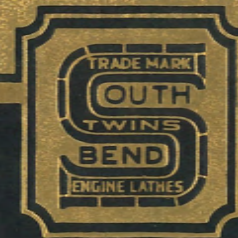


SOUTH BEND LATHES



CATALOG 100

CONTENTS

	Underneath Motor Drive PAGE	Pedestal Motor Drive PAGE	Counter- shaft Drive PAGE
Floor Leg Lathes			
16-inch Tool Room Lathes—Series "T"	13		14
16-inch Quick Change Gear Lathes—Series "T"	15	16	18
16-inch Standard Change Gear Lathes—Series "T"	15	17	19
14½-inch Tool Room Lathes—Series "T"	21		22
14½-inch Quick Change Gear Lathes—Series "T"	23	24	26
14½-inch Standard Change Gear Lathes—Series "T"	23	25	27
13-inch Tool Room Lathes—Series "T"	29		30
13-inch Quick Change Gear Lathes—Series "T"	31	32	34
13-inch Standard Change Gear Lathes—Series "T"	31	33	35
11-inch Tool Room Lathes—Series "T"	37		38
11-inch Quick Change Gear Lathes—Series "T"	39	40	42
11-inch Standard Change Gear Lathes—Series "T"	39	41	43
9-inch 1" Collet Tool Room Lathes	45		46
9-inch 1" Collet Quick Change Gear Lathes	48	49	47
9-inch Tool Room Lathes—Series "T"	55		56
9-inch Quick Change Gear Lathes—Series "T"	57	58	60
9-inch Standard Change Gear Lathes—Series "T"	57	59	61
9-inch "Workshop" Lathes—Models A, B, and C		77	79
9-inch "Workshop" Lathes with Chip Pans—A, B, & C			78
16-24-inch General Purpose Quick Change Gear Lathes	81	82	83
16-24-inch General Purpose Standard Change Gear Lathes	81	82	83
Raising Block Lathes	85	85	85
Bench Lathes			
11-inch Quick Change Gear Lathes—Series "T"	39	40	42
11-inch Standard Change Gear Lathes—Series "T"	39	41	43
9-inch 1" Collet Tool Room Lathe	50		
9-inch 1" Collet Quick Change Gear Lathes	51	52	53
9-inch Quick Change Gear Lathes—Series "T"	62	63	64
9-inch Standard Change Gear Lathes—Series "T"	62	63	65
9-inch "Workshop" Lathes—Model A		70	76
9-inch "Workshop" Lathes—Model B		75	76
9-inch "Workshop" Lathes—Model C		75	76
9-inch "Workshop" 12-Speed Lathes—Models A, B, and C		73	
9-inch "Workshop" V-Belt Lathes—Models A, B, and C		74	
9-inch "Workshop" Lathes with Raising Blocks—A, B, & C		79	
Metric Lathes			
Quick Change Gear—All sizes—Bench and Floor	108	108	108
Standard Change Gear—All sizes—Bench and Floor	109	109	109
Attachments, Features, and Specifications			
Accuracy Tests on South Bend Lathes		88, 89, 112	
Attachments, Chucks, Tools, Benches, and Accessories		90-110	
Features, Specifications, and General Information		4-11	
Floor Space Required for Lathes		104	
Lathe Units (Headstock, Spindle, Bed, Tailstock, Saddle, Compound Rest, Gear Box, and Apron)		6-11	
Motors, and Switches		106	
Pedestal Adjustable Motor Drive Mechanism		5, 86	
Quick Change Gear Lathe Information		7, 87	
Standard Change Gear Lathe Information		6, 87	
Underneath Belt Motor Drive Mechanism		4, 86	

For Export Information—See Pages 107 to 110.

Important Changes Affecting General Catalog No. 100

Since this catalog was published, improvements and alterations in design have been made affecting the descriptive material covering some sizes of South Bend Lathes as follows:

Pages 44 to 53

The 9-inch Swing 1" Collet Lathes shown on pages 44 to 53 have been discontinued. In their place we now supply the new South Bend 10-inch Swing 1" Collet Lathes, which are illustrated and described in Catalog 87-C, copy of which will be mailed on request. These lathes have an improved headstock with integral bearings and capillary oiling system.

Pages 54 to 65

The 9-inch Swing Series "T" Lathes shown on pages 54 to 65 have been discontinued. In their place we now supply the new 10" Swing South Bend Lathes with 11/16" maximum collet capacity, which are illustrated and described in Catalog 99-C, copy of which will be mailed on request. These lathes have an improved headstock with integral bearings and capillary oiling system.

SOUTH BEND LATHE WORKS
February 19, 1940



SOUTH BEND LATHE WORKS

Lathe Builders Since 1906

425 EAST MADISON ST. - - - SOUTH BEND, IND., U.S.A.

CABLE ADDRESS "TWIN S" SOUTH BEND

CODES USED

Western Union Five Letter Edition - Western Union Universal Edition
A. B. C. Fifth Edition Improved - Bentley's Complete Phrase and 2nd Editions
Acme - Lieber's - Standard - Our Own

Copyright, August 1939, by the South Bend Lathe Works. All Rights Reserved.

INDEX

16"
LATHES

14½"
LATHES

13"
LATHES

11"
LATHES

9" COLLET
LATHES

9"
LATHES

9" W/SHOP
LATHES

16-24"
LATHES

ATTACH-
MENTS

CHUCKS,
TOOLS

METRIC
LATHES

Fgs. 108-110

CONTENTS

Floor Leg Lathes

16-inch Tool Room Lathes—Series "T"			
16-inch Quick Change Gear Lathes—Series "T"			
16-inch Standard Change Gear Lathes—Series "T"			
14½-inch Tool Room Lathes—Series "T"			
14½-inch Quick Change Gear Lathes—Series "T"			
14½-inch Standard Change Gear Lathes—Series "T"			
13-inch Tool Room Lathes—Series "T"			
13-inch Quick Change Gear Lathes—Series "T"			
13-inch Standard Change Gear Lathes—Series "T"			
11-inch Tool Room Lathes—Series "T"			
11-inch Quick Change Gear Lathes—Series "T"			
11-inch Standard Change Gear Lathes—Series "T"			
9-inch 1" Collet Tool Room Lathes	45		
9-inch 1" Collet Quick Change Gear Lathes	48		
9-inch Tool Room Lathes—Series "T"	55		
9-inch Quick Change Gear Lathes—Series "T"	57		60
9-inch Standard Change Gear Lathes—Series "T"	57		61
9-inch "Workshop" Lathes—Models A, B, and C	77		79
9-inch "Workshop" Lathes with Chip Pans—A, B, & C			78
16-24-inch General Purpose Quick Change Gear Lathes	81	82	83
16-24-inch General Purpose Standard Change Gear Lathes	81	82	83
Raising Block Lathes	85	85	85

