Catalog 9-F

9" SOUTH BEND Precision LATHES

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The South Bend Lathe Works was established in November, 1906, and for 41 years has manufactured South Bend Back-Gear ed Screw-Cutting Precision Lathes exclusively.

The Lathes shown in this catalog are designed and built to give years of satisfactory service. The materials and workmanship entering into their construction are the best that can be obtained. Smooth vibration-free operation is achieved by using a back-gear ed headstock, with direct belt drive to the spindle for high speeds. Superfinished headstock spindle bearing surfaces and large diameter bearings assure rigidity and permanent accuracy.

Extras for 9" South Bend Lathes

Extras are attachments and accessories which may be fitted to the lathe for doing many classes of special work. Most of the extras may be ordered either with the lathe or later.

These extras are listed on pages 24 to 34 inclusive in this catalog and each is identified as being either a "Standard Extra" or a "Purchased Extra."

Standard Extras are items manufactured by us for use on South Bend Lathes, and include such items as draw-in collet chuck attachments, taper attachment, thread dial indicator, carriage stop, etc.

Purchased Extras are items which we do not manufacture but which we purchase from other manufacturers. In the case of such Purchased Extras we act only as a seller for the convenience of users of South Bend Lathes. Purchased Extras include motors and controls, lathe chucks, etc.

Countershaft Drive

The Model A, Model B, and Model C 9-inch swing lathes described in this catalog can be supplied to order with countershaft drive. Prices will be quoted on request.

10" and Larger Lathes

In addition to the 9" Lathes shown in this catalog, we manufacture 10", 13", 14 1/2", and 16" swing lathes. These are illustrated and described in a separate catalog which will be mailed on request. Please state size of lathe in which you are interested when requesting catalog.

Export Shipment

When South Bend Lathes are ordered for export shipment, they are not crated as for domestic shipment, but are securely packed in a substantial export shipping box suitable for ocean shipment.

The export having charges (quoted on request) include dismantling the lathe so that it can be packed in the least possible space, covering all bright parts with waterproof grease, wrapping parts in waterproof paper, and blocking all units to prevent shifting in the box.

Guarantee

The South Bend Lathe Works warrants South Bend Lathes and equipment to conform to or exceed the specifications set forth in the manufacturer's catalogs in use at the time of sale and reserves the right, at its own discretion, without notice and without making similar changes in articles previously manufactured, to make changes in materials, design, finish, or specifications.

The South Bend Lathe Works warrants products of its own factory against defects of material or workmanship for a period of one year from the date of sale. The manufacturer's liability under this warranty shall be limited to replacing, free of charge, f.o.b. South Bend, Indiana, any such parts proving defective within the period of this warranty, but the manufacturer will not be responsible for transportation charges or consequential damages.

The South Bend Lathe Works makes no warranty with respect to electrical equipment or Purchased Extras as described in the manufacturer's catalogs.
Features of 9-inch South Bend Lathes

Precision Tools for Fine Machine Work

South Bend 9-inch Lathes are precision tools, capable of machining work to the exacting tolerances demanded in modern industry. They are recommended for the production of small, accurate parts in the manufacturing plant, for precision work in the toolroom, for general use in the machine shop, and shops of all kinds engaged in the machining of steel, cast iron, bronze, tool steel, fibre, plastics, Bakelite, and similar materials.

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

Accuracy and Durability are built into every 9-inch South Bend Lathe. The workmanship and materials are the best that can be obtained. The substantial design assures permanent alignment of the headstock, tailstock, and other major units. Unusually large bearing surfaces give this lathe the power and rigidity for taking heavy cuts and the precision accuracy for the most exacting tool and instrument work.

Highest Standards of inspection are maintained, from the planning of the lathe bed to the final inspection tests. All dovetails and V-ways are carefully hand-scraped and the headstock, tailstock, and other units are aligned to the most exacting specifications.

Lathe Bed is made of special quality gray iron with 50 percent steel, which makes a hard, close grained metal having long wearing qualities. Bed is heavily constructed and reinforced by heavy cross braces its entire length. Three V-ways and one flat-way accurately planed and hand-scraped, align and support the headstock, carriage, and tailstock.

Back-Gear Headstock is hand-scraped to lathe bed; has three-step cone pulley; six or twelve changes of spindle speeds, depending on type of drive; wrenchless bull gear lock; and lever reverse for threads and feeds. Headstock is also available with V-belt drive, providing eight or sixteen spindle speeds.

Bearings for Headstock spindle are unusually large, being of the integral type, and are precision bored to fit the spindle. Bearings are adjustable for wear, and have oil reservoirs with new improved capillary oiling system.

Headstock Spindle is made of a special quality alloy spindle steel, with all bearing surfaces carburized, hardened, and ground. Journal bearing surfaces are superfinished to a smoothness of five microinches (.000005)*. Spindle has ball thrust bearing and take-up nut for eliminating end play. A 3/4-inch hole is bored the entire length of spindle, with No. 3 Morse standard taper in front end for spindle sleeve which takes No. 2 Morse taper center.

Tailstock is substantially designed with long hand-scraped bearing on bed. Tailstock top has set-over for taper turning. Tailstock spindle is graduated and is made of high quality spindle steel. Tailstock center is hardened and is self-ejecting.

Carriage has unusually long bearings (9 1/16 inches) on V-ways of lathe bed, providing a solid support for the cutting tool and reducing wear to a minimum. V-ways of saddle are hand-scraped to match V-ways of lathe bed perfectly and are fitted with felt wipers to clean and oil the bed.

Compound Rest is graduated 180 degrees, swivels to any angle, and has improved locking device with double binder. Compound rest screw and cross-feed screw have micrometer collars graduated to read in thousandths of an inch. Dovetails are hand-scraped and have adjustable gibbs.

*Perfected reading to micrometers only.

SOUTH BEND LATHE WORKS

www.OzarkToolManuals.com
Features of 9-inch South Bend Lathes (Continued)

Made in Three Models

There are three models of South Bend 9-inch lathes: Model A, Model B, and Model C. All three models are identical, except for the thread cutting and power feed mechanism.

Model A 9-inch Lathes have quick change gear box and automatic apron providing a series of 48 screw threads, 48 power longitudinal feeds, and 48 power cross-feeds.

Model B 9-inch Lathes have independent change gear equipment and automatic apron providing a series of 45 screw threads, 23 power cross-feeds, and 26 power longitudinal feeds.

Model C 9-inch Lathes have independent change gear equipment and plain apron providing a series of 45 screw threads and 14 power longitudinal turning feeds.

Four Drives

Each of the three models of 9-inch lathes can be supplied in four different types of drives: the Underneath Motor Drive, the Twelve-Speed Horizontal Motor Drive, the Six-Speed Horizontal Motor Drive, and V-Belt Drive providing either eight or sixteen spindle speeds.

The Underneath Motor Drive (pages 19 and 21) is fully enclosed in the base of the lathe underneath the headstock. This drive provides a series of twelve spindle speeds ranging from 41 to 1270 r.p.m.

The Twelve-Speed Horizontal Motor Drive (pages 7 through 13) provides a series of twelve spindle speeds ranging from 41 to 1270 r.p.m. The motor drive equipment is mounted on the bench back of the lathe.

Fig. 1. Quick Change Gear Box Supplied on all Model A 9-inch South Bend Lathes

Fig. 2. Model A Lathe set up for cutting threads 4 to 7 per inch

Fig. 3. Model A Lathe set up for cutting threads 8 to 224 per inch

Fig. 4. Index Chart Showing Threads and Feeds Available on all Model A 9-inch South Bend Lathes

SOUTH BEND LATHE WORKS

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

MANUFACTURED BY SOUTH BEND LATHE WORKS

9-INCH SOUTH BEND LATHE
Model A

CATALOG NO.

THREADS PER INCH

FEEDS IN THOUSANDS

STAB

BEND

LEFT

HAND

BEND

RIGHT

HARD

THRESH

FEEDS

A

B

C

D

E

A

B

C

D

E

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The *Six-Speed Horizontal Motor Drive* (page 15) is similar to the *Twelve-Speed Horizontal Motor Drive*.

The *V-Belt Horizontal Motor Drive* (page 17) has cone pulleys for V-belt instead of flat belt.

