

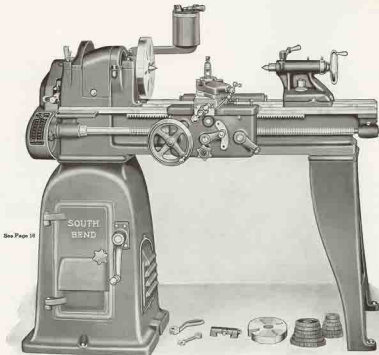


The New Model South Bend  
**11-inch Series "R"**  
**Precision LATHES**



**SOUTH BEND LATHE WORKS**

466 Niles Avenue    South Bend, Indiana, U. S. A.



See Page 14

Patented  
Fig. 1. Cat. No. 110-A. 11" x 4' Series "R" Standard Change Gear Underneath Belt Motor Drive Lathe complete as shown...\$541.00

## 11-inch Standard Change Gear Precision Lathe—Series "R"

Double Wall Apron—Hardened Headstock Spindle—Underneath Belt Motor Drive

The Series "R" 11-inch Standard Change Gear Lathe is recommended for production operations and for use in shops where few changes for threads and feeds are required. Loose change gears are furnished for cutting screw threads and for feeds. See page 14.

Improved Carriage provides a wide range of automatic power longitudinal feeds and power cross feeds. An automatic safety interlock prevents engaging half-nuts with lead screw when power feeds are in use.

New Features include underneath belt motor drive, double wall apron, hardened headstock spindle, and adjustable taper gib on dovetail bearings of compound rest and cross slide. See pages 12 to 16.

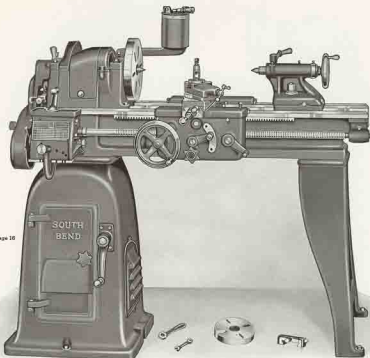
Equipment included in price of the above lathe consists of:  $\frac{1}{2}$  H.P. instant reversing motor, reversing switch, wiring, belting, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, change gears, wrenches, and "How to Run a Lathe."

### Net Factory Prices of 11-inch Series "R" Standard Change Gear Underneath Belt Motor Drive Floor Leg Lathes

Prices Include Equipment as Listed Above and on Page 15

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Flange Motor Used H.P.	Apron Weight Grated Pounds	Catalog Number	Code Word	3-Phase 60-Cycle A.C. Motor	1-Phase 60-Cycle A.C. Motor	Direct Current Motor
11 $\frac{1}{2}$ "	3 $\frac{1}{2}$	18	$\frac{1}{2}$ "	7	$\frac{1}{2}$	920	110-Z	Badol	\$529.00	\$543.00	\$337.00
11 $\frac{1}{2}$ "	4	24	$\frac{1}{2}$ "	7	$\frac{1}{2}$	950	110-A	Badti	\$41.00	\$55.00	\$49.00
11 $\frac{1}{2}$ "	5	36	$\frac{1}{2}$ "	7	$\frac{1}{2}$	1020	110-B	Baduo	\$65.00	\$79.00	\$73.00
11 $\frac{1}{2}$ "	5 $\frac{1}{2}$	42	$\frac{1}{2}$ "	7	$\frac{1}{2}$	1055	110-S	Badka	\$77.00	\$91.00	\$85.00

See Page 16



Patented  
Fig. 2. Cat. No. 111-A, 11" x 4' Series "R" Quick Change Gear Underneath Belt Motor Drive Lathe complete as shown...\$591.00

## 11-inch Quick Change Gear Precision Lathe—Series "R"

Double Wall Apron—Hardened Headstock Spindle—Underneath Belt Motor Drive

The Series "R" 11-inch Quick Change Gear Lathe is recommended for tool room and maintenance work and for shops where frequent changes for threads and feeds are required. Full quick change gear equipment is furnished for cutting screw threads and for automatic power carriage feeds. See page 14.

Improved Carriage provides a wide range of automatic power longitudinal feeds and power cross feeds. An automatic safety interlock prevents engaging half-nuts with lead screw when power feeds are in use.

New Features include underneath belt motor drive, double wall apron, multiple disc friction feed clutch, hardened headstock spindle, and adjustable taper gibs on dovetail bearings of compound rest and cross slide. See pages 12 to 16.

Equipment included in the price of this lathe consists of:  $\frac{1}{2}$  H.P. instant reversing motor, reversing switch, wiring, belting, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, gear box, wrenches, and "How to Run a Lathe."

### Net Factory Prices 11-inch Series "R" Quick Change Gear Underneath Belt Motor Drive Lathes

Prices include equipment as listed above and on Page 15

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Size Motor Used H.P.	Approx. Weight Casted Pounds	Catalog Number	Code Word	3-Phase 60-Cycle A.C. Motor	1-Phase 60-Cycle A.C. Motor	Direct Current Motor
11 $\frac{1}{2}$	3 $\frac{1}{2}$	18	$\frac{3}{8}$	7	$\frac{1}{2}$	935	111-Z	Bimel	\$579.00	\$593.00	\$587.00
11 $\frac{1}{2}$	4	24	$\frac{3}{8}$	7	$\frac{1}{2}$	965	111-A	Bimul	\$591.00	\$605.00	\$599.00
11 $\frac{1}{2}$	5	36	$\frac{3}{8}$	7	$\frac{1}{2}$	1035	111-B	Bimas	\$615.00	\$629.00	\$623.00
11 $\frac{1}{2}$	5 $\frac{1}{2}$	42	$\frac{3}{8}$	7	$\frac{1}{2}$	1070	111-S	Bimfo	\$627.00	\$641.00	\$635.00