Bench Lathes

	Underneath Motor Drive PAGE	Horizontal Motor Drive PAGE	Counter- shaft Drive PAGE
11-inch Quick Change Gear Lathes—Series "T"	39	40	42
11-inch Standard Change Gear Lathes—Series "T"	39	41	43
9-inch 1" Collet Tool Room Lathe	50		
9-inch 1" Collet Quick Change Gear Lathes	51	52	53
9-inch Quick Change Gear Lathes—Series "T"	62	63	64
9-inch Standard Change Gear Lathes—Series "T"	62	63	65
9-inch "Workshop" Lathes—Model A		70	76
9-inch "Workshop" Lathes—Model B		75	76
9-inch "Workshop" Lathes—Model C		75	76
9-inch "Workshop" 12-Speed Lathes—Models A, B, and C		73	
9-inch "Workshop" V-Belt Lathes—Models A, B, and C		74	
9-inch "Workshop" Lathes with Raising Blocks—A, B, & C		79	

Metric Lathes

Quick Change Gear—All sizes—Bench and Floor	108	108	108
Standard Change Gear—All sizes—Bench and Floor	109	109	109

Attachments, Features, and Specifications

	PAGE
Accuracy Tests on South Bend Lathes	88, 89, 112
Attachments, Chucks, Tools, Benches, and Accessories	90-110
Features, Specifications, and General Information	4-11
Floor Space Required for Lathes	104
Lathe Units (Headstock, Spindle, Bed, Tailstock, Saddle, Compound Rest, Gear Box, and Apron)	6-11
Motors, and Switches	106
Pedestal Adjustable Motor Drive Mechanism	5, 86
Quick Change Gear Lathe Information	7, 87
Standard Change Gear Lathe Information	6, 87
Underneath Belt Motor Drive Mechanism	4, 86

For Export Information—See Pages 107 to 110.

New Model Series "T" South Bend Precision Lathes

The South Bend Lathe Works was established in South Bend, Indiana in 1906, and for 33 years has manufactured South Bend Lathes exclusively. The Series "T" Lathe shown in this catalog is the result of 33 years of experience in building lathes. Many improvements in design have been made, and as a result the Series "T" is the most modern and most practical South Bend Lathe ever produced. Each size is a precision tool capable of the most accurate machine work.

South Bend Lathes are manufactured in large quantities, and the economy of quantity production is reflected in reasonable selling prices. Special machinery, jigs, and fixtures are used to assure precision accuracy and interchangeability of parts. Following the various machining operations, hundreds of inspection tests are made by skilled inspectors using precision gauges and measuring instruments of unquestionable accuracy.

The workmanship and materials entering into the construction of South Bend Lathes are the best it is possible to obtain. The lathe bed, carriage, headstock, tailstock, and other important units of the lathe are made of semi-steel castings, the steel content ranging from 50 to 70%. This produces a hard, close-grained metal of uniform grain structure throughout, having a high tensile strength and wearing qualities far superior to ordinary cast iron.



SOUTH BEND LATHE WORKS

Lathe Builders Since 1906

425 EAST MADISON ST. - - - SOUTH BEND, IND., U.S.A.

CABLE ADDRESS "TWIN'S" SOUTH BEND

CODES USED

Western Union Five Letter Edition — Western Union Universal Edition
A. B. C. Fifth Edition Improved — Bentley's Complete Phrase and 2nd Editions
Acme — Lieber's — Standard — Our Own

Copyright, August 1939, by the South Bend Lathe Works. All Rights Reserved.

INDEX

16"
LATHES

14½"
LATHES

13"
LATHES

11"
LATHES

9" COLLET
LATHES

9"
LATHES

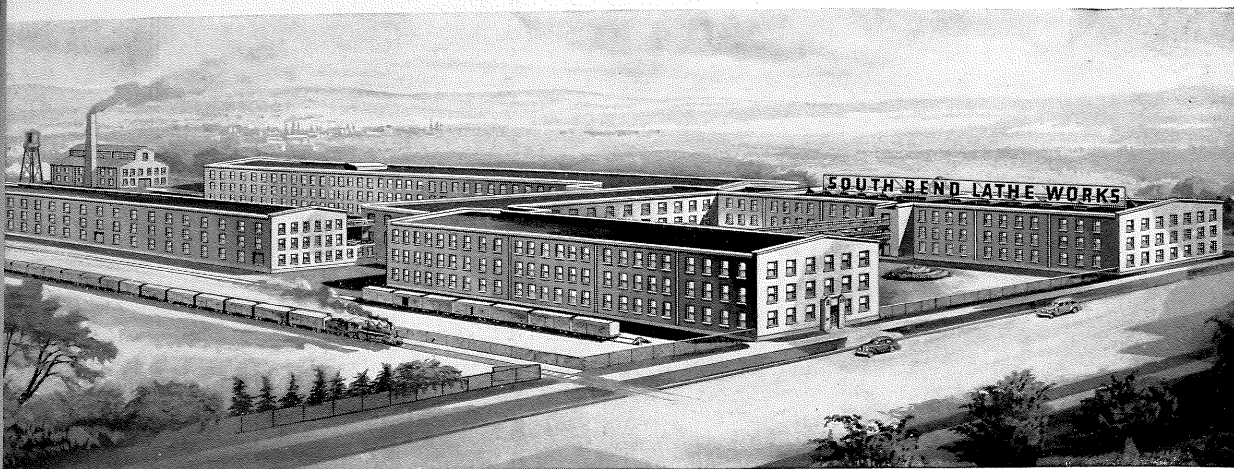
9" W'SHOP
LATHES

16-24"
LATHES

ATTACH-
MENTS

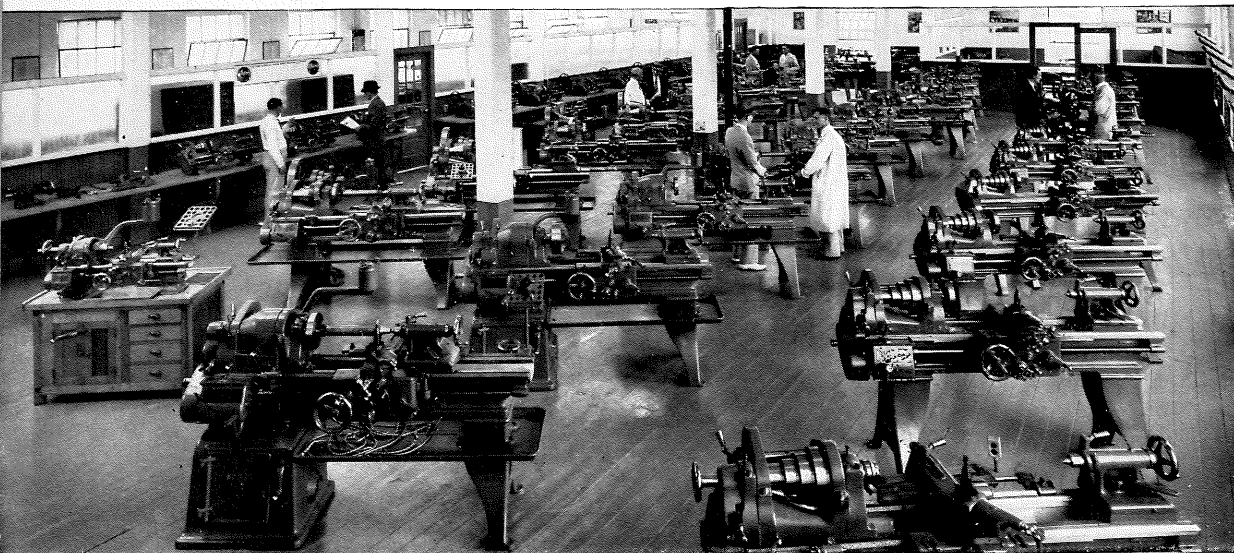
CHUCKS,
TOOLS

METRIC
LATHES
Pgs. 108-110



FACTORY

The factory of the South Bend Lathe Works was established in 1906 and for 33 years has been devoted to manufacturing lathes exclusively.