**Gear Box for Model A Lathes**

The quick change gear box supplied on all Model A 9-inch Lathes is shown in Fig. 1, page 4. Changes for the various screw threads and power feeds are made by shifting the two levers on the front of the gear box.

Screw threads and power feeds available through the gear box are listed on the index chart, Fig. 4, page 4. By shifting the levers on the gear box any thread from 8 to 224 per inch is instantly available. Coarse threads ranging from 4 to 7 per inch are obtained by changing the stud gear. See Figs. 2 and 3.

**Automatic Apron for Model A and Model B Lathes**

The Model A and Model B 9-inch Lathes are equipped with an automatic apron as shown in Fig. 5. This apron is equipped with a worm drive and friction clutch for operating the automatic power cross-feeds and the automatic power longitudinal feeds. The threads of the lead screw are not used for the power longitudinal turning feeds on lathes equipped with the automatic apron.

The feed change knob on the front of the apron has three positions: top for automatic power longitudinal feeds; center for a neutral position; and bottom for the automatic power cross-feeds. An automatic safety interlock prevents engaging half-nuts when the friction clutch automatic feeds are in operation.

**Plain Apron for Model C Lathes**

Model C 9-inch lathes are equipped with a plain geared screw feed apron as illustrated in Fig. 6. Power longitudinal turning feeds are obtained by engaging the half-nuts with the lead screw. The cross-feed on the Model C 9-inch Lathe is hand operated.
9-inch Toolroom Precision Bench Lathe

Twelve-Speed Drive — Back-Geared — Belt Drive to Spindle
Power Longitudinal Feeds and Power Cross Feeds

The 9-inch Toolroom Bench Lathe with Twelve-Speed horizontal motor drive is illustrated at the left. This is the same as the Model A lathe (page 9) except for the toolroom attachments.

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

The Quick Change Gear Box provides for cutting right- and left-hand screw threads from 4 to 224 per inch. Power longitudinal feeds .0015" to .0653" and power cross-feeds .0004" to .0252" are also obtained through the gear box. See page 4.

The Automatic Apron has a smooth operating worm drive and friction clutch which permits engaging or disengaging the power cross-feed or the power longitudinal feed instantly. See illustration on page 5.

Drive Equipment consists of: Twelve-Speed horizontal motor drive unit providing a series of 12 spindle speeds ranging from 41 to 1270 r.p.m.; motor pulley with ¾" hole; V-belt; flat leather belt and lacing. Motor and control are not included in price.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>3-ft.</th>
<th>3½-ft.</th>
<th>4-ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headstock spindle hole</td>
<td>¾&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headstock spindle nose threads</td>
<td>1⅝&quot;-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead screw, 29&quot; Acme Thread</td>
<td>½&quot;-8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor, size required (see page 30)</td>
<td>1½ h.p.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle speeds, approx., high speed range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.p.m., direct belt driven</td>
<td>1270, 716, 408</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.p.m., back-gears engaged</td>
<td>260, 138, 29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle speeds, approx., low speed range</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.p.m., direct belt driven</td>
<td>665, 370, 212</td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.p.m., back-gears engaged</td>
<td>127, 72, 41</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOUTHBEND 33, INDIANA, U.S.A.
9" X 3' SOUTH BEND MODEL A BENCH LATHE WITH TWELVE-SPEED DRIVE

www.OzarkToolManuals.com
Model A 9-inch South Bend Precision Bench Lathe

Twelve-Speed Drive—Quick Change Gear—Belt Drive to Spindle
Power Longitudinal Feeds and Power Cross-Feeds

The 9-inch Model A South Bend Lathes are precision tools, capable of machining work to the exacting tolerances demanded in modern industry. They are recommended for the production of small accurate parts in the manufacturing plant, for precision work in the toolroom, for general use in the machine shop, laboratory, and shops of all kinds engaged in the machining of steel, cast iron, bronze, tool steel, fibre, plastics, and similar materials.

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

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

The Automatic Apron has a smooth operating worm drive and friction clutch which permits engaging or disengaging the power cross-feed or the power longitudinal feed instantly. See illustration on page 5.

Drive Equipment consists of: Twelve-Speed horizontal motor drive unit providing a series of twelve spindle speeds ranging from 41 to 1270 r.p.m.; motor pulley with 3/4" hole, V-Left, flat leather belt and lacing. Motor and control are not included in price. See page 30. This lathe is also made with other types of drives as shown on pages 15, 17, and 21.

Regular Equipment included in price consists of: full automatic apron; quick change gear box; graduated compound rest; face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; installation plan; and book “How to Run a Lathe”. Bench is not included in price of lathe.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>3-ft.</th>
<th>3 1/2-ft.</th>
<th>4-ft.</th>
<th>4 1/2-ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headstock spindle hole</td>
<td>3/4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headstock spindle noses threads</td>
<td>1 1/2&quot;-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead screw, 29&quot; Acme Thread</td>
<td>9/32&quot;-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor, size required (see page 30)</td>
<td>1/2 h.p.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle speeds, approx., high speed range: r.p.m., direct belt driven</td>
<td>1270, 716, 408</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.p.m., back-gears engaged</td>
<td>246, 138, 79</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spindle speeds, approx., low speed range: r.p.m., direct belt driven</td>
<td>658, 370, 212</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r.p.m., back-gears engaged</td>
<td>127, 72, 41</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swing over bed and saddle wings</td>
<td>9 1/4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swing over saddle with chip guard</td>
<td>5 1/4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tailstock spindle graduations, each</td>
<td>1/4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tailstock spindle travel</td>
<td>2 1/4&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tailstock top set over for taper turning</td>
<td>5/8&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thread cutting range—48 pitches</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>R.H. or L.H.</td>
<td>4 to 224 per inch</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tool holder cutter bit</td>
<td>1/4&quot; sq.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tool holder shank</td>
<td>3/4&quot; x 12&quot;</td>
<td></td>
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</tbody>
</table>

SOUTH BEND LATHE WORKS

SOUTH BEND 22, INDIANA, U.S.A.
Model B 9-inch South Bend Precision Bench Lathe

Twelve-Speed Drive—Plain Change Gear—Belt Drive to Spindle

Power Longitudinal Feeds and Power Cross-Feeds

The 9-inch Model B South Bend Lathes are precision tools, capable of machining work to the exacting tolerances demanded in modern industry. They are recommended for the production of small accurate parts in the manufacturing plant, for precision work in the toolroom, for general use in the machine shop, laboratory, and shops of all kinds engaged in the machining of steel, cast iron, bronze, tool steel, fibre, plastics, and similar materials.

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

Change Gears provide for cutting right- and left-hand screw threads from 4 to 160 per inch. Power longitudinal feeds .0021" to .0199" and power cross-feeds .001" to .0046" are also obtained through the change gears. See page 5.

The Automatic Apron has a smooth operating worm drive and friction clutch which permits engaging or disengaging the power cross-feed or the power longitudinal feed instantly. See illustration on page 5.

Drive Equipment consists of: Twelve-Speed horizontal motor drive unit providing a series of twelve spindle speeds ranging from 41 to 1270 r.p.m.; motor pulley with 3/4" hole; V-belt; flat leather belt and lacing. Motor and control are not included in price. See page 30. This lathe is also made with other types of drives as shown on pages 15 and 17.