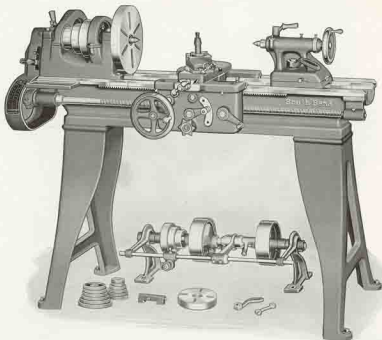


Fig. 3. Cat. No. 10-A, 11" x 4' Series "R" Standard Change Gear Countershaft Drive Lathe complete as shown.....\$383.00

## 11-inch Standard Change Gear Precision Lathe—Series "R"

### Double Wall Apron—Hardened Headstock Spindle—Countershaft Drive

The Series "R" 11-inch countershaft driven standard change gear lathe is recommended for use in shops that are equipped with a lineshaft for power. Loose change gears are furnished for cutting screw threads and for automatic power carriage feeds. For further details see page 14.

**Improved Carriage** provides a wide range of automatic power longitudinal feeds and power cross feeds. An automatic safety interlock prevents engaging half-nuts with lead screw when power feeds are in use.

**New Double Wall Apron** provides support for both ends of the gear shafts and has an improved plunger gear shift with neutral position.

**New Features** include double wall apron, multiple disc friction feed clutch, hardened headstock spindle, and adjustable taper gibs on dovetail bearings of compound rest and cross slide. See pages 12 to 15.

**Workmanship and Material** entering into the construction of Series "R" 11-inch South Bend Lathes are the finest it is possible to obtain and all parts are manufactured to the most exacting specifications.

**Equipment** included in the price of this lathe consists of: countershaft with two friction clutch pulleys, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, wrenches, change gears, and instruction book "How to Run a Lathe."

#### Net Factory Prices of 11-inch Series "R" Standard Change Gear, Back-Geared Screw Cutting Lathes

Prices include Countershaft and Equipment as Listed Above and on Page 15

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Case Pulley Size Inches	Countershaft Speed R.P.M.	Power Required H.P.	Approx. Weight Cased Pounds	Catalog Number	Code Word	Net Factory Price
11 1/4	3 1/2	18	5/8	7	1 1/4	255	1/2	680	10-Z	Apfeg	\$371.00
11 3/8	4	24	3/4	7	1 1/2	255	1/2	710	10-A	Arbix	383.00
11 1/2	5	36	3/4	7	1 1/2	255	3/4	780	10-B	ArcoB	407.00
11 5/8	5 1/2	42	3/4	7	1 1/2	255	3/4	815	10-S	Arcoe	419.00

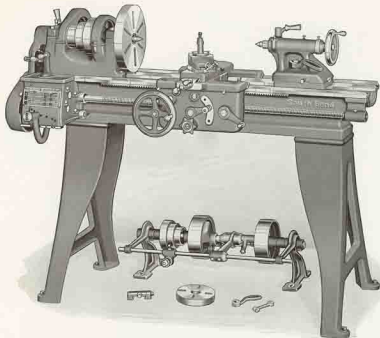


Fig. 4. Cat. No. 11-A, 11" x 6' Series "R" Quick Change Gear Countershaft Drive Lathe complete as shown ..... \$433.00

## 11-inch Quick Change Gear Precision Lathe—Series "R"

Double Wall Apron—Hardened Headstock Spindle—Countershaft Drive

The Series "R" 11-inch countershaft driven quick change gear lathe is recommended for use in shops that are equipped with a lineshaft for power. Full quick change gear equipment is furnished for cutting screw threads and for automatic power carriage feeds. For further details see page 14.

**Improved Carriage** provides a wide range of automatic power longitudinal feeds and power cross feeds. An automatic safety interlock prevents engaging half-nuts with lead screw when power feeds are in use.

**New Double Wall Apron** provides support for both ends of the gear shafts and has an improved plunger gear shift with neutral position.

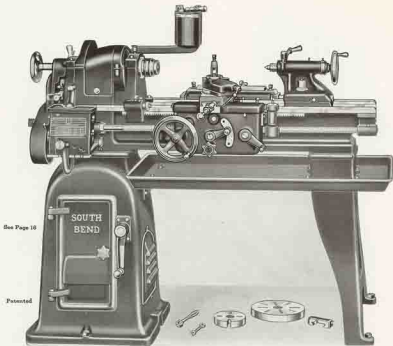
**New Features** include double wall apron, multiple disc friction feed clutch, hardened headstock spindle, and adjustable taper gibs on dovetail bearings of compound rest and cross slide. See pages 12 to 15.

**Workmanship and Material** entering into the construction of Series "R" 11-inch South Bend Lathes are the finest it is possible to obtain, and all parts are manufactured to the most exacting specifications.

**Equipment** included in the price of this lathe consists of: countershaft with two friction clutch pulleys, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, wrenches, gear box, installation plan and book "How to Run a Lathe."

