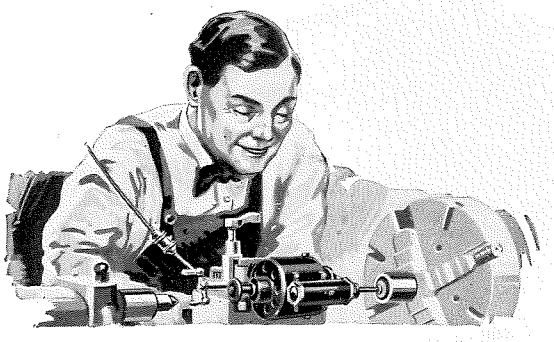
The clamp lathe dog is made of drop forged steel and is very practical for holding rectangular work.

No.	Capacity Inches Between Screws	Price Each Complete
11-C	1¾	$3.00
12-C	2¼	4.00
13-C	2¾	5.00
14-C	3½	7.00

Centers, Drill Pads, and Screw Drill Chucks

The illustrations show a number of accessories which are very useful for various classes of lathe work. These parts are machined and fitted to both head and tail spindles of the various size lathes.

SIZE OF LATHE	9 in.	11 in.	13 in.	15 in.	16, 18 in.	21, 24 in.
 60-degree Lathe Center	$2.00	$2.00	$2.50	$2.50	$2.50	$3.50
 Spur Center	3.00	3.00	4.00	4.00	4.00	5.00
 Cup Center	3.00	3.00	4.00	4.00	4.00	5.00
 Screw Center	3.00	3.00	4.00	4.00	4.00	5.00
 Drill Pad	3.00	3.00	4.00	4.00	4.00	5.00
 Screw Drill Chuck	3.00	3.00	4.00	4.00	4.00	5.00
 Crotch Center	3.00	3.00	4.00	4.00	4.00	5.00



Electric Tool Post Grinders

When ordering Electric Tool Post Grinders always specify voltage of current available.

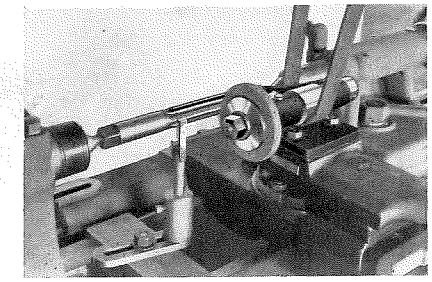
Prices of Electric Tool Post Grinders

For 9-in. and 11-in. Lathes **$40.00**
For 13-in., 15-in., 16-in., 18-in., 21-in. and 24-in. Lathes **80.00**

Raising Blocks for Lathes

Raising Blocks, to increase the swing of the lathe for turning and boring can be furnished for all Standard Change Gear South Bend Lathes. Raising Blocks cannot be fitted on Quick Change Gear Lathes.

Regular Swing over Bed	Swing over Bed with Raising Blocks	Gap Bed Lathes		Price of Raising Blocks	Extra for Equipment for Thread Cutting at Increased Swing
		Regular Swing over Gap	Swing over Gap with Raising Blocks		
9¼ in.	12 in.	Not Made	Not Made	**$22.00**	**$ 6.00**
11¼ in.	14 in.	16 in.	19 in.	**25.00**	Not Required
13¼ in.	18 in.	19 in.	24 in.	**30.00**	**10.00**
15¼ in.	20 in.	22 in.	27 in.	**35.00**	**12.00**
16¼ in.	22 in.	24 in.	30 in.	**40.00**	**12.00**
18 ¼in.	24 in.	26 in.	32 in.	**45.00**	Not Required
21¼ in.	27 in.	30 in.	36 in.	**55.00**	**18.00**
24¼ in.	30 in.	36 in.	42 in.	**75.00**	**23.00**



Grinding a Reamer in the Lathe

The above illustration shows an expansion reamer being ground to size on a South Bend Tool Room Lathe equipped with No. 10 Grinding Attachment.

Taper reamers, spiral reamers and many cutters can be ground or backed off with this attachment.

The Grinder is operated from an overhead drum on an extra countershaft. This grinder and countershaft can be used on any size South Bend Lathe.

Specifications of No. 10 Grinder

Emery Wheel 6-in. Diameter ¾-in. Face. ⅝-in. hole.
Spindle Speed 3200 R. P. M.
Periphery Speed of Emery Wheel 5000 ft. per Min.
Countershaft Speed 500 R. P. M.
Size of Drum on Countershaft 12-in. Diameter. 10-in. Face.
Width of Spindle Belt 1½ in.
Width of Countershaft Drive Belt 2 in.