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

Model B 9-inch Twelve-Speed Bench Lathes

With Horizontal Motor Drive—Less Electrical Equipment and Bench

<table>
<thead>
<tr>
<th>Bed Length</th>
<th>3-ft.</th>
<th>3½-ft.*</th>
<th>4-ft.*</th>
<th>4½-ft.*</th>
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<tbody>
<tr>
<td>Catalog Number</td>
<td>677-Y</td>
<td>677-Z</td>
<td>677-A</td>
<td>677-R</td>
</tr>
<tr>
<td>Distance Between Centers</td>
<td>16-in.</td>
<td>22-in.</td>
<td>28-in.</td>
<td>34-in.</td>
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<tr>
<td>Shipping Weight, Gross</td>
<td>340 lbs.</td>
<td>370 lbs.</td>
<td>390 lbs.</td>
<td>420 lbs.</td>
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<tr>
<td>Code Word</td>
<td>Rough</td>
<td>Rough</td>
<td>Rough</td>
<td>Rough</td>
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</table>

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

SPECIFICATIONS

| Belt, width of cone pulley step for | 1" |
| Centers, Morse taper | No. 2 |
| Collet capacity, maximum | 1/2" |
| Compound rest top, angular hand feed | 2 1/4" |
| Cross slide travel | 5/16" |
| Face plate diameter, small | 5/8" |
| Feeds, cross (23) | .001" to .0046" |
| Feeds, longitudinal (26) | .0021" to .0155" |
| Headstock spindle front bearing, diameter | 1 1/8" |
| Headstock spindle hole | 3/4" |
| Headstock spindle nose threads | 1 1/2-8 |
| Lead screw, 29" Acme thread | 3/4-8 |
| Motor, size required (see page 30) | 1/2 h.p. |
| Spindle speeds, approx., high speed range | r.p.m., direct belt driven: 1270, 216, 408 r.p.m., back-gears engaged: 246, 138, 79 |
| Spindle speeds, approx., low speed range | r.p.m., direct belt driven: 658, 370, 212 r.p.m., back-gears engaged: 127, 72, 41 |
| Swing over bed and saddle winos | 9 1/4" |
| Swing over saddle with chip guard | 5 1/4" |
| Tailstock spindle graduations, each | 1/16 |
| Tailstock spindle travel | 2 1/8 |
| Tailstock top set over for taper turning | 1/8 |
| Thread cutting range—45 pitches | R.H. or L.H. 4 to 160 per inch |
| Tool holder cutter bit, | 1/4" sq. |
| Tool holder shank | 3/8" x 13/16" |

SOUTH BEND LATHE WORKS

SOUTH BEND 22, INDIANA, U.S.A.

www.OzarkToolManuals.com
Model C 9-inch South Bend Precision Bench Lathe

Twelve-Speed Drive—Plain Change Gear—Belt Drive to Spindle
Power Longitudinal Feeds and Hand Cross-Feed

The 9-inch Model C South Bend Lathes are precision tools, capable of machining work to the exacting tolerances demanded in modern industry. They are recommended for the production of small, accurate parts in the manufacturing plant, for precision work in the toolroom, for general use in the machine shop, laboratory, and shops of all kinds engaged in the machining of steel, cast iron, bronze, tool steel, fibre, plastics, and similar materials.

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

Change Gears provide for cutting right- and left-hand screw threads from 4 to 160 per inch. Power longitudinal feeds are obtained by engaging the half-nuts with the lead screw. The feeds range from .0021" to .0156" depending on the arrangement of the change gears. The cross-feed is operated by hand. See illustration of index chart on page 8.

Drive Equipment consists of Twelve-Speed horizontal motor drive unit providing a series of twelve spindle speeds ranging from 41 to 1270 r.p.m.; motor pulley with 3/4" hole; V-belt; flat leather belt and lacing. Motor and control are not included in price. See page 30. This lathe is also made with other types of drives as shown on pages 15 and 17.

Regular Equipment included in price consists of: plain apron; set of change gears; graduated compound rest; face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; installation plan; and book "How to Run a Lathe". Bench is not included in price of lathe.

Model C 9-Inch Twelve-Speed Bench Lathes
With Horizontal Motor Drive—Less Electrical Equipment and Bench

<table>
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<tr>
<th>Bed Length</th>
<th>3-ft.</th>
<th>3½-ft.*</th>
<th>4-ft.*</th>
<th>4½-ft.*</th>
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<tbody>
<tr>
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<td>615-ZC</td>
<td>615-AC</td>
<td>615-CB</td>
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<td>22-in.</td>
<td>28-in.</td>
<td>34-in.</td>
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<tr>
<td>Shipping Weight, Packed</td>
<td>396 lbs.</td>
<td>565 lbs.</td>
<td>595 lbs.</td>
<td>610 lbs.</td>
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<td>Code Word</td>
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<td>Lyser</td>
<td>Lyseb</td>
<td>Lyseg</td>
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*NOTE—The 3½ and 4-bed lengths, because of the greater distance between centers, are recommended for general machine work.

SPECIFICATIONS

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<th>Specification</th>
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<tr>
<td>Belt, width of cone pulley step for</td>
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<td>Centers, Morse taper</td>
<td>No. 2</td>
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<td>Collet capacity, maximum</td>
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<tr>
<td>Compound rest top, angular hand feed</td>
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<td>Cross slide travel</td>
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<td>Feed, cross</td>
<td>Hand operated</td>
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<td>Feeds, longitudinal (14)</td>
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<tr>
<td>Headstock spindle front bearing, diameter</td>
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<td>Headstock spindle hole</td>
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<td>Headstock spindle nose threads</td>
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<td>Lead screw, 29&quot; Acme Thread</td>
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<td>Motor, size required (see page 30)</td>
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<td>Spindle speeds, approx., high speed range</td>
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<td>r.p.m., back-gears engaged</td>
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<td>Swing over saddle with chip guard</td>
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<td>Tailstock spindle graduations, each</td>
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<td>Tailstock top set over for taper turning</td>
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<tr>
<td>Thread cutting range—45 pitches</td>
<td>4 to 160 per inch</td>
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<tr>
<td>R.H. or L.H.</td>
<td>Tool holder cutter bit</td>
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<tr>
<td>Tool holder shank</td>
<td>¾&quot; x 1½&quot;</td>
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SOUTHBEND LATHE WORKS

SOUTHBEND, INDIANA, U.S.A.
Six-Speed 9-inch Horizontal Motor Driven Precision Bench Lathe

Back-Geared—Belt Drive to Spindle—Made in Model A, Model B, and Model C

The 9-inch Model C Six-Speed Horizontal Motor Driven Bench Lathe is illustrated at the left. The Model A and Model B Lathes are also made with this drive. Except for the drive equipment, these lathes are the same as those described on pages 9, 11, and 13.

The Six-Speed Drive provides a series of six spindle speeds ranging from 41 to 658 r.p.m. This drive is recommended when high spindle speeds are not required. The drive unit is made in two sizes, to accommodate either a 1/2 h.p. motor or a 1/2 h.p. motor.

Drive Equipment included in the price of the lathe consists of: horizontal motor drive unit; motor pulley with 1/8" or 3/4" hole; V-belt; flat leather belt and lacing. Motor and control are not included in price of lathe, but are extra. See page 30.

Regular Equipment is the same as for corresponding models listed on pages 9, 11, and 13. Bench is not included.

*SIX-SPEED 9-INCH BENCH LATHE

With Horizontal Motor Drive—Less Electrical Equipment and Bench

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<th>Type of Lathe</th>
<th>Catalog Number</th>
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<th>Between Centers Inches</th>
<th>Chip, Wt. Crated Pounds</th>
<th>Code Word</th>
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With Drive Unit for 1/2 H.P. Motor

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<th>Catalog Number</th>
<th>Belt Length Feet</th>
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NOTE—The 3/4" and 4" belt lengths, because of the greater distance between centers, are recommended for general machine work.

SPECIFICATIONS

Belt, width of cone pulley step for .................. 1"  
Centers, Morse taper ................................. No. 2  
Collet capacity, maximum ......................... 1/4"  
Compound rest, angular hand feed ................ 21/4"  
Cross slide travel .................................. 8 3/4"  
Face plate diameter, small ......................... 5 3/8"  
Matrix. ................................................... 0.0044" to 0.0052"  
Clamps, cross ......................................... 0.0011" to 0.00046"  
Clamps, hand operated .............................. 0.0018" to 0.0013"  
Feeds, longitudinal ................................. 0.00211" to 0.00158"  
Headstock spindle front bearing, diameter ...... 1 1/8"  
Headstock spindle hole ................................ 3/4"  
Headstock spindle nose threads .................... 1 1/8" B  
Lathe thread, 30° Acme Thread .................... 3/8" B  
Motor, size required (see page 30) ............... 1/2 or 1/3 h.p.  
Motor, size required (see page 30) ............... 1/2 or 1/3 h.p.  
Motor, size required (see page 30) ............... 1/2 or 1/3 h.p.  
Spindle, speed required (see page 30) .......... 688, 370, 212  
Swing over saddle cross slide .................... 5 1/4"  
Swing over saddle cross slide .................... 5 1/4"  
Swing over saddle cross slide .................... 5 1/4"  
Tailstock spindle gradations, each ............... 1/8"  
Tailstock spindle travel ............................ 2 1/4"  
Tailstock top and rear for taper turning ......... 11/4"  
Thread cutting range—Model A—48 pitches .......... 4 to 234 per inch  
Thread cutting range—Model B and Model C—48 pitches—R.H. or L.H. .......... 4 to 160 per inch  
Tool holder cutter bit ................................ 1/4"  
Tool holder shank .................................... 1/8" x 1/32"
V-Belt 9-inch Horizontal Motor Driven Precision Bench Lathe

Eight or Sixteen Spindle Speeds—Back-Geared—Made in Model A, Model B, and Model C

The 9-inch Model A V-Belt Horizontal Motor Driven Bench Lathe is illustrated at the left. The Model B and Model C Lathes are also made with this drive. Except for the drive equipment, these lathes are the same as those described on pages 9, 11, and 13 respectively.