**Net Factory Prices of 11-inch Series "R" Quick Change Gear, Back-Geared Screw Cutting Lathes**  
Prices Include Countershaft and Equipment as Listed Above and on Page 15

Swing Over Tool Inches	Length of Tool Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Core Pulley Belt Inches	Countershaft Speed R.P.M.	Power Required H.P.	Apron Weight Obedt Pounds	Catalog Number	Code Word	Net Factory Price
11 3/4	3 1/2	18	3/8	7	1 1/2	255	3/4	695	11-Z	Alvup	\$421.00
11 3/4	4	24	3/8	7	1 1/2	255	3/4	725	11-A	Alvho	433.00
11 3/4	5	30	3/8	7	1 1/2	255	3/4	795	11-B	Alwin	457.00
11 3/4	6 1/2	42	3/8	7	1 1/2	255	3/4	830	11-S	Alzan	469.00



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Patented

Fig. 5. Cat. No. 8111-A, 11" x 4' Series "R" Tool Room Quick Change Gear Underneath Belt Motor Drive Lathe complete as shown... \$759.00

## 11-inch Tool Room Quick Change Gear Precision Lathe—Series "R"

Double Wall Apron—Hardened Headstock Spindle—Underneath Belt Motor Drive

The Series "R" 11-inch Tool Room Lathe has the precision accuracy required for the most exacting tool and gauge work and will retain its accuracy through years of service. It is a powerful, rigid tool designed for convenience and ease of operation.

The convenience and ease of operation of South Bend Tool Room Lathes have made them popular in shops where exacting tool work is handled.

New Features include double wall apron, hardened headstock spindle, and taper gibs on compound rest and cross slide. See pages 12 to 16.

Equipment included in price of the above lathe consists of:  $\frac{1}{2}$  H.P. instant reversing motor, reversing switch, wiring, belting, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, gear box, wrenches, and book "How to Run a Lathe."

Tool Room Attachments included in price consist of: Draw-in collet chuck (hand wheel type) with one collet, any size from  $\frac{1}{8}$ " up to  $1\frac{1}{16}$ " capacity by 64ths, graduated taper attachment, thread dial indicator, chip pan, and micrometer carriage stop.

### Net Factory Prices 11-inch Series "R" South Bend Tool Room Precision Lathes—Underneath Belt Motor Drive

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Swing Over Carriage Inches	Hole Through Spindle Inches	Collet Capacity Inches $\frac{1}{64}$ " up to by 64ths to	Size Motor Used H.P.	Quick Change Gear Tool Room Lathes					
							Catalog No.	Approx. Weight Casted Pounds	Code Word for Lathe	Instant Reversing Motors		
										3-Phase 60-Cycle A.C.	1-Phase 60-Cycle A.C.	Direct Current
11 $\frac{1}{2}$ "	3 $\frac{3}{4}$ "	18	7	$\frac{1}{2}$ "	$\frac{1}{8}$ " to $\frac{1}{16}$ "	$\frac{1}{2}$	8111-Z	1035	Babel	\$776.00	\$790.00	\$784.00
11 $\frac{1}{2}$ "	4	24	7	$\frac{1}{2}$ "	$\frac{1}{8}$ " to $\frac{1}{16}$ "	$\frac{1}{2}$	8111-A	1070	Babel	789.00	803.00	797.00
11 $\frac{1}{2}$ "	5	36	7	$\frac{1}{2}$ "	$\frac{1}{8}$ " to $\frac{1}{16}$ "	$\frac{1}{2}$	8111-B	1140	Babel	815.00	829.00	823.00
11 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	42	7	$\frac{1}{2}$ "	$\frac{1}{8}$ " to $\frac{1}{16}$ "	$\frac{1}{2}$	8111-S	1175	Bapez	828.00	842.00	836.00

Extra for No. 303 center rest, \$9.00; for No. 352 follower rest, \$9.00.

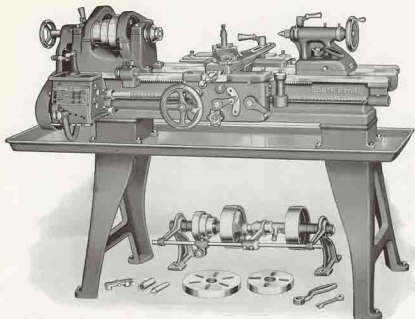


Fig. 6. Cat. No. 8011-A, 11" x 4' Series "R" Tool Room Quick Change Gear Countershaft Drive Lathe complete as shown. \$637.00

## 11-inch Tool Room Quick Change Gear Precision Lathe—Series "R"

Double Wall Apron—Hardened Headstock Spindle—Countershaft Drive

The Series "R" 11-inch Tool Room Lathe has the precision accuracy required for the most exacting tool and gauge work, and will retain its accuracy through years of service. It is carefully designed for convenience and ease of operation.

The convenience and ease of operation of South Bend Tool Room Lathes have made them popular in shops where exacting tool work is handled.

**New Features** include double wall apron, hardened headstock spindle, taper gibs on compound rest and cross slide. See pages 12 to 15.

**Equipment** included in the price of this lathe consists of: countershaft with two friction clutch pulleys, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, gear box, wrenches, installation plan, and book "How to Run a Lathe."

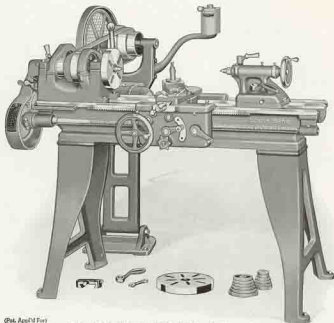
**Tool Room Attachments** included in price consist of: Draw-in collet chuck (hand wheel type) with one collet, any size from  $\frac{1}{8}$ " up to  $\frac{17}{32}$ " capacity by 64ths, graduated taper attachment, thread dial indicator, oil pan, and micrometer carriage stop.