DISPLAY

In this factory display room more than 50 South Bend Lathes are set up and ready to demonstrate. Visitors are always welcome.

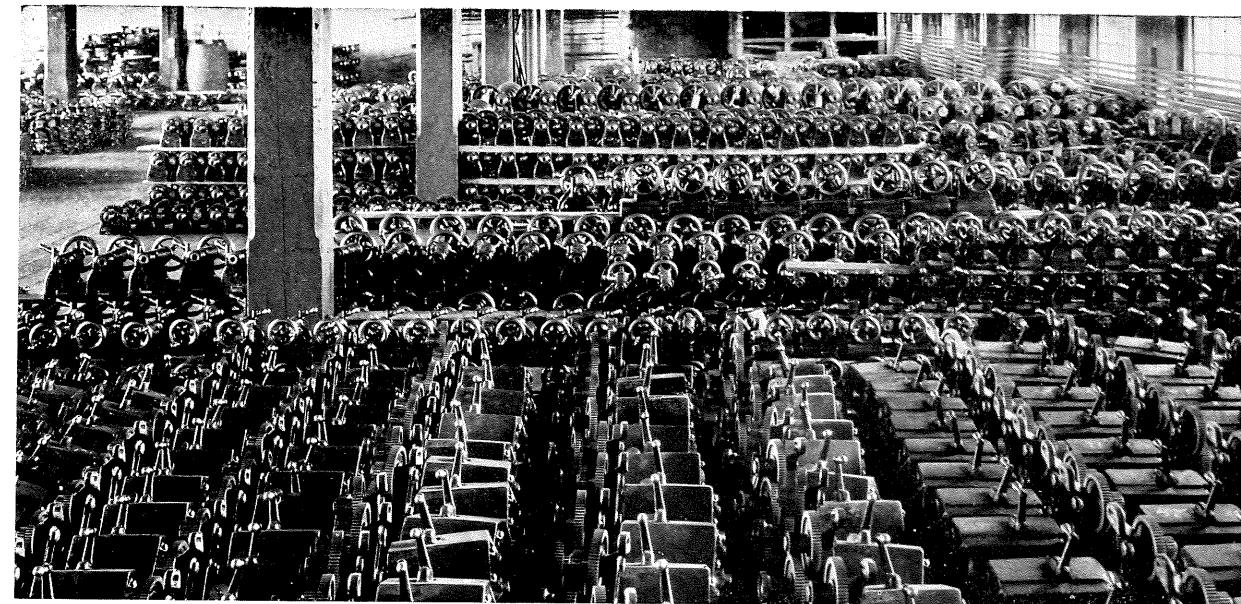


ASSEMBLY

This is the final assembly floor for Underneath Belt Motor Driven Lathes. South Bend Lathes are assembled in large lots.

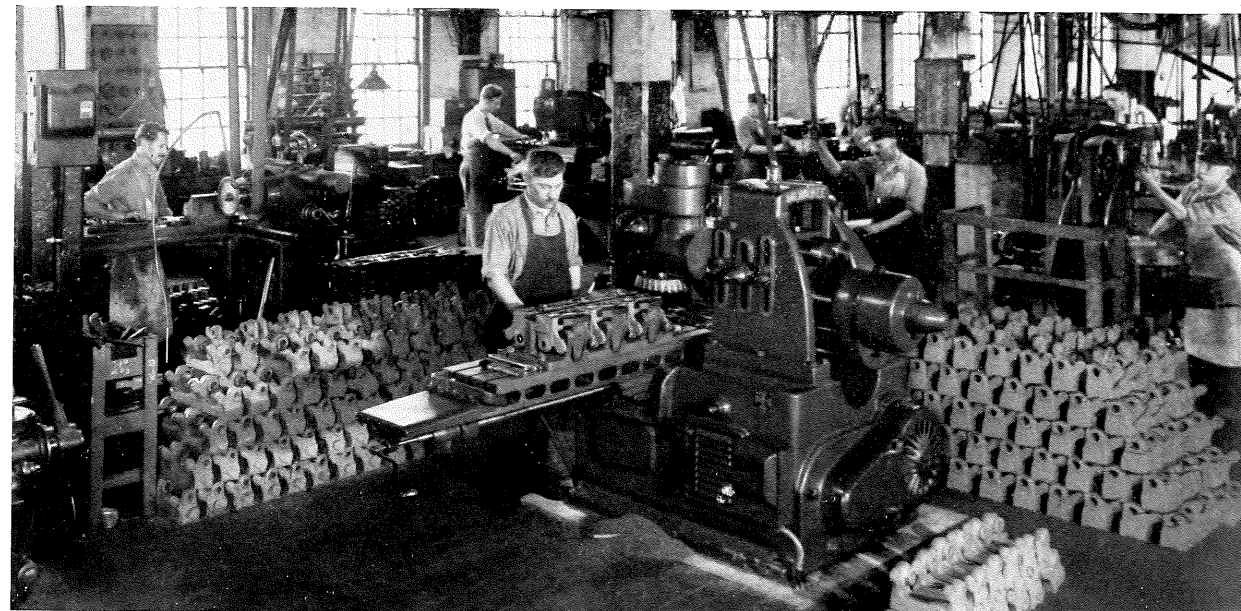
STOCK

Units for each size lathe are manufactured in lots of 300 to 1000 and are carried in stock ready for assembling any size or type of lathe.