The V-Belt Drive provides a series of eight or sixteen spindle speeds as listed in the specifications below. This drive is recommended to those who prefer a V-belt drive to the smoother operating and more easily replaced flat belt drive. The headstock and countershaft of this lathe must be disassembled to replace the cone pulley V-belt.

Drive Equipment included in the price of the lathe consists of: horizontal motor drive unit; motor pulley with 1/2 or 3/4 hole; and V-belts. The eight-speed drive unit is made in two sizes, to accommodate either a 1/2 h.p. motor or a 1/3 h.p. motor. Motor and control are not included in price of lathe, but are extra. See page 30.

Regular regular is the same as for corresponding models listed on pages 9, 11, and 13. Bench is not included.

NOTE—The 31/2 and 4' bed lengths because of the greater distance between centers, are recommended for general machine work.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Type of Lathe</th>
<th>With Drive Unit for 3/4 h.p. Motor</th>
<th>With Drive Unit for 1/2 h.p. Motor</th>
<th>Bed Length</th>
<th>Distance Between Centers</th>
<th>Ship Wt.</th>
<th>Crafted Fords</th>
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SOUTHERN BEND LATHE WORKS

SOUTH BEND 22, INDIANA, U.S.A.

www.OzarkToolManuals.com
The 9-inch Toolroom Lathe with underneath motor drive is illustrated at the left. This lathe is the same as the Model A Lathe shown on page 21, except for the toolroom attachments. A built-in chip pan forms the top of the welded steel column base on which the lathe is mounted.

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

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

The Automatic Apron has a smooth operating worm drive and friction clutch which permits engaging or disengaging the power cross-feed or the power longitudinal feed instantly. See illustration on page 5.

The Motor Drive Unit, enclosed in the cabinet underneath the lathe headstock, provides a wide range of twelve spindle speeds. The cone pulley belt tension may be released and the hinged cone pulley cover on the headstock may be raised for shifting the cone pulley belt. Any desired belt tension can be obtained by adjusting a turnbuckle located inside the cabinet.

Toolroom Attachments included in the price of lathe consist of: handwheel type draw-in collet chuck attachment (without collets); collet rack; taper attachment; thread dial indicator; thread cutting stop; large face plate; and micrometer carriage stop.

Regular Equipment and drive equipment included in price of lathe consist of: metal column base with chip pan; underneath bolt motor drive unit; motor pulley with 3/4" hole; V-belt; flat leather belt and lacing; automatic apron; graduated compound rest; small face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe". Motor and control are not included in price. See page 30.

Catalog Number B344-ZN 9" x 3 1/2" Toolroom Underneath Motor Driven Lathe complete with Toolroom Attachments and Regular Equipment. Distance between centers 22 inches. Approximate shipping weight 630 pounds. Code word 'P460'.

## SPECIFICATIONS

| Belt, width of cone pulley step for | 1" |
| Centers, Morse taper | No. 2 |
| Collet capacity, maximum | 1/2" |
| Compound rest top, angular hand feed | 21/4" |
| Cross slide travel | 51/8" |
| Face plate diameter, large | 73/8" |
| Face plate diameter, small | 31/8" |
| Feeds, cross (48): | .0004" to .0252" |
| Feeds, longitudinal (48): | .0015" to .0853" |
| Headstock spindle front bearing, diameter | 1 1/8" |
| Headstock spindle hole | 3/4" |
| Headstock spindle nose threads | 1 1/2-8 |
| Lead screw, 29° Acme Thread | 3/4-8 |
| Motor, size required (see page 30) | 1/2 H.P. |
| Spindle speeds, approx., high speed range: r.p.m., direct belt driven | 1270, 716, 408 |
| r.p.m., back-gears engaged | 246, 138, 79 |
| Spindle speeds, approx., low speed range: r.p.m., direct belt driven | 658, 370, 212 |
| r.p.m., back-gears engaged | 127, 72, 41 |
| Swing over head and saddle wings | 9 1/8" |
| Swing over saddle cross slide | 3" |
| Tailstock spindle graduations, each | 1/16" |
| Tailstock spindle travel | 21/8" |
| Tailstock top set over for taper turning | 5/8" |
| Thread cutting range—48 pitches | 4 to 224 per inch |
| R.H. or L.H. | 4 to 224 per inch |
| Tool holder cutter bit | 1/16" sq. |
| Tool holder shank | 3/8" x 1 1/8" |
9-inch Underneath Motor Driven Precision Lathe

The 9-inch Model A Lathe with underneath motor drive is illustrated at the left. The 9-inch Model B and C Lathe are also made with this drive. These lathes are the same as those shown on pages 9, 11, and 13, respectively, except for the underneath motor drive and the necessary alterations in the headstock. A built-in chip pan forms the top of the welded steel column base on which the lathe is mounted.

Capable of machining work to the exacting tolerances demanded in modern industry, this lathe is recommended for the production of small, accurate parts in the manufacturing plant, for precision work in the toolroom, for general use in the machine shop, laboratory, and shops of all kinds engaged in the machining of steel, cast iron, bronze, tool steel, fibre, plastics, and similar materials.

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

The Motor Drive Unit, enclosed in the cabinet underneath the lathe headstock, provides a wide range of twelve spindle speeds. The cone pulley belt tension may be released and the hinged cone pulley cover on the headstock may be raised for shifting the cone pulley belt. Any desired belt tension can be obtained by adjusting a turnbuckle located inside the cabinet.

Regular Equipment and drive equipment included in price of lathe consists of: metal column base with chip pan; underneath belt motor drive unit; motor pulley with 3/4" hole; V-belt; flat leather belt and lacing; automatic apron; graduated compound rest; face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; quick change gear box; installation plan; and book "How to Run a Lathe". Motor and control are not included in price. See page 30.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Model</th>
<th>Length Bed Feet</th>
<th>Distance Between Centers</th>
<th>Approx Ship Wt. Crated Pounds</th>
<th>Code Word for Lathe</th>
</tr>
</thead>
<tbody>
<tr>
<td>344-ZN</td>
<td>A</td>
<td>3 1/2</td>
<td>22-in.</td>
<td>570</td>
<td>Tryer</td>
</tr>
<tr>
<td>377-ZN</td>
<td>B</td>
<td>3 1/2</td>
<td>22-in.</td>
<td>560</td>
<td>Tryer</td>
</tr>
<tr>
<td>315-ZN</td>
<td>C</td>
<td>3 1/2</td>
<td>22-in.</td>
<td>550</td>
<td>Tryer</td>
</tr>
</tbody>
</table>

SPECIFICATIONS

| Belt, width of cone pulley step for .......... 1" |
| Centers, Morse taper .......................... No. 2 |
| Collet capacity, maximum ....................... 1/4" |
| Compound rest top, angular hand feed .......... 2/4" |
| Cross slide travel ................................ 5/8" |
| Face plate diameter, small ...................... 5/8" |
| Model A .0004" to .0025" |
| Model B .001" to .0046" |
| Model C Hand operated .......................... |
| Model A .0015" to .0853" |
| Feeds, cross ..................................... |
| Model B .0021" to .0155" |
| Model C .0021" to .0156" |
| Swing over saddle cross slide .................. 5 1/2" |
| Headstock spindle front bearing, diameter .......... 1 1/8" |
| Headstock spindle hole .......................... 3/4" |
| Headstock spindle nose threads .................. 1 1/2" |
| Lead screw, 29° Acme Thread ..................... 3/8" |
| Motor size required (see page 30) ................ 1/2 h.p. |
| Spindle speeds, approx., high speed range .......... r.p.m., direct belt driven 1270, 716, 408 |
| r.p.m., back-gears engaged ...................... 246, 138, 79 |
| Swing over bed and saddle wings ................ 9 1/4" |