### Net Factory Prices 11-inch Series "R" South Bend Tool Room Precision Lathes—Countershaft Drive

Swing Over Bed Inches	Length of Bed Feet	Distance Between Casters Inches	Swing Over Carriage Inches	Hole Through Spindle Inches	Collet Capacity Inches $\frac{1}{8}$ " up to 64ths to	Cone Pulley Belt Inches	Counter-shaft Speed R.P.M.	Power Required H.P.	Quick Change Gear Tool Room Lathes			
									Catalog No.	Approx. Weight Casted Pounds	Code Word for Lathe	Net Factory Price
11 $\frac{1}{8}$	3 $\frac{1}{2}$	18	7	$\frac{1}{8}$	$\frac{1}{8}$	1 $\frac{1}{2}$	255	$\frac{1}{2}$	8011-Z	817	Amlet	\$624.00
11 $\frac{1}{8}$	4	24	7	$\frac{1}{8}$	$\frac{1}{8}$	1 $\frac{1}{2}$	255	$\frac{1}{2}$	8011-A	852	Arlok	637.00
11 $\frac{1}{8}$	5	36	7	$\frac{1}{8}$	$\frac{1}{8}$	1 $\frac{1}{2}$	255	$\frac{1}{2}$	8011-B	922	Armum	663.00
11 $\frac{1}{8}$	5 $\frac{1}{2}$	42	7	$\frac{1}{8}$	$\frac{1}{8}$	1 $\frac{1}{2}$	255	$\frac{1}{2}$	8011-S	957	Axyl	676.00

Extra for No. 303 center rest, \$5.00; for No. 303 follower rest, \$6.00.

SOUTH BEND, INDIANA, U.S.A.



(Pat. Appl'd For)

Fig. 7. Cat. No. 910-A, 11" x 4" Series "R" Standard Change Gear Pedestal Adjustable Motor Drive Lathe complete as shown. . . . . \$479.00

## 11-inch Standard Change Gear Precision Lathe—Series "R"

### Double Wall Apron—Hardened Headstock Spindle—Pedestal Adjustable Motor Drive

The Series "R" 11-inch standard, and quick change gear lathes with pedestal adjustable motor drive are recommended for shops requiring an efficient motor driven lathe at a moderate price. Details of new features may be found on pages 12 to 15, inclusive.

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

**Adjustment is Provided** for taking up belt stretch. A belt tension release lever permits easy shifting of cone pulley belt. Motor belt is enclosed in guard.

Equipment included in price of lathe consists of: large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, wrenches, gear box or loose change gears, installation plan and instruction book "How to Run a Lathe."

Fig. 8. (Below) End View of Lathe showing Pedestal Adjustable Motor Drive.



**Electrical Equipment** included in price consists of: Pedestal adjustable motor drive countershaft; instant reversing motor; drum type reversing switch and bracket; wiring attached to switch and tagged for motor; V-belt, motor to countershaft; and flat leather belt and lacing.

### Net Factory Prices of 11-inch Series "R" Lathes with Pedestal Adjustable Motor Drive

SPECIFICATIONS					STANDARD CHANGE GEAR LATHES					QUICK CHANGE GEAR LATHES				
Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Spindle I.D. Inches	Approx. Weight Pounds	Catalog No.	Cuts Work for Lathe	Instant Reversing Motors			Catalog No.	Cuts Work for Lathe	Instant Reversing Motors		
							2-Phase 80-Cy. A.C.	1-Phase 90-Cy. A.C.	Direct Current			2-Phase 80-Cy. A.C.	1-Phase 90-Cy. A.C.	Direct Current
11 1/2	3 1/2	15	1 1/2	875	910-2	Helix	\$480.00	\$480.00	\$475.00	911-2	Mesh	\$516.00	\$500.00	\$504.00
11 1/2	4	14	1 1/2	925	910-3	Helix	475.00	482.00	486.00	911-3	Mesh	528.00	542.00	536.00
11 1/2	5	10	1 1/2	915	910-4	Helix	522.00	516.00	516.00	911-4	Mesh	555.00	568.00	560.00
11 1/2	5 1/2	43	1 1/2	960	910-5	Helix	514.00	520.00	522.00	911-5	Mesh	564.00	578.00	572.00



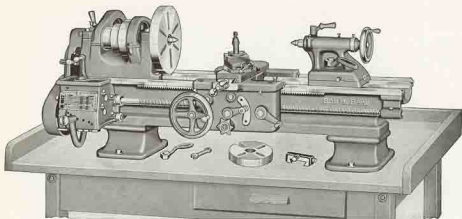


Fig. 9. Cat. No. 11-AB, 11" x 4" Series "R" Quick Change Gear Countershaft Drive Bench Lathe complete as shown.....\$433.00

## 11-inch Standard and Quick Change Gear Bench Lathes—Series "R"

### Double Wall Apron—Hardened Headstock Spindle—Countershaft Drive

The Series "R" 11-inch standard and quick change gear bench lathes with countershaft drive are recommended for shops that are equipped with line-shaft for power. The bench lathes are exactly the same as the countershaft driven floor leg lathes shown on pages 4 and 5, except that they have short legs for mounting on the bench.

**Improved Carriage** provides a wide range of automatic power longitudinal feeds and power cross feeds. An automatic safety interlock prevents engaging half-nuts with lead screw when power feeds are in use.

**New Features** include double wall apron, multiple disc friction feed clutch, hardened headstock spindle, and adjustable taper gibs on dovetail bearings of compound rest and cross slide. See pages 13, 14, and 15.

**Workmanship and Material** entering into the construction of Series "R" 11-inch South Bend Lathes are the finest it is possible to obtain and all parts are manufactured to the most exacting specifications.

**Equipment** for lathe consists of: countershaft, large and small face plates, tool post, thread cutting

stop, centers, spindle sleeve, wrenches, gear box or loose change gears, installation plan and instruction book "How to Run a Lathe."

**Countershaft** has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. If a wide range of spindle speeds is desired, the crossed belt may be eliminated and two forward speeds for the countershaft obtained by using a large and a small pulley on the lineshaft, thereby providing twelve spindle speeds.