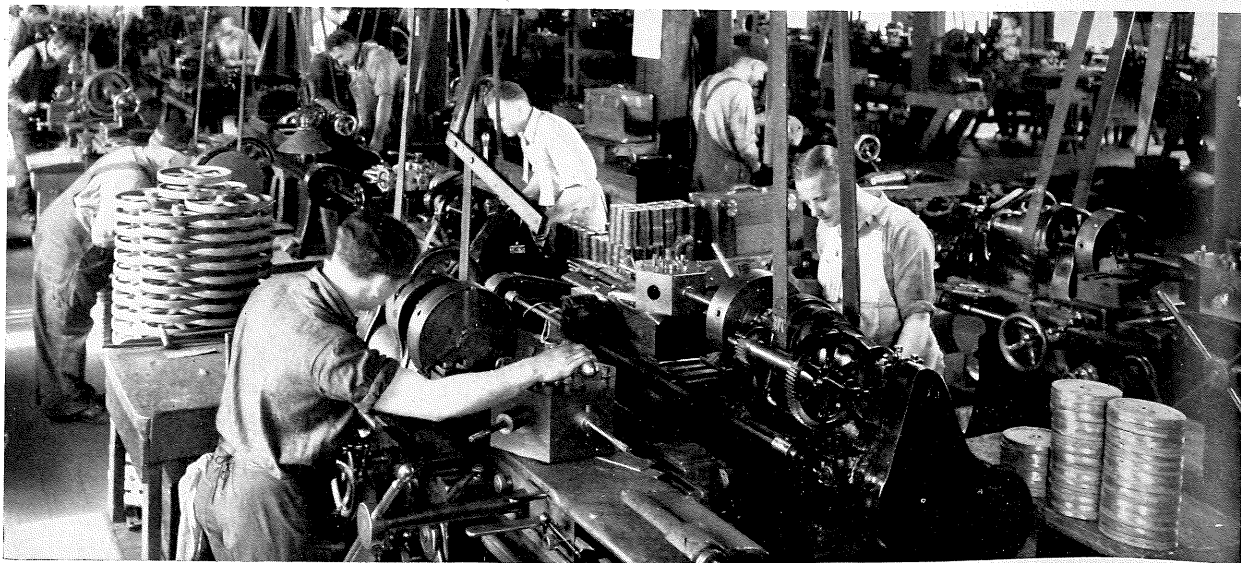
PRODUCTION

Parts for South Bend Lathes are economically manufactured in our modern factory equipped with the most efficient production machinery.



LATHES

In this room there are more than 50 South Bend Lathes in operation machining parts for South Bend Lathes.



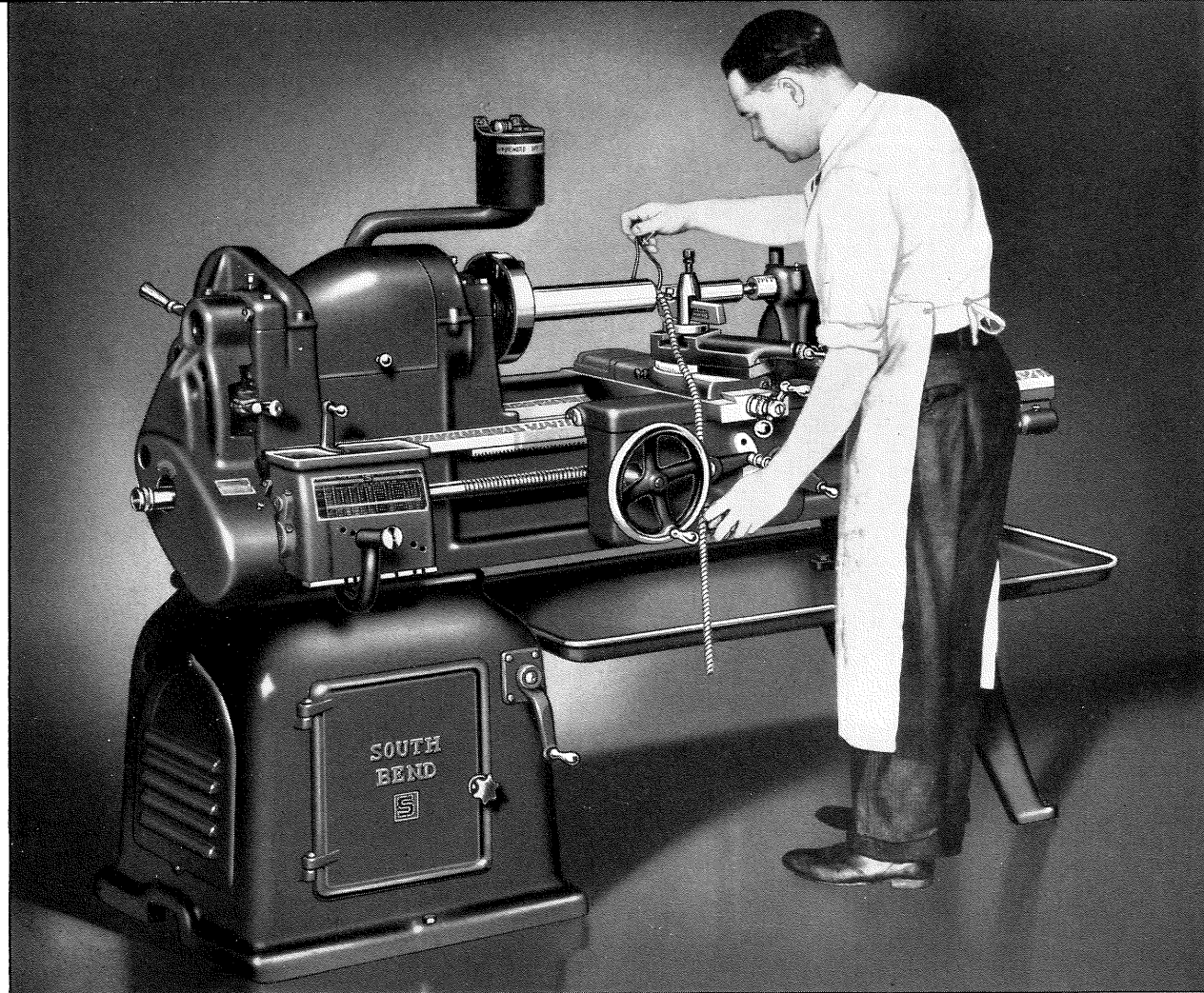


Fig. 7. Underneath Belt Motor Driven Lathe

Underneath Belt Motor Drive For Series "T" South Bend Lathes

The South Bend Underneath Belt Motor Drive is the most efficient and practical direct drive equipment for a back-geared screw cutting lathe. This fully enclosed drive is unusually compact and is silent in operation, powerful and economical.

The belt drive to the spindle 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. The pull of the belt is downward against the solid portion of the headstock.

Precision adjustments, "C" and "D," Fig. 8, provide for obtaining any desired tension on both the cone pulley belt and the motor belt. The adjusting screw "C" permits adjusting the cone pulley belt tension from one ounce to 1000 pounds or more. A belt tension release lever "B" permits releasing the cone pulley belt tension for easy shifting of the belt to change spindle speeds.

A conveniently located drum type reversing switch permits the operator to start, stop or reverse the rotation of the lathe spindle from an easy working position. Wiring between the motor and switch is enclosed in the metal arm to which the switch is attached, and in flexible metal conduit. All connections between motor and switch are made at the factory so that the lathe is ready to operate as soon as the lead wires are connected to the electric line.