SWINGOVER SADDLE CROSS SLIDE 5 1/2"
HEADSTOCK SPINDLE FRONT BEARING DIAMETER 1 1/8"
HEADSTOCK SPINDLE HOLE 3/4"
HEADSTOCK SPINDLE NOSE THREADS 1 1/2"
LEAD SCREW, 29° ACME THREAD 3/8"
MOTOR SIZE REQUIRED (SEE PAGE 30) 1/2 H.P.
SPINDLE SPEEDS, APPROX., HIGH SPEED RANGE R.P.M., DIRECT BELT DRIVEN 1270, 716, 408
R.P.M., BACK-GEAR ENGAGED 246, 716, 479
SWING OVER BED AND SADDLE WINGS 9 1/4"

South Bend Lathe Works

SOUTH BEND 22, INDIANA, U.S.A.
Series 900 Precision Turret Lathe

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

The Series 900 South Bend Turret Lathe is practical for manufacturing small precision parts. It meets the demand for fast, efficient, production, yet it is easily adaptable to many classes of work. It has the stamina for exacting, close-tolerance operations, ample power for smooth performance, and the rigidity for producing a fine finish. Designed for the efficient production of duplicate parts, this lathe is especially suitable for second operation work.

The Handle-Bed Turret has automatic indexing and individual stops for each of the six turret faces. Turret head may be back-indexed or spun to skip tool positions. See page 29.

The Handle-Cross Slide has front and rear tool blocks for turning, forming, facing, and cutting-off operations. Adjustable stops limit the movement of the cross-feed in either direction, in or out. The turret handle can be removed and the cross-feed screw attached, permitting use of all power carriage feeds with the double tool cross slide. See page 29.

The Compound Rest Cross Slide, supplied in addition to the handle-cross slide, has power cross-feed and power longitudinal feed. Compound rest swivel is graduated 180° and may be set at any angle for machining bevels and short tapers. See pages 3 and 5.

The Underneath Motor Drive and the back-geared headstock provide a wide range of spindle speeds. Direct belt drive to the spindle for high speeds assures smooth operation on small diameter work. Slow speeds for heavy cuts on large diameter work are driven through the back gears.

Catalog Number 930-Z Underneath Motor Driven Quick Change Gear Turret Lathe with 3½ ft. base, welded steel column base, built-in oil pan, coolant return assembly, underneath motor drive unit, power feed universal carriage, handle cross turret, handle cross slide, and compound rest cross slide. Approximate shipping weight crated, 720 lbs. Code word "Syvut".

NOTE: Tailstock, centers, spindle sleeve, face plates, drawer, collect chuck, lathe chuck, splash pan, thread cutting stop, coolant equipment, and electrical equipment are not included in the price of the lathe. See pages 24 to 35.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed, width</td>
<td>51½&quot;</td>
</tr>
<tr>
<td>Collet capacity, maximum</td>
<td>1½&quot;</td>
</tr>
<tr>
<td>Compound rest, angular hand feed</td>
<td>2¼&quot;</td>
</tr>
<tr>
<td>Cross slide travel, compound rest type</td>
<td>57&quot;</td>
</tr>
<tr>
<td>Cross slide travel, handle type</td>
<td>3½&quot;</td>
</tr>
<tr>
<td>Cutter bit, maximum size tool block</td>
<td>7½&quot; x 7½&quot;</td>
</tr>
<tr>
<td>Feeds, power cross</td>
<td>Model A .0004&quot; to .0252&quot;</td>
</tr>
<tr>
<td>Feeds, power longa</td>
<td>Model A .0015&quot; to .0853&quot;</td>
</tr>
<tr>
<td>Motor, size required (see page 30)</td>
<td>½ h.p.</td>
</tr>
<tr>
<td>Spindle hole</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>Spindle nose threads</td>
<td>1½&quot; x 8&quot;</td>
</tr>
<tr>
<td>Spindle speeds, approx., high speed range:</td>
<td>r.p.m., direct belt driven 1270, 716, 408</td>
</tr>
<tr>
<td>Spindle speeds, approx., low speed range:</td>
<td>r.p.m., back-gears engaged 246, 138, 79</td>
</tr>
<tr>
<td>Swing over bed and saddle wings</td>
<td>9½&quot;</td>
</tr>
<tr>
<td>Swing over compound slide</td>
<td>5½&quot;</td>
</tr>
<tr>
<td>Swing over handle cross slide</td>
<td>3½&quot;</td>
</tr>
<tr>
<td>Thread cutting range</td>
<td>Model A 4 to 224 per inch</td>
</tr>
<tr>
<td>Tool holder cutter bit for compound rest</td>
<td>1¼&quot; x 4&quot;</td>
</tr>
<tr>
<td>Tool holder shank for compound rest</td>
<td>¾&quot; x 15&quot;</td>
</tr>
<tr>
<td>Turret face to spindle nose, maximum distance at beginning of indexing movement</td>
<td>105°</td>
</tr>
<tr>
<td>Turret head, distance between opposite faces</td>
<td>4½&quot;</td>
</tr>
<tr>
<td>Turret hole, diameter</td>
<td>5½&quot;</td>
</tr>
<tr>
<td>Turret hole to top of turret slide</td>
<td>1½&quot;</td>
</tr>
<tr>
<td>Turret slide feed</td>
<td>4&quot;</td>
</tr>
<tr>
<td>Universal carriage maximum longitudinal</td>
<td>18&quot;</td>
</tr>
<tr>
<td>travel, hand or power feed</td>
<td></td>
</tr>
</tbody>
</table>

*SOUTH BEND LATHE WORKS 23 9" SOUTH BEND PRECISION LATHES SOUTH BEND 22, INDIANA, U.S.A.*
Handwheel Collet Attachment

The draw-in collet chuck is the most accurate of all types of chucks and is used for precision work, such as making small tools and manufacturing small parts for watches, typewriters, radios, etc. Bar and tube stock may be passed through the hollow draw-bar which operates the collet.

The price of the Handwheel Draw-in Collet Attachment includes handwheel and hollow draw-bar, spindle nose cap, spanner wrench for nose cap, and tapered steel closing sleeve. Collets are not included in price of draw-in collet attachment, but are extra as listed on page 25.

4306-W. Code "Acrot". Ship. wt. 4 lbs.....

The Handlever Type Draw-in Collet Attachment permits releasing and feeding bar stock through the collet without stopping the lathe. The rapid production and accuracy of this attachment makes it an economical tool for manufacturing small parts to close tolerances.

The price of the Handlever Draw-in Collet Attachment includes adjustable chuck closing mechanism and hollow draw-bar, spindle nose cap, spanner wrench for nose cap, and tapered steel closing sleeve. Collets are not included in price but are extra, as listed on page 25.

This attachment should be ordered with the lathe and fitted at the factory.

5206-W. Code "Abpat". Ship. wt. 10 lbs.....

SOUTH BEND LATHE WORKS

9" SOUTH BEND
Precision LATHES
Collets and Collet Sets

Standard Extras

Collets for use with either handwheel or handlever collet attachments can be supplied individually or in sets as listed in the tabulation below. A complete set of collets is especially helpful for toolroom and maintenance work. Often the time saved in getting out a single rush job without having to wait for a collet to come from the factory will more than compensate for the cost of a full set of collets.