Fig. 10. Double Friction Countershaft for Lathes.

### Not Factory Prices 11-inch Series "R" Back-Geared Screw Cutting Bench Lathes

Prices Include Countershaft and Equipment as Listed Above and on Page 15

Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Cross Pulley Hole Inches	Countershaft Speed R.P.M.	Power Required H.P.	Standard Change Gear Lathes				Quick Change Gear Lathes			
								Cat. No.	Code Word	Weight Crated Pounds	Net Factory Price	Cat. No.	Code Word	Weight Crated Pounds	Net Factory Price
11 1/4	3 3/4	18	1 1/2	7 1/2	1 1/2	255	1/2	10-ZB	Abies	280	\$361.00	11-ZB	Abies	285	\$411.00
11 1/4	4	24	1 1/2	7 1/2	1 1/2	255	3/4	10-AB	Abies	610	373.00	11-AB	Abies	625	423.00
11 1/4	6	36	1 1/2	7 1/2	1 1/2	255	1	10-BB	Abies	580	397.00	11-BB	Abies	695	447.00
11 1/4	8 1/4	48	1 1/2	7 1/2	1 1/2	255	1 1/2	10-SB	Abies	715	499.00	11-SB	Abies	730	459.00

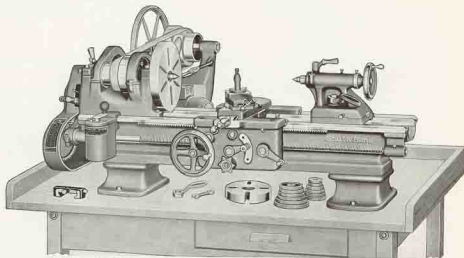


Fig. 11. Cat. No. 410-A, 11" x 6" Series "R" Standard Change Gear Horizontal Motor Drive Lathe complete as shown....\$453.00

## 11-inch Standard Change Gear Bench Lathe—Series "R"

Double Wall Apron—Hardened Headstock Spindle—Adjustable Horizontal Motor Drive

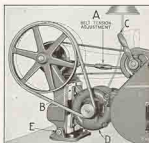
The Series "R" 11-inch Standard Change Gear Bench Lathe is recommended for production operations and for use in shops where few changes for threads and feeds are required. Loose change gears are furnished for a variety of automatic power feeds and for cutting standard screw threads. See page 14.

The Adjustable Horizontal Motor Drive is a powerful and efficient drive for the bench lathe. Belt tension adjustment is provided for both the cone pulley belt and motor belt. A belt tension release permits easy shifting of the belt from one step of the cone pulley to another.

New Features include double wall apron, multiple disc friction feed clutch, hardened headstock spindle, and adjustable taper gibs on dovetail bearings of compound rest and cross slide. See pages 12 to 15.

Equipment included in the price of this lathe consists of: adjustable belt tension horizontal countershaft,  $\frac{1}{2}$  H.P. motor, reversing switch, wiring, belting, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, change gears, wrenches, installation plan, and book "How to Run a Lathe".

Net Factory Prices of 11-inch Series "R" Standard Change Gear Horizontal Motor Drive Bench Lathes



(Not App'd For)  
Fig. 12. End View of lathe showing Adjustable Horizontal Motor Drive.

SPECIFICATIONS										STANDARD CHANGE GEAR LATHES			
Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Cone Pulley Belt Inches	Countershaft Speed R.P.M.	Size Motor Used H.P.	Approx. Weight Casted Pounds	Catalog No.	Code Word for Lathe	Instant Reversing Motors 3-Phase 60 Cycle A.C. Motor	1-Phase 60 Cycle A.C. Motor	Direct Current Motor
11 1/2	3 1/2	18	3/8	7	1 1/2	255	1/2	670	410-Z	Damyl	\$421.00	\$435.00	\$429.00
11 1/2	4	24	3/8	7	1 1/2	255	1/2	700	410-A	Dagny	433.00	447.00	441.00
11 1/2	5	36	3/8	7	1 1/2	255	1/2	770	410-B	Dagny	457.00	471.00	465.00
11 1/2	5 1/2	42	3/8	7	1 1/2	255	1/2	805	410-S	Darks	469.00	483.00	477.00

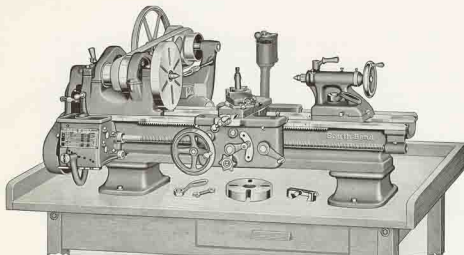


Fig. 13. Cat. No. 411-A, 11" x 6" Series "R" Quick Change Gear Horizontal Motor Drive Lathe complete as shown.....\$483.00

## 11-inch Quick Change Gear Bench Lathe—Series "R"

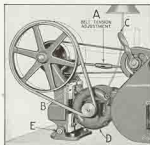
Double Wall Apron—Hardened Headstock Spindle—Adjustable Horizontal Motor Drive

The Series "R" 11-inch Quick Change Gear Bench Lathe is recommended for tool room and maintenance work and for use in shops where frequent changes for threads and feeds are required. Full quick change gear equipment is furnished for automatic power feeds and for cutting screw threads. See page 14.

The Adjustable Horizontal Motor Drive is a powerful and efficient drive for the bench lathe. Belt tension adjustment is provided for both the cone pulley belt and motor belt. A belt tension release permits easy shifting of the belt from one step of the cone pulley to another.

New Features of lathe include double wall apron, multiple disc friction feed clutch, hardened headstock spindle, and adjustable taper gibs on dovetail bearings of compound rest and cross slide. See pages 12 to 15 inclusive.