Prices of Grinder and Countershaft

No. 10 Grinding Attachment with 6-in. Emery Wheel **$25.00**
Drum Countershaft for Grinder **25.00**

Practical Sizes of Chucks and Tools for a Lathe

We receive a number of inquiries about the practical sizes of lathe chucks and tools for general machine shop work. In order to answer these questions we have made up three practical shop equipments which are listed below showing the net selling prices.

In each case we have listed the Quick Change Gear Lathe. Should a Standard Change Gear Lathe be wanted omit the Quick Change Gear price and add the Standard Change Gear price.

No. 1-X, Shop Equipment

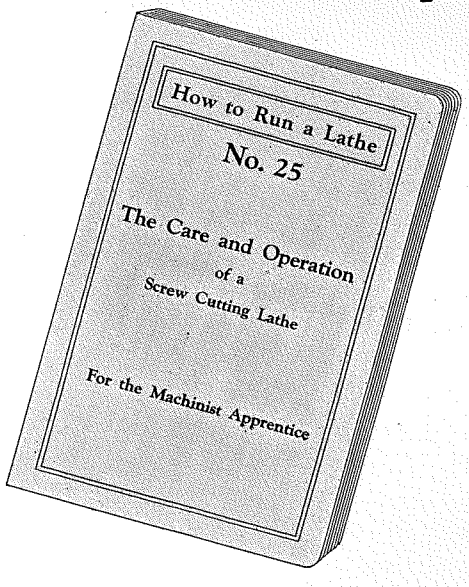
1	**No. 63-A, 11-In. x 4-Ft. South Bend Quick Change Gear Lathe, with regular equipment.** Price F. O. B. cars South Bend	$288.00
1	6-inch 4-jaw Independent Lathe chuck	22.00
	Fitting chuck to Lathe including semi-machined chuck plate	2.25
1	Standard Drill Chuck ½ inch capacity	7.00
1	Drill Chuck Arbor	1.75
1	Set (6-A) Lathe Dogs ¼-inch, to 1½-inch., inclusive	3.50
1	No. O-S Patent Turning Tool	2.85
1	No. 30-R Cutting Off Tool	3.00
1	No. 50 Threading Tool	4.15
1	No. 8 Boring Tool	4.90
	Total, F. O. B. South Bend	$339.40

No. 2-X, Shop Equipment

1	**No. 65-B, 13-In. x 5-Ft. South Bend Quick Change Gear Lathe, with regular equipment.** Price F. O. B. cars South Bend	$354.00
1	7½-inch 4-jaw Independent Lathe chuck	25.00
	Fitting chuck to Lathe including semi-machined chuck plate	2.50
1	Standard Drill Chuck ½-in. Capacity	7.00
1	Drill Chuck Arbor	2.00
1	Set (6-A) Lathe Dogs ¼-in. to 1½-in., inclusive	3.50
1	No. 1-S Patent Turning Tool	3.25
1	No. 31-R Cutting Off Tool	3.60
1	No. 51 Threading Tool	5.00
1	No. 9 Boring Tool	5.80
	Total, F. O. B. South Bend	$411.65

No. 4-X Shop Equipment

1	**No. 69-E, 16-In. x 8-Ft. South Bend Quick Change Gear Lathe, with regular equipment.** Price F. O. B. cars South Bend	$498.00
1	10-in. 4-jaw Independent Lathe chuck	30.00
	Fitting chuck to Lathe including semi-machined chuck plate	3.50
1	Standard Drill Chuck 1-in. capacity	10.00
1	Drill Chuck Arbor	2.00
1	Set (9) Lathe Dogs ½-in. to 3-in., inclusive	8.50
1	No. 2-S Patent Turning Tool	4.00
1	No. 32-R Cutting Off Tool	4.50
1	No. 52 Threading Tool	6.40
1	No. 10 Boring Tool	7.65
	Total, F. O. B. South Bend	$574.55



"How to Run a Lathe"

A Partial List of the Subjects Contained in This Book

The care and application of lathe tools.
Centering work and the care of lathe centers.
Cutting speeds of various metals.
Machining between centers and in the chuck and on the face plate.
Taper turning and boring and rules for finding angle of taper.
Cutting of screw threads and rules for cutting same.
The lathe as a screw machine and for chucking work.
Boring, drilling and reaming in the lathe.
Useful tables and miscellaneous information on lathe work.

Price 25c Postpaid

A copy of this valuable 160-page hand book will be sent postpaid to any address on receipt of 25c. Coin or stamps of any country accepted. This book is useful to the apprentice in the machine shop.

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Countershaft Driven Lathes

STANDARD CHANGE GEAR LATHES

QUICK CHANGE GEAR LATHES

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BENCH LATHES

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BED TURRETS AND HAND LEVER TURRETS

LATHE CHUCKS, DRILL CHUCKS

LATHE TURNING AND BORING TOOLS

MISCELLANEOUS PARTS

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