These collets are made of steel, properly heat-treated for long service, and are precision ground. Each collet is carefully inspected and tested before it is packed for shipment.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Shipping Weight</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>605-W</td>
<td>I collet, any size, 1/16” to 3/8” in sixty-fourths</td>
<td>6 oz.</td>
<td>Extra</td>
</tr>
<tr>
<td>2047</td>
<td>Set of 10 collets, 1/16” to 1/4” inclusive</td>
<td>4 lbs</td>
<td>Hapko</td>
</tr>
<tr>
<td>2048</td>
<td>Set of 15 collets, 1/16” to 1/3” inclusive</td>
<td>8 lbs</td>
<td>Hapko</td>
</tr>
<tr>
<td>2049</td>
<td>Set of 20 collets, 1/16” to 1/5” inclusive</td>
<td>12 lbs</td>
<td>Hapko</td>
</tr>
<tr>
<td>765-W</td>
<td>Decimal collets (0.025” to 0.050”) each</td>
<td>6 oz.</td>
<td>Dynac</td>
</tr>
<tr>
<td>775-W</td>
<td>Metric collets (0.55 mm to 12.5 mm in increments of 0.5 mm) each</td>
<td>6 oz.</td>
<td>Dynac</td>
</tr>
</tbody>
</table>

Taper Attachment

Standard Extra

Taper turning and boring are as easily accomplished as straight turning on lathes equipped with the South Bend Taper Attachment. The cross-feed screw nut is disconnected when the taper attachment is engaged for taper turning and boring. Can be set for cutting any taper up to 3½” per foot and up to 7” in length at one setting. Swing over lathe cross slide with taper attachment is 5”. Must be fitted to lathe at factory. Cannot be used with handlever cross slide.


Collet Rack

Standard Extra

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

1770-W. Code “Rahah”. Shipping wt. 9 lbs.
**Electric Grinding Attachment**

*Standard Extra*

This powerful and efficient Grinding Attachment is recommended for external grinding. The grinding spindle revolves on pre-lubricated, precision ball bearings which are sealed to protect them from damage by dust and grit from the grinding wheel.

Price includes: 1/4 h.p. 1725 r.p.m. motor, ball-bearing grinding spindle, V-belt, belt guard, one 4" x 1/2" toolroom grinding wheel (grain A46-NSBE), and mounting clamp. 3-phase motor is supplied with extension cord but not switch or plug. 1-phase and D.C. motors are supplied with extension cord, switch, and plug. When ordering grinder specify exact voltage, phase, and cycle. Shipping weight 55 lbs.

**30-WT.** Grinding Attachment with 3-phase, 50/60 cycle A.C. 230 or 440 V. motor. Code word “Roton”

**30-W.** Grinding Attachment with 1-phase, 60 cycle A.C. 115 V. motor. Code “Sunar”


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**High Speed Grinder**

*For Internal and External Grinding*

*Purchased Extra*

This is a small grinding attachment for either internal grinding or light external grinding. Internal capacity down to 1/8" in diameter, and depth to 2 1/4". The grinder clamps on the compound rest of the lathe in place of tool post, as shown.

A double pulley drive provides two spindle speeds, one for internal grinding, and the other for external grinding. The spindle is mounted on high speed precision ball bearings and operates smoothly at the maximum speed, which is 12,000 r.p.m.

Equipment consists of: 1/14 h.p. high speed universal motor, designed for operation on either alternating or direct current; switch; extension cord; wrenches; precision ball-bearing grinding spindle; two belts; one wheel for external grinding (2" x 1/4"); balanced chuck for mounting internal grinding wheels; and three mounted wheels for internal grinding (1/4" x 1/4", 1/2" x 1/4", and 3/4" x 1/4"). Shipping weight 10 lbs.

**1204.** Grinder for 115-volt A.C. or D.C. Code “Gibos”

**1207.** Grinder for 230-volt A.C. or D.C. Code “Gesep”

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*SOUTH BEND LATHE WORKS*

**9" SOUTH BEND**

**Precision LATHES**

*SOUTH BEND 22, INDIANA, U.S.A.*
Milling and Keyway Cutting Attachment

Standard Extra

The milling and keyway cutting attachment is mounted on the compound rest base of the lathe, permitting either hand feeds or power feeds to be employed for milling and boring operations on work held in the milling attachment vise.

The angle plate to which the vertical slide is attached is graduated 180° in both the horizontal and vertical planes, permitting the vise to be swiveled in any direction. The vertical adjusting screw has a micrometer graduated collar. Vertical feed is 21/2", cross-feed 5/6". Opening in vise jaw is 11/2" high, 13/4" deep, and 3" wide. Equipment includes two V-blocks for holding round work, crank for feed screw, and wrench. Milling cutters and arbors are not included.

9-W. Code "Vabil". Shipping weight 13 lbs.

Arbor for Milling Cutter—Standard Extra

For holding cutters with standard 1-inch hole. Taper shank fits into headstock spindle of lathe. Capacity between nut and shoulder is 11/2". Three spacing collars furnished.


Center Rest—Standard Extra

The center rest clamps onto the inside ways of the lathe bed and is used for supporting long shafts, boring spindles, etc. The three jaws are adjustable to accommodate various sizes of work, and the top of the center rest is hinged to facilitate inserting and removing shafts or other work.

The jaws are made of cast iron, and if properly lubricated will wear very little. The jaws are machined all over and have adjusting screws and lock screws for setting them in the desired position.

125-W. Code "Cegko". Shipping weight 10 lbs.

Follower Rest—Standard Extra

The follower rest is attached to the lathe carriage and travels with it. The follower rest is used to support long, slender shafts while being machined between the lathe centers. Jaws are adjustable for shafts 1/4" to 2" diameter.

Slots in bottom of follower rest permit attaching or removing quickly as it is not necessary to remove the screws from the saddle.

34-W. Code "Cegmo". Shipping weight 4 lbs.
Attachments and Accessories

Standard Extras

A LARGE FACE PLATE—Threaded to fit the spindle nose of lathe. Has slots for clamping work or special face plate fixtures. Heavily constructed and ribbed on the back. Outside diameter 7 3/8". 40-W. Code "Cehak". Shipping weight 6 lbs.

B CHUCK PLATE—When ordering specify serial number of lathe and diameter of recess in back of chuck. Not required for lathe chucks listed in this catalog. 125-W. Chuck plate threaded to fit spindle nose of lathe, but not fitted to back of chuck. Code "Somak". Ship. wt. 5 lbs.

2935. Chuck plate threaded to fit spindle nose of lathe and fitted to back of chuck. Code "Syuh".

C PLAIN CARRIAGE STOP—A practical stop for facing, turning, boring, etc. Can be used on either side of the carriage. 759-W. Code "Tahro". Shipping weight 1 1/4 lbs.

D THREAD CUTTING STOP—Used for regulating the depth of each chip when cutting screw threads. 67-W. Code "Cegpy". Shipping weight 1/2 lb.

E THREAD DIAL INDICATOR—When cutting screw threads this attachment permits returning carriage by hand to the starting point for each successive cut. A graduated dial shows when to engage the half-nuts with the lead screw. 810-W. Code "Adok". Ship. wt. 2 lbs.

F MICROMETER CARRIAGE STOP—A precision stop with micrometer adjustment for accurate facing, turning, boring, etc. Does not stop carriage automatically. Has hardened stop which may be locked for doing duplicate work. 956-W. Code "Capers". Ship. wt. 2 lbs.

G DRILL PAD—Used in tail spindle to support flat work for drilling. 727-W. Code "Donav". Ship. wt. 1 1/4 lbs.

H CROTCH CENTER—Used in tail spindle to center round work for cross drilling. 728-W. Code "Fanid". Ship. wt. 10 ozs.

I 60° CENTER—For use in headstock or tailstock of lathe. Made of tool steel, hardened and ground all over. 726-W. Code "Cenre". Ship. wt. 1/2 lb.

HOLLOW CENTER—Has 60° conical hollow center for supporting centerless shafts up to 7/8" in diameter. Made of tool steel, hardened and ground. 1886-W. Code "Cvdek". Ship. wt. 1/2 lb.

K HAND REST—For wood turning. Consists of a base and two T rests, 4" and 12" long respectively. Made of cast iron. Fits on compound rest base of lathe. 896-W. Code "Adows". Ship. wt. 6 lbs.


Attachments for Manufacturing

**HANDLEVER BED TURRET**—Mounts on the inside bed ways in place of the tailstock. The turret head indexes automatically each time the lever is moved to the extreme right. Each face of the turret head has an independently adjustable feed stop screw which accurately regulates the length of the cut.