Equipment included in the price of this lathe consists of: adjustable belt tension horizontal countershaft,  $\frac{1}{2}$  H.P. motor, reversing switch, wiring, belting, large and small face plates, tool post, thread cutting stop, centers, spindle sleeve, gear box, wrenches, installation plan, and book "How to Run a Lathe".



(Pat. Applied For)  
Fig. 14. End View of Lathe showing Adjustable Horizontal Motor Drive.

Net Factory Prices of 11-inch Series "R" Quick Change Gear Horizontal Motor Drive Bench Lathes

SPECIFICATIONS										QUICK CHANGE GEAR LATHES			
Swing Over Bed Inches	Length of Bed Feet	Distance Between Centers Inches	Hole Through Spindle Inches	Swing Over Carriage Inches	Cone Pulley Belt Inches	Counter Shaft Speed R.P.M.	Size Motor Used H.P.	Approx. Weight Casted Pounds	Catalog No.	Code Word for Lathe	Instant Reversing Motor 3-Phase 60-Cycle A.C. Motor	1-Phase 60-Cycle A.C. Motor	Direct Current Motor
11 $\frac{1}{2}$	3 $\frac{1}{2}$	18	$\frac{1}{2}$	7	1 $\frac{1}{2}$	255	$\frac{1}{2}$	685	411-Z	Dudze	\$471.00	\$485.00	\$479.00
11 $\frac{1}{2}$	4	24	$\frac{1}{2}$	7	1 $\frac{1}{2}$	255	$\frac{1}{2}$	715	411-A	Dudze	483.00	497.00	491.00
11 $\frac{1}{2}$	5	30	$\frac{1}{2}$	7	1 $\frac{1}{2}$	255	$\frac{1}{2}$	785	411-B	Dudze	507.00	521.00	515.00
11 $\frac{1}{2}$	5 $\frac{1}{2}$	42	$\frac{1}{2}$	7	1 $\frac{1}{2}$	255	$\frac{1}{2}$	820	411-S	Dudze	519.00	533.00	527.00

# 11-inch Series "R" South Bend Lathes

## Back-Geared, Screw Cutting

All of the 11-inch Series "R" South Bend Lathes illustrated and described in this catalog have identical units. The headstock, tailstock, carriage, and lathe bed, are all of the same design and of the same quality. The units differ only in a few minor details, which are changed for various types of drives, such as the countershaft drive, and underneath motor drive, and for various features, such as quick change and standard change gear equipment, tool room equipment, bench legs, floor legs, etc. The features described on pages 13 and 14 and the specifications on page 15 apply to all 11-inch Series "R" Lathes.

We recommend the Series "R" Lathe for use in tool and die shops, machine shops, laboratories and manufacturing plants where the finest type of back-geared, screw cutting lathe is required.

**New features and improvements** on the Series "R" Lathe include: heat treated headstock spindle with all bearing surfaces hardened and ground, including taper hole; double wall apron with self-oiling steel gears, and all gear shafts supported on both ends; multiple disc friction clutch in apron; special alloy iron lathe bed containing 50% steel; new design saddle with improved compound rest. Dovetail bearings of compound rest and cross slide are hand scraped and fitted with adjustable taper gibs.

Convenience and ease of operation are assured by the simple, practical design of the lathe. Few controls well placed, large easy-reading micrometer dials, quick acting spring latch reverse for threads and feeds, wrenchless bull gear lock, graduated tailstock spindle, large hand wheels, direct reading index chart on quick change gear box for screw threads and feeds, positive automatic safety interlock for threads and feeds, and other improvements save time and effort and reduce the possibility of mistakes.

South Bend Lathes are noted for the number of practical attachments with which they can be equipped for taking care of milling, keyway cutting, grinding, turning tapers, etc., in the tool room, manufacturing plant and general machine shop. Most of these attachments may be purchased with the lathe or ordered later when needed. These attachments are illustrated and described in the No. 77 Bulletin—copy mailed free on request.

**Precision accuracy** is built into every Series "R" 11-inch South Bend Lathe. The highest standards of inspection are maintained, from the planing of the lathe bed to the final inspection tests which are made with the lathe in actual operation. All dovetails and V-ways are carefully hand-scraped and all units are aligned to the most exacting specifications.

**South Bend Lathe Works, South Bend, Indiana, U. S. A.**

*Established Nov. 1, 1906*

## New Double Wall Apron Used on All Series "R" Lathes

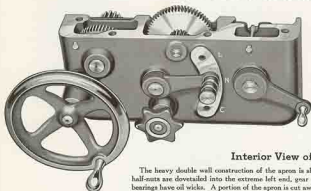


Fig. 15. Front view of double wall apron.

The new double wall apron used on all Series "R" Lathes is shown at left. All gears in the apron are made of steel and are self-oiling. The star knob at the bottom operates the multiple disc clutch for engaging the automatic longitudinal feed and cross feed.

The lever and plunger above the star knob is placed in position "L" for automatic longitudinal feed, position "N" for neutral, and position "C" for automatic cross feed. An automatic safety device prevents engaging the half-nuts and automatic feed simultaneously.

### Interior View of Apron

The heavy double wall construction of the apron is shown in Fig. 16 below. The close coupled half-nuts are dovetailed into the extreme left end, gear shafts are supported on both ends, and all bearings have oil wicks. A portion of the apron is cut away to show the location of the clutch. The spline in the lead screw drives the worm which operates the automatic feeds. The half-nuts and threads of the lead screw are used only when cutting screw threads.



Fig. 17. Sectional view showing the multiple disc friction clutch.

Fig. 16. Interior view of apron. Note the double wall construction.