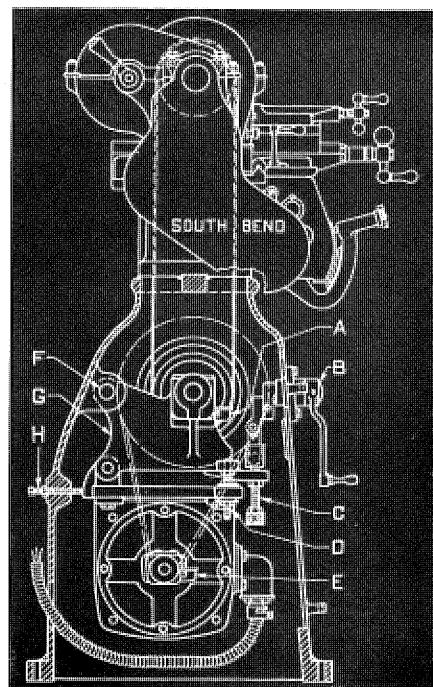


Fig. 8. End View of Motor Drive

SOUTH BEND LATHE WORKS

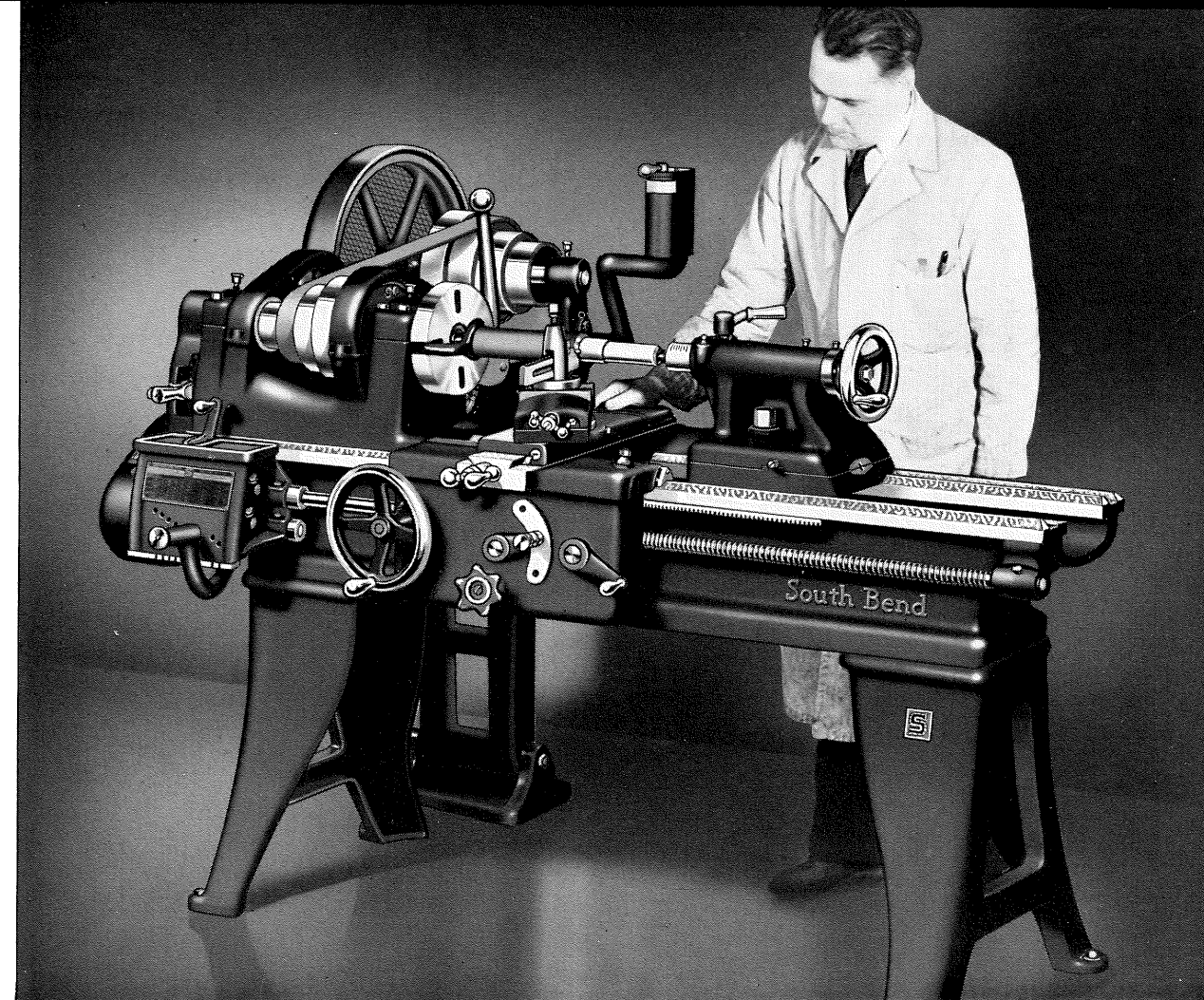


Fig. 9. Pedestal Motor Driven Lathe

Pedestal Adjustable Motor Drive For Series "T" South Bend Lathes

The new South Bend pedestal adjustable motor drive is convenient and efficient in operation and is reasonable in price. The motor and countershaft are mounted on a tilting pedestal back of the lathe. Power is transmitted from motor to countershaft by V-belts and from countershaft to the lathe spindle by a flat leather belt. This belted drive provides a smooth, steady pull, free from vibration and chatter.

Precision turnbuckle adjustment "A," Fig. 10, permits adjusting cone pulley belt for any desired belt tension. Lever "B" permits releasing the cone pulley belt tension instantly for easy shifting of the belt to change spindle speeds. Adjustment "D" is also provided for adjusting the tension of the V-belts used between the motor and countershaft. The V-belts are enclosed in a substantial guard.

Reversing switch "C" is conveniently located near the lathe spindle and permits the operator to start, stop or reverse the rotation of the lathe from an easy working position. Wiring between the motor and switch is enclosed in the metal arm to which the switch is attached, and in flexible metal conduit. All connections between motor and switch are made at the factory so that the lathe is ready to operate as soon as the lead wires are connected to the electric line.

The lathe is relieved of all strain as the weight of the motor and driving mechanism are supported by the pedestal, as shown in Fig. 10. There is no side pull on the lathe as the two adjustable tension braces "A" equalize the pull of the belt between the countershaft and lathe.

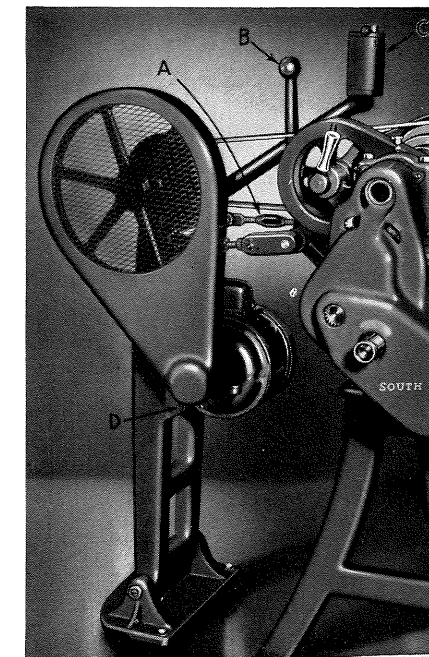


Fig. 10. End View of Pedestal Drive

SOUTH BEND, INDIANA, U.S.A.