Effective feed of turret slide 4 1/2. Center of turret head to top of turret slide 1 1/2. Takes standard turret tools with 5/8" diameter shank. Can be supplied to order with 3/4" holes, no extra charge. When turret is ordered separate from lathe, the purchaser must assume the responsibility of fitting and boring.

**DOUBLE TOOL CROSS SLIDE**—Mounted on the saddle cross slide dovetail in place of the compound rest assembly. Adjustable stops limit the movement of the cross slide in either direction, in or out. The cross slide has front and back square tool blocks in which 3/8" square cutter bits can be mounted. Tapered wedges and thumb screws provide precision adjustment for the height of the cutter bits.

Handlever double tool cross slides made after July, 1945 are arranged so that the handlever may be removed and screw feed used instead. This permits the use of the square turret listed below.

**2030-W.** Code "Syvri". Ship. wt. 36 lbs.

**40-ND SQUARE TURRET**—For use on double tool cross slide with screw feed. Cannot be used on double tool slide with handlever feed, or with compound rest.

Four 3/8" square cutting tools can be mounted in the turret tool block which is 3" square. The turret head indexes accurately, permitting each tool to be used in sequence for rough turning, finish turning, facing, boring, cutting off, or other operations as required.

A quick acting cam operated binder locks the turret securely in each of the four positions. Rocker adjustment is provided for adjusting the height of the cutting edge of each tool.

**40-ND.** Code "Cyvri". Ship. wt. 10 lbs.

**40-NC SQUARE TURRET**—For use on the base of the compound rest cross slide. Cannot be used on the double tool cross slide.

Four cutting tools 3/8" square can be mounted in the turret tool block which is 3" square. The turret head indexes accurately, permitting each tool to be used in sequence for rough turning, finish turning, facing, boring, cutting off, or other operations as required. A quick acting cam operated binder locks the turret securely in each of the four positions. Rocker adjustment is provided for adjusting the height of the cutting edge of each tool.

**40-NC.** Code "Cwyri". Ship. wt. 6 lbs.

**HANDLEVER TAILSTOCK**—A practical attachment for quantity drilling, reaming, tapping, counterboring, and centering operations. Length of feed 2 3/4. The convenient lever operation of the spindle saves much time on production work. The spindle may be set for drilling to any depth up to maximum length of feed.

This tailstock is similar to the regular tailstock, except for the spindle construction. The tailstock top may be set over for taper turning. The spindle may be operated by either the handlever or by turning the tailstock handwheel, and can be locked in position for turning operations.

**519-W.** Handlever Tailstock, when ordered with lathe, in lieu of regular tailstock. Code word "Tibet".

**1197-W.** Handlever Tailstock, in addition to regular tailstock. Code "Mund". Ship. wt. 23 lbs.
How to Run a Lathe

This is a complete reference book and manual on the care and operation of the back-greased screw-cutting lathe. Clearly written in simple non-technical language, illustrated with more than 360 photographs, diagrams, and sketches. Printed in the English, Spanish, Portuguese, and French languages. State language wanted if other than English.

Revised edition No. 45, "How to Run a Lathe", in the English language, 128 pages $5^1/8" \times 7^{7/8}"$, price postpaid 25¢ in paper binding, $1.00 in leatherette binding. U.S. stamps accepted for single copies.

SOUTH BEND LATHE WORKS
Chucks and Tools

INDEPENDENT LATHE CHUCKS — Purchased Extras
These chucks have four independent solid jaws with individual screw adjustment. The jaws may be reversed for chucking work either inside or outside. Chuck body is ground and chuck jaws are hardened and ground. Prices include: chuck, wrench, and threaded chuck plate fitted to lathe spindle and back of chuck.


UNIVERSAL LATHE CHUCKS — Purchased Extras
Two sets of jaws are furnished with each Universal Chuck, one set for chucking internally and the other for chucking externally. Chuck body is ground and jaws are hardened. Chuck jaws are moved simultaneously by a screw, and work is automatically centered. Prices include: chuck with two sets of jaws, wrench, and threaded chuck plate fitted to lathe spindle.


3-JAW DRILL CHUCKS — Purchased Extras — Prices and weights include pinion key, but not shank.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Ship. Wt. Lbs.</th>
<th>Almound Chucks</th>
<th>Jacobs Chucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 3/8</td>
<td>1/2</td>
<td>219 Agena</td>
<td>1200 Cleve</td>
</tr>
<tr>
<td>0 to 3/4</td>
<td>2/3</td>
<td>220 Acme</td>
<td>1201 Wankra</td>
</tr>
<tr>
<td>3/4 to 1</td>
<td>9/16</td>
<td>327 Bold</td>
<td>1202 Fabia</td>
</tr>
</tbody>
</table>

TAPERED SHANK FOR DRILL CHUCKS — Purchased Extra — Required for fitting each drill chuck to the lathe spindle. When not ordered with chuck, specify size of drill chuck to be used. No. 2 Morse taper.

709-W. Code "Asahak". Shipping weight 1½ lbs.

JACOBS HOLLOW THREADED CHUCKS — Purchased Extras — Chuck screws onto spindle nose of lathe. Has hollow body for holding rod and bar work.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>977-W</td>
<td>1/4 to 1</td>
<td>3/16</td>
<td>3/16</td>
<td>4709</td>
</tr>
<tr>
<td>925-W</td>
<td>1/4 to 1</td>
<td>3/16</td>
<td>3/16</td>
<td>4709</td>
</tr>
</tbody>
</table>

TURNING TOOL HOLDERS — Purchased Extras — Made of drop-forged steel, heat-treated. Shank is 9/16" x 5/8" and takes 1/4" square high-speed steel cutter bit. Price includes wrench and one unground cutter bit. Ship. weight each 1 lb.

827-S. Straight Tool Holder. Code "Accutec".

847-B. Right-Hand Tool Holder. Code "Accutec".

497-B. Left-Hand Tool Holder. Code "Accutec".

CUTTING-OFF TOOL HOLDERS — Purchased Extras — Made of drop-forged steel, heat-treated. Shank is 9/16" x 5/8" and takes 1/4" square high-speed steel cutter bit. Ship. weight each 1 lb.

833-S. Straight Cutting-off Tool. Code "Accutec".

822-B. Right-hand Cutting-off Tool. Code "Accutec".


KNURLING TOOL HOLDER — Purchased Extra — Made of drop-forged steel, heat-treated. Shank is 9/16" x 5/8". Price includes wrench and formed high-speed steel single point cutter (V, U.S.S., or Whitworth). Specify style and thread per inch to be cut.

810. Code "Domia". Shipping weight 1½ lbs.

817. Extra knurl, straight or diamond, fine, medium, or coarse. Code "Topeco". Fair, shipping weight 1½ lbs.

THREADING TOOL HOLDER — Purchased Extra — Made of drop-forged steel, heat-treated. Shank is 9/16" x 5/8".


BORING TOOL HOLDER STYLE "B" — Purchased Extra — Made of drop-forged steel, heat-treated. Shank is 9/16" x 5/8", with 1/8" x 24" square taper. Cutter bit may be straight or at a 45° angle. Price includes two wrenches and two 9/32" square cutter bits.

423. Code "Haynes". Shipping weight 1½ lbs.

BORING TOOL HOLDER STYLE "D" — Purchased Extra — Same as Style "B", but with 1/8" x 24" solid bar only. Will take bars 1/8" to 1/2" in diameter.

505-F. Code "Aydon". Shipping weight 1½ lbs.

SLEEVE BORING BAR — Purchased Extra — Same as supplied with Style "B" boring tool holder. Steel 1/8" x 7/8".

505-B. Code "Aydon". Shipping weight 2 lbs.

HEAVY DUTY BORING AND TURNING TOOL — Standard Extras — A very rigid combination tool for heavy boring, turning, and facing operations. Molder tolerates 1/4" x 1/2" in diameter. Price includes: 1/4" x 14" boring bar, 1/4" square cutter bit, and wrench.

465-W. Code "Hansen". Shipping weight 3 lbs.

GROUND CUTTER BITS — Standard Extras — Made of high-speed steel, ground to shape, ready to use. Size 1/8" x 1/4" x 2" for use with turning tool holders only. Specify shapes wanted.