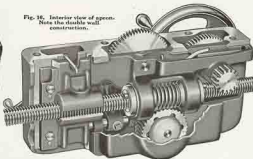


Fig. 18. Hardened and ground headstock spindle with phosphor bronze bearings used on all Series "R" 11-inch South Bend Lathes.

## Headstock Spindle—Hardened and Ground

All Series "R" 11-inch South Bend Lathes are equipped with heat treated headstock spindle made of special alloy steel. All bearing surfaces including the taper inside of the spindle are hardened and ground.

The spindle has a  $\frac{3}{8}$ " hole its entire length and takes collets  $\frac{1}{8}$ " to  $\frac{1}{2}$ " capacity. The spindle nose is  $1\frac{1}{2}$ " in diameter, 8

threads. Taper hole in spindle is fitted with taper sleeve for No. 2 Morse taper center.

Bearings for the headstock spindle are made of best quality phosphor bronze, line bored and lapped to a perfect bearing. The bearings are adjustable for wear and equipped with an improved felt wick oiling system.

## Detailed Description of Series "R" South Bend Lathes

The Series "R" 11-inch South Bend Lathes described in this bulletin have the power and rigidity for taking heavy cuts and the precision accuracy for the most exacting tool work. The workmanship and materials used are the best that can be obtained, and the substantial design assures permanent alignment of the headstock, tailstock and other major units.

**Back-Gear Headstock** is hand-scraped to lathe bed; has three-step cone for  $1\frac{1}{2}$ " belt; six changes of spindle speeds from 36 to 548 R.P.M., three direct and three back-gear; wrenchless bull gear lock; and spring latch reverse.

**Headstock Spindle** is made of high carbon steel, heat treated and hardened, finish ground, and has a  $\frac{7}{8}$ " hole its entire length. Collet capacity  $\frac{1}{16}$ " to  $1\frac{1}{2}$ ". Spindle nose  $1\frac{1}{8}$ " diameter, 8 threads.

**Phosphor Bronze Bearings** for headstock spindle are line bored and lapped to a perfect bearing, and are adjustable for wear. An improved felt wick oiling system lubricates the bearings.

**Tailstock** is hand-scraped to bed; has set-over for taper turning; graduated spindle; double plug spindle lock; No. 2 Morse taper spindle center, hardened, ground and self-ejecting; spindle travel 3'.

**Carriage** has wide deep bridge; is hand-scraped to bed; has carriage lock for facing and cutting off; and felt wipers for "V" ways.

### Quick Change Gear Lathe Equipment for Cutting Screw Threads and for Power Feeds

All quick change gear Series "R" 11-inch South Bend Lathes are equipped with full quick change mechanism for cutting a series of 48 right and left hand standard screw threads ranging from 2 to 112 per inch, including  $1\frac{1}{2}$ " pipe thread, as listed on the index chart shown in Fig. 19. The screw thread chart is attached to the gear box, as shown in Fig. 20, and is direct reading.

All changes for various pitches of screw threads are made by shifting levers on the gear box and no pick-off gears are used. A quick-acting spring latch reverse permits changing instantly from right hand to left hand threads.

Automatic longitudinal turning feeds and automatic cross feeds are also provided by the quick change gear mechanism. The automatic feed chart on the index plate is read directly in thousandths of an inch per revolution of the lathe spindle for the automatic longitudinal feed. This permits selecting any desired feed without making calculations.

SOUTH BEND LATHE WORKS											
QUICK CHANGE						SOUTH BEND, INC., U. S. A.					
LATHE						GEAR LATHE					
SCREW THREADS PER INCH						SCREW THREADS PER INCH					
IN.	TPI	INCH					INCH				
		2	3	4	5	6	8	10	12	14	
OUT	1/2	12	14	16	18	20	12	14	16	18	20
	3/4	12	14	16	18	20	12	14	16	18	20
	1	12	14	16	18	20	12	14	16	18	20
	1 1/4	12	14	16	18	20	12	14	16	18	20
	1 1/2	12	14	16	18	20	12	14	16	18	20
	2	12	14	16	18	20	12	14	16	18	20
	2 1/2	12	14	16	18	20	12	14	16	18	20
	3	12	14	16	18	20	12	14	16	18	20
	3 1/2	12	14	16	18	20	12	14	16	18	20
	4	12	14	16	18	20	12	14	16	18	20
SOUTH BEND, INC., U. S. A.											

## Features, Specifications and Equipment of Series "R" 11-inch South Bend Precision Lathes

The features and specifications listed below apply to all types of Series "R" 11-inch quick change gear and standard change gear South Bend precision lathes shown throughout this bulletin. Each lathe is built up of standard units, such as the headstock, tailstock, apron, carriage, bed, etc., which are carried in stock at all times, ready for assembling any type of 11-inch lathe.

### Features of Series "R" 11-inch Lathes

Back-geared headstock with 3-step cone pulley provides six spindle speeds.  
Hardened and ground steel headstock spindle with ground taper hole in spindle nose.  
Phosphor bronze headstock spindle bearings adjustable for wear.  
Patent oil cups and felt wick oiling system for spindle bearings.  
Wrenchless bull gear lock, back-gears enclosed in close fitting guards.  
Set-over tailstock for taper turning, and self-ejecting center.  
Graduated tailstock spindle with double plug binder.  
Semi-steel seasoned lathe bed with three hand scraped V-ways and one flat way.  
Adjustable taper gibs on dovetail bearings of compound rest and cross slide.  
Lathe saddle is fitted with felt wipers to oil and keep the V-ways of the bed clean.  
Automatic power longitudinal and cross feeds to tool rest.—Multiple disc friction clutch.  
Double wall apron with gear shafts supported on both ends.  
Quick-acting spring latch reverse on headstock for power feeds and threads.  
Precision lead screw and half-nuts for screw thread cutting.  
Safety device in apron prevents engaging half-nuts and automatic feeds at same time.  
Compound rest graduated 180°, swivels to any angle; improved lock and swivel.  
Large micrometer collars on compound rest and cross feed screw, adjustable.  
Carriage lock provided for accurate facing and cutting off.