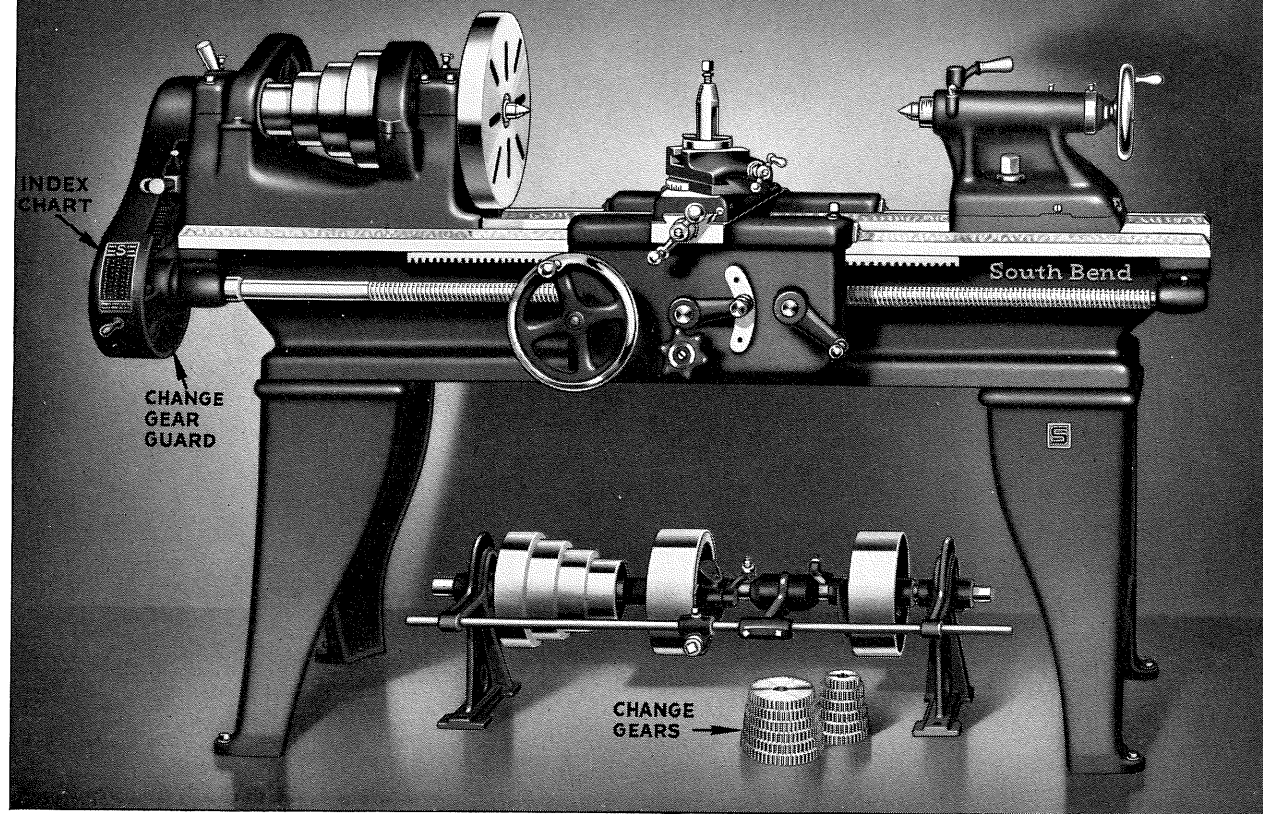


Fig. 11. Standard Change Gear Type South Bend Lathe

Series "T" Standard Change Gear Lathes

Independent Change Gears Used For Various Threads and Feeds

A Standard Change Gear Lathe is one having a set of independent change gears, as shown in Fig. 11 above, which are used to connect the lathe spindle with the lead screw for cutting various pitches of screw threads and also for obtaining a range of automatic power longitudinal carriage feeds and automatic power cross feeds through the friction clutch in the apron. Otherwise, the Standard Change Gear Lathes are exactly the same as the Quick Change Gear Lathes shown on page 7. All sizes of South Bend Lathes are made in both the Standard Change Gear Type and the Quick Change Gear Type.

A metal index chart (Fig. 12) is attached to each South Bend Standard Change Gear Lathe. This chart shows the arrangement of the change gears for various threads and for various power feeds. Standard Change Gear Lathes cut right and left hand screw threads from 2 to 112 per inch, except the 9-inch and 11-inch lathes which cut threads from 4 to 112 per inch. The automatic power cross feeds on all Series "T" Standard Change Gear Lathes range approximately from .0008" to .006". The automatic power longitudinal carriage feeds range approximately from .002" to .015" per revolution of the spindle, as indicated on the index chart.

Metric system Standard Change Gear Lathes have a corresponding range of metric threads and feeds. See page 109.

Standard Change Gear Lathes are popular in the small shop, as they are less expensive than the Quick Change Gear Type Lathes. They are also widely used in industrial plants for production operations which require few changes of threads and feeds.

SCREW THREADS AND POWER FEEDS			
9" SERIES "T" STANDARD CHANGE GEAR LATHE			
THREADS PER INCH GEAR	STUD IDLER GEAR	SCREW GEAR	CROSS LONG FEEDS FEEDS
4	24	FIG. 1	48
4 1/2	24	FIG. 1	54
5	16	FIG. 1	40
5 1/2	16	FIG. 1	44
6	16	FIG. 1	48
6 1/2	16	FIG. 1	52
7	16	FIG. 1	56
7 1/2	16	FIG. 1	60
8	32	FIG. 2	32
9	32	FIG. 2	36
10	32	FIG. 2	40
11	32	FIG. 2	44
11 1/2	32	FIG. 2	46
12	32	FIG. 2	48
13	32	FIG. 2	52
14	32	FIG. 2	56
15	24	FIG. 2	48
16	24	FIG. 2	54
20	16	FIG. 2	40
22	16	FIG. 2	44
24	16	FIG. 2	48
25	16	FIG. 2	52
27	16	FIG. 2	54
28	16	FIG. 2	56
30	16	FIG. 2	60
32	32	FIG. 3	32
36	32	FIG. 3	36
40	32	FIG. 3	40
44	32	FIG. 3	44
46	32	FIG. 3	46
48	32	FIG. 3	48
52	32	FIG. 3	52
54	32	FIG. 3	54
56	32	FIG. 3	56
60	32	FIG. 3	60
64	16	FIG. 3	32
72	16	FIG. 3	36
80	16	FIG. 3	40
88	16	FIG. 3	44
92	16	FIG. 3	46
96	16	FIG. 3	48
104	16	FIG. 3	52
112	16	FIG. 3	54
16	16	FIG. 3	60
16	16	FIG. 3	80

AUTOMATIC POWER FEEDS THROUGH FRICTION CLUTCH IN APRON OF HEADSTOCK SPINDLE

FIG. 1

FIG. 2

FIG. 3

Fig. 12. Index Chart Showing Threads and Feeds on 9-inch Standard Change Gear Lathe