A, B, C, D, E, F

L.H. Round R.H. L.H. Thread Side E.H. Side


1719. Code "Cannas". Set of six, shapes A to F as shown. Shipping weight 10 ozs.

UNGROUNDED CUTTER BITS — Purchased Extras — For use in turning tool holders and boring bars. Made of good quality high-speed steel, properly heat-treated and hardened, but not ground.

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Size Bit Diameter</th>
<th>Shipping Weight</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1460</td>
<td>1/8 x 1/4 x 2</td>
<td>2 ozs.</td>
<td>Adox</td>
</tr>
<tr>
<td>1067-W</td>
<td>1/8 x 1/4 x 1</td>
<td>2 ozs.</td>
<td>Komp</td>
</tr>
<tr>
<td>464-W</td>
<td>1/8 x 1/4 x 1</td>
<td>2 ozs.</td>
<td>Hoper</td>
</tr>
<tr>
<td>1629</td>
<td>1/8 x 1/4 x 2</td>
<td>2 ozs.</td>
<td>Cixer</td>
</tr>
</tbody>
</table>

SOUTH BEND 22, INDIANA, U.S.A.
Accessories

ADJUSTABLE COLLET BUSHING CHUCK—Standard Extra—Provides an extremely accurate but inexpensive equipment for mounting centerless armature shafts, and similar parts, in the lathe. Can be used in either head or tail spindle of lathe. Collets are made of brass, and may be adjusted for either running fit or driving fit on shaft.

1615-NR. Adjustable Collet Bushing Chuck only, with No. 2 Morse taper shank. Code "Cvgeb". Shipping weight 2 lbs.


1659. Extra Collet for round work, any capacity 1/4" to 1" round by 16ths. Code "Cwlb". Shipping weight 6 1/2 ozs.

MICA UNDERCUTTING ATTACHMENT—Standard Extra—Attaches to saddle of lathe as shown in illustration below for undercutting armature commutators. Hand operated, easy to use, and efficient. Cutter blade can be aligned with commutator segments, even though they are not parallel with the armature shaft. This prevents cutting into copper and throwing up burrs. A screw adjustment is provided for regulating the depth of the cut. When not in use, the undercutter may be tilted back out of the way. Price includes one cutter blade .020" thick.


2028. Code "Cvlob". Extra cutter blade .015" thick. Shipping weight 1/2 lb.


ARMATURE SUPPORT CHUCK—Purchased Extra—Has three brass jaws in which armature shaft revolves. Takes shaft 3/4" to 3/4" diameter. Price includes arbor with No. 2 Morse taper shank.

340-NR. Code "Bavob". Shipping weight 4 lbs.

Metric Transposing Gears

Metric Transposing Gears

Standard Extras

Metric screw threads ranging from 6 mm pitch to 0.20 mm pitch can be cut (in addition to the regular English pitches) on any model of South Bend 9-inch lathe when equipped with a set of metric transposing gears.

Gear guards designed to enclose the metric gears are supplied at no extra cost when the transposing gears are ordered with the lathe. When ordered separate from the lathe a special gear guard is required.

1759-W. Metric Transposing gears for Model B or Model C 9-inch Lathe. Code "Kosei". Shipping weight 8 lbs.


Metric Lathes

All models of South Bend 9-inch Lathes can be supplied with metric lead screw and metric graduations.

The Model A and Model B Metric Lathes will cut the following screw threads: 7, 6.5, 6, 5.5, 5, 4.5, 4, 3.5, 3, 2.75, 2.5, 2.25, 2, 1.75, 1.5, 1.4, 1.3, 1.25, 1.2, 1.1, 1, 0.9, 0.8, 0.75, 0.7, 0.65, 0.6, 0.55, 0.5, 0.45, 0.4, 0.35, 0.3, 0.25, and 2 mm pitch. The Model A Lathes with metric quick change gear box cut metric threads from 7.5 mm pitch inclusive, as listed on the index chart illustrated below.

Index Chart Showing Metric Threads and Feeds on a 9-inch Model A Metric Quick Change Gear Lathe.

SOUTH BEND 22, INDIANA, U.S.A.
Surface Plate

Standard Extra

A heavy cast iron surface plate for laying out work, surfacing, checking flat surfaces, and general toolroom and shop use. Top surface is precision ground and has wooden cover. Edges are machined and under side of edge is finished all around. Size 12" x 17" x 3", with top 3/4" thick. Approximate net weight 64 lbs.

2215. Code “Sywux”. Shipping weight 75 lbs.

V-Belts

Purchased Extra

Rubber V-Belts for use with South Bend Lathes and other power driven machinery. Specify catalog number, maximum width, and outside circumference when ordering.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Maximum Width</th>
<th>Outside Circumference</th>
<th>Shipping Weight</th>
<th>Code Ward</th>
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<tbody>
<tr>
<td>4522-A</td>
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<td>Cygeb</td>
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<tr>
<td>4522-H</td>
<td>21&quot;</td>
<td>51&quot;</td>
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<td>Cygeb</td>
</tr>
<tr>
<td>4522-B</td>
<td>21&quot;</td>
<td>51&quot;</td>
<td>8 oz</td>
<td>Cygeb</td>
</tr>
<tr>
<td>4522-C</td>
<td>21&quot;</td>
<td>51&quot;</td>
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</tr>
<tr>
<td>4522-D</td>
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<tr>
<td>4522-E</td>
<td>21&quot;</td>
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</tr>
<tr>
<td>4522-H</td>
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<tr>
<td>4522-B</td>
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<td>8 oz</td>
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<tr>
<td>4522-C</td>
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<td>21&quot;</td>
<td>51&quot;</td>
<td>8 oz</td>
<td>Cygeb</td>
</tr>
</tbody>
</table>

Angle Plate

Standard Extra

Precision ground on six sides, this rigidly constructed cast iron angle plate has many uses. It serves as a square for laying out and setting up work. Size 3.1/4" x 3.1/4" x 4.1/4" with 3/8" V-groove.

2214. Code “Rapos”. Shipping weight 7 lbs.
South Bend presents this new 14" Drill Press as a companion to the South Bend Precision Lathe. It is built with the same high standards of accuracy and skilled workmanship. Years of painstaking research and experimentation have gone into its design. This has resulted in a superior tool unsurpassed for accuracy, ease of operation, versatility and dependable performance.

**FEATURES and SPECIFICATIONS**

- **BELT TENSION RELEASE**
  - Quick-acting belt tension release lever simplifies belt changing. Release tension control when not in use.

- **BUILT-IN LIGHT**
  - Provides continuous illumination on work area. Built-in switch.

- **SPINDLE**
  - Free-fitting design prevents misalignment, side thrust and bias. Travel of spindle:
    - 4¼" (Bench Model)
    - 6¼" (Floor Model)

- **BALL BEARINGS**
  - Sealed, precision type. No oiling, 3 on spindle drive and 2 on spindle.

- **QUILL BEARING**
  - Adjustment provides feather-touch tension and locking.

- **DEPTH GAUGE**
  - Graduated in inches, 1/16" divisions, with graduated feed and return.

- **CHUCK**
  - 1¼" Capacity, 0 to 16".

- **SPEEDS**
  - 20 to 400 ft./min.

- **STRUCTURED TWO MODELS**
  - Cat. No. 440B bench type.
  - Cat. No. 440F floor type.

- **CAPACITY**
  - Maximum drill size in iron or steel:
    - 1¼" Drill to center of 14" table size.

- **CHUCK TO BASE DISTANCE**
  - Bench Model: 17½" Floor Model: 24½"

- **TABLE SIZE**
  - 14" x 17½" with T-Track.
  - Geared hand wheel with positive lock. Table has all sides ribbed for clamping.

- **COLUMN**
  - Cast-iron, accurately machined.

- **HEIGHT**
  - Bench Model: 26½" Floor Model: 36½"

- **SHIPPING WEIGHT**
  - Bench Model: 68 lbs.
  - Floor Model: 132 lbs.

- **MOTOR REQUIRED**
  - 1½ HP at 2700 r.p.m. Variable speed controls. Copper type recommended. On-off switch provided.

- **ACCESSORY SHEARD**
  - Designed and built for rugged service with high-speed steel drills.
A GROUP OF 9 INCH SOUTH BEND PRECISION LATHES IN OPERATION IN A MANUFACTURING PLANT