### Specifications of All Series "R" 11-inch Lathes

Swing over bed.....11½ in.  
Swing over cross slide.....7 in.  
Size of spindle nose.....1½" diam., 8 threads  
Hole through spindle.....¾ in.  
Collet capacity.....¾ in. up to 1½ in.  
Head and tail spindle centers.....No. 2 Morse Taper  
Width of cone pulley belt.....1½ in.  
Thread cutting range, quick change.....2 to 112 per in.  
Thread cutting range, standard change.....4 to 40 per in.  
Automatic longitudinal feeds, quick change......003" to .020"  
Automatic longitudinal feeds, standard change......003" to .015"

Acme thread precision lead screw.....¾" diam., 8 threads  
Tailstock spindle travel.....3 in.  
Tailstock top set-over for taper turning.....¾ in.  
Countershaft friction pulley.....6½" diam., 2½" wide  
Recommended countershaft speed.....255 R.P.M.  
Spindle speeds, countershaft dr.....34, 54, 80, 203, 321, 512 R.P.M.  
Spindle speeds, motor drive.....36, 57, 92, 217, 342, 548 R.P.M.  
Tool rest cross slide travel.....8 in.  
Compound rest top angular travel.....2½ in.  
Tool post opening for tool shank.....¾" x ¾"  
Tool holder takes cutter bits.....¾" x ¾"

## Equipment Included in Price of 11-inch Series "R" South Bend Lathes

### Countershaft Driven Lathes

Equipment included in the price of each countershaft driven Series "R" South Bend Lathe listed in this bulletin consists of: double friction countershaft; large and small face plates; forged steel heat treated tool post; thread cutting stop with screw adjustment; tool steel centers for headstock and tailstock spindle; headstock spindle sleeve; wrenches; gear box or change gears; installation plan; and one copy each of books "How to Run a Lathe," "How to Cut Screw Threads," and "How to Grind Lathe Tool Cutter Bits."

Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and reverse. If a wide range of spindle speeds is desired, the crossed belt may be eliminated and two forward speeds for the countershaft obtained by using a large and a small pulley on the lineshaft.

### Motor Driven Lathes

Equipment included in the price of each motor driven Series "R" 11-inch South Bend Lathe listed in this bulletin consists of: large and small face plates; forged steel heat treated tool post; thread cutting stop with screw adjustment; tool steel centers for headstock and tailstock spindle; headstock spindle sleeve; wrenches; gear box or change gears; installation plan; and one copy each of instruction books "How to Run a Lathe," "How to Cut Screw Threads," and "How to Grind Lathe Tool Cutter Bits."

Electrical Equipment included in the price of each motor driven Series "R" 11-inch South Bend Lathe consists of: ½ H.P. instant reversing motor; drum reversing switch; wiring between motor and switch enclosed in flexible metal conduit; flat leather belt for cone pulleys; V-belt for motor and countershaft; and diagram showing wiring between motor and switch.

# Underneath Belt Motor Drive

For Series "R" 11-inch South Bend Lathes

## Silent — Powerful — Efficient

The South Bend patented underneath belt motor drive is the most efficient and practical direct drive equipment ever designed for a back-geared screw cutting lathe. This drive is unusually compact and is silent, powerful and economical in operation.

The motor and driving mechanism are fully enclosed in the cabinet leg underneath the lathe headstock. There are no exposed pulleys, belts or gears and no overhead belts or pulleys to obstruct vision or cast shadows upon the work.

The belt drive is the outstanding feature, as it is silent in operation and provides a smooth steady pull free from vibration and chatter. Power is transmitted from the motor to the countershaft by V-belt and from the countershaft up through the lathe bed to the headstock cone pulley by a flat leather belt.

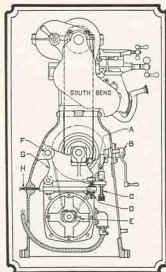


Fig. 24. Cross Section End View of the Underneath Belt Motor Drive Precision Lathe. Showing Principal Parts of Drive.

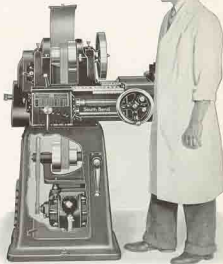


Fig. 25. Front View of Underneath Belt Motor Drive Lathe with Door Cut Away to Show Driving Mechanism.

## Belt Tension is Adjustable

Adjustment is provided for taking up belt stretch and for obtaining any desired tension on both the motor belt and cone pulley belt. A belt tension release lever conveniently located on the front of the cabinet leg permits the easy shifting of the cone pulley belt.

The down drive for the spindle will be appreciated by the engineer and mechanic as the pull of the belt is down against the solid portion of the headstock. The reversing motor and reversing switch permit starting, stopping and reversing the lathe spindle from an easy working position in front of the lathe. The lathe spindle may be instantly reversed when cutting screw threads by throwing the switch directly from "forward" to "reverse" position.

Features of this new drive include (A) Down drive to the spindle, (B) Eccentric lever for quick release of belt tension to permit easy shifting of cone pulley belt, (C) Cone Pulley belt tension adjustment, (D) Motor belt tension adjustment.

Illustrations and descriptions on this page apply to the Underneath Belt Motor Drive Lathes shown on pages 2, 3, and 6 of this bulletin.

**South Bend Lathe Works** 486 Niles Avenue  
South Bend, Indiana, U. S. A.