SOUTH BEND LATHE WORKS

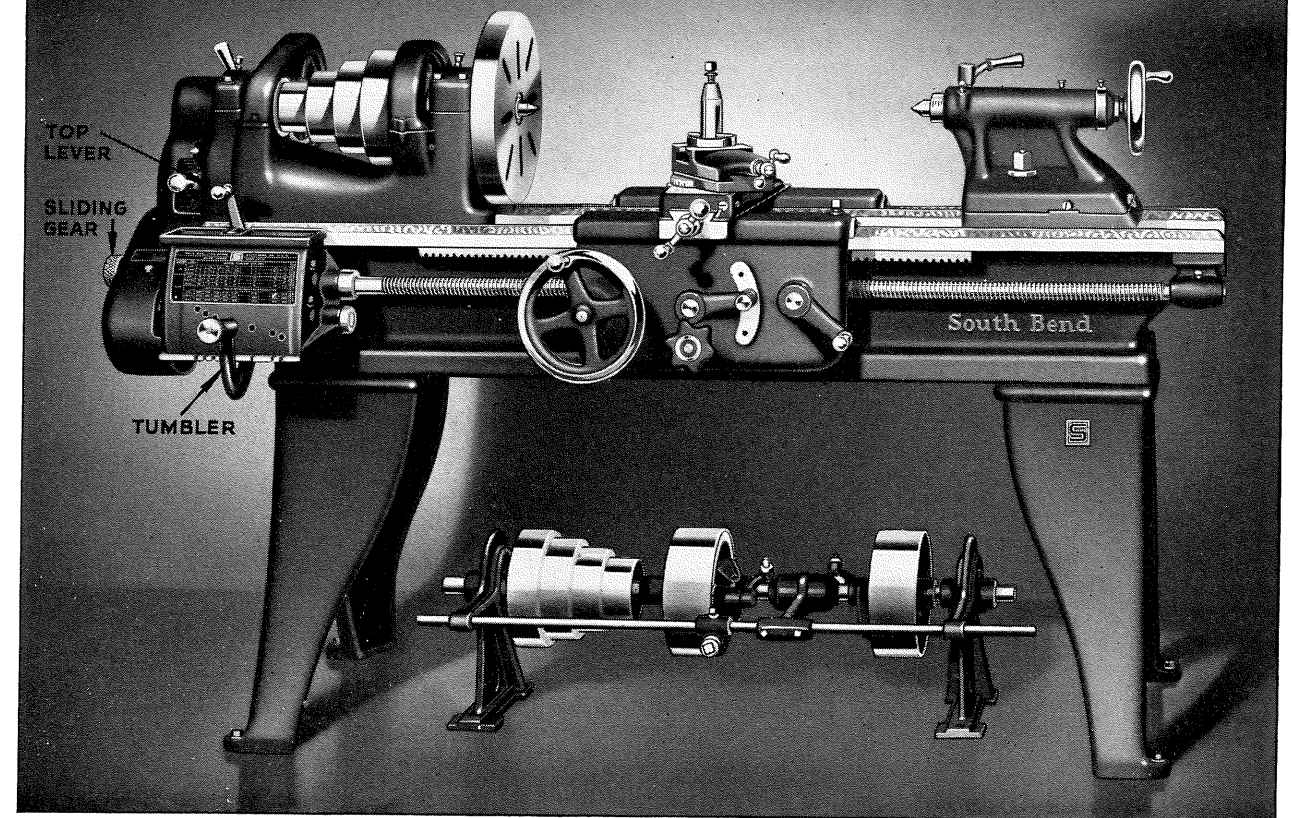


Fig. 13. Quick Change Gear Type South Bend Lathe

Series "T" Quick Change Gear Lathes

Full Quick Change Gear Box Provides Various Threads and Feeds

A Quick Change Gear Lathe is one having quick change gear equipment, as illustrated above, for cutting the various pitches of screw threads and for automatic power longitudinal carriage feeds and automatic power cross feeds through the friction clutch in the apron. Otherwise, the Quick Change Gear Lathe is exactly the same as the Standard Change Gear Lathe shown on page 6. All sizes of South Bend Lathes are made in the Quick Change Gear Type, as well as in the Standard Change Gear Type.

Changes for various pitches of screw threads and power feeds are made by shifting the levers on the gear box and by sliding the primary gears on the end of the lathe, as indicated in Fig. 13 above.

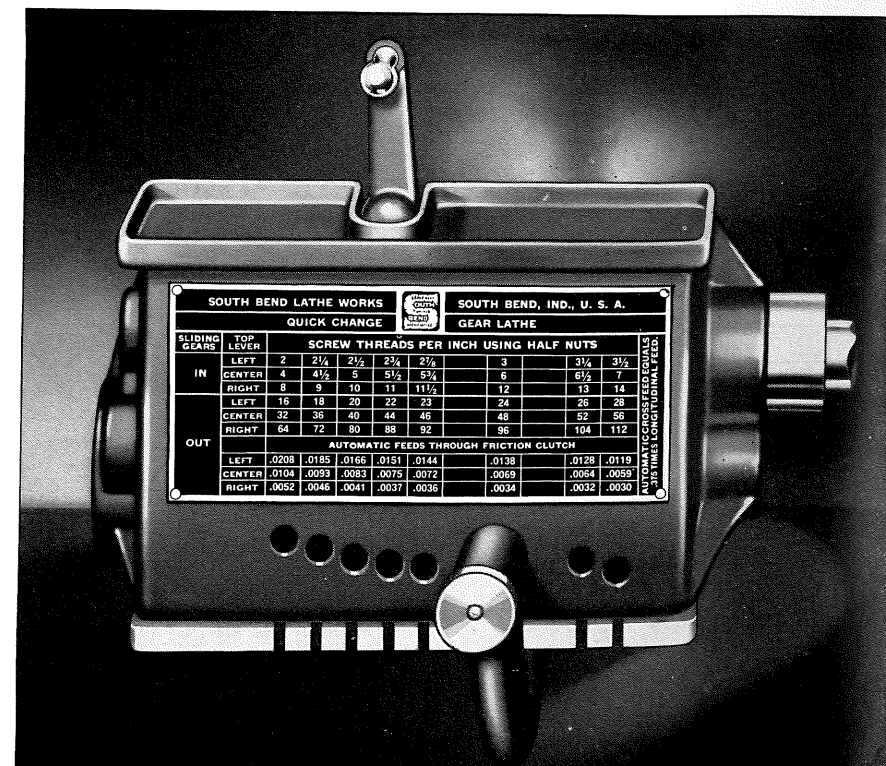
The quick change gear box provides for cutting 48 right hand and left hand screw threads, ranging from 2 to 112 per inch except the 9-inch lathe which cuts 4 to 224 threads per inch. A wide range of power carriage feeds for turning and facing are also available. A direct reading index chart attached to the gear box, as shown in Fig. 14, shows the arrangement of the levers for the various threads and feeds.

Metric system Quick Change Gear Lathes have a corresponding range of metric threads and feeds. See page 108.

SOUTH BEND, INDIANA, U.S.A.

Quick Change Gear Lathes are popular in shops where frequent changes of threads and feeds must be made, such as for tool and die work, general repair and maintenance, and for some production operations.

Fig. 14. Quick Change Gear Box used on 13" South Bend Lathe



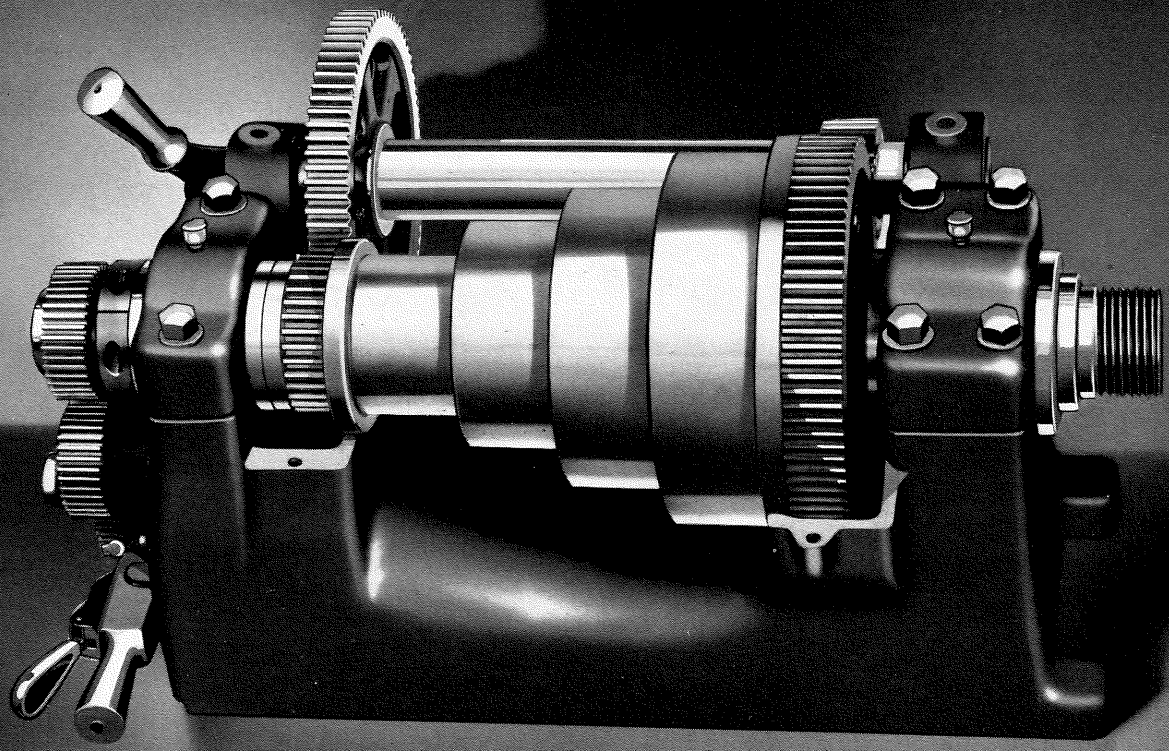


Fig. 15. The Lathe Headstock with Gear Guards Removed to Show Back Gears

Series "T" Lathe Headstock

Heat Treated Alloy Steel Spindle—Phosphor Bronze Bearings

Headstocks used on all Series "T" South Bend Lathes are back-geared and are equipped with an improved wrenchless bull gear lock, which permits engaging or disengaging the back gears without using a wrench.

A 4-step cone pulley providing eight changes of spindle speeds (four direct belt drive and four back-geared) is used for the 13", 14½", 16" and 16-24" lathes. A 3-step cone pulley providing six changes of spindle speeds (three direct belt drive and three back-geared) is used for the 9" and 11" lathes.

Carburized and Hardened Spindle

The headstock spindle is made of a special quality alloy spindle steel. All bearing surfaces, including tapered hole, are carburized, hardened and ground, and have a hardness of 51 to 55 on Rockwell C scale.

Fig. 16. Hardened and Ground Headstock Spindle and Phosphor Bronze Spindle Bearings.

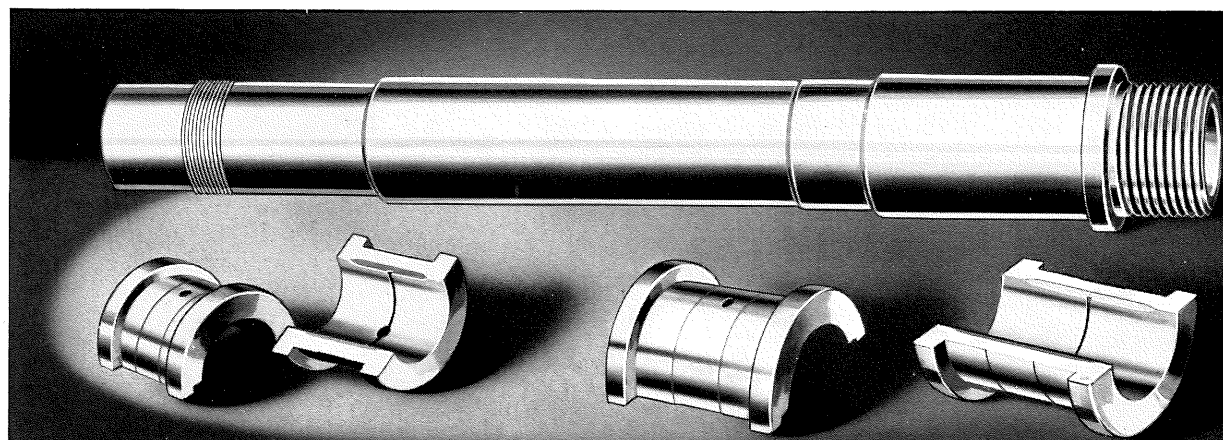
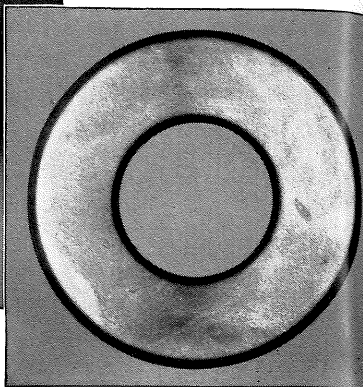


Fig. 15-A. Cross Section of Headstock Spindle for Series "T" Lathes. Dark portion shows depth (3/64") of carburized and hardened bearing surfaces



The spindle is hollow so that bars and tubes may be passed through the lathe headstock for machining. A hardened and ground thrust bearing and an adjustable take-up nut are provided to eliminate end play. See Fig. 15-A.

The spindle bearings are made of best quality phosphor bronze and are adjustable for wear. Patented hinge lid oil cups and a felt pad oiling system provide ample lubrication for the spindle bearings.

9-inch 1" Collet Lathe Headstock

The headstock for the 9-inch 1" Collet Lathe is similar to the Series "T" Lathe Headstock except for a special bearing construction and an extra large capacity through the spindle. Integral cast iron spindle bearings and a ball thrust bearing are used. The spindle bearings are adjustable for wear and have an improved capillary oiling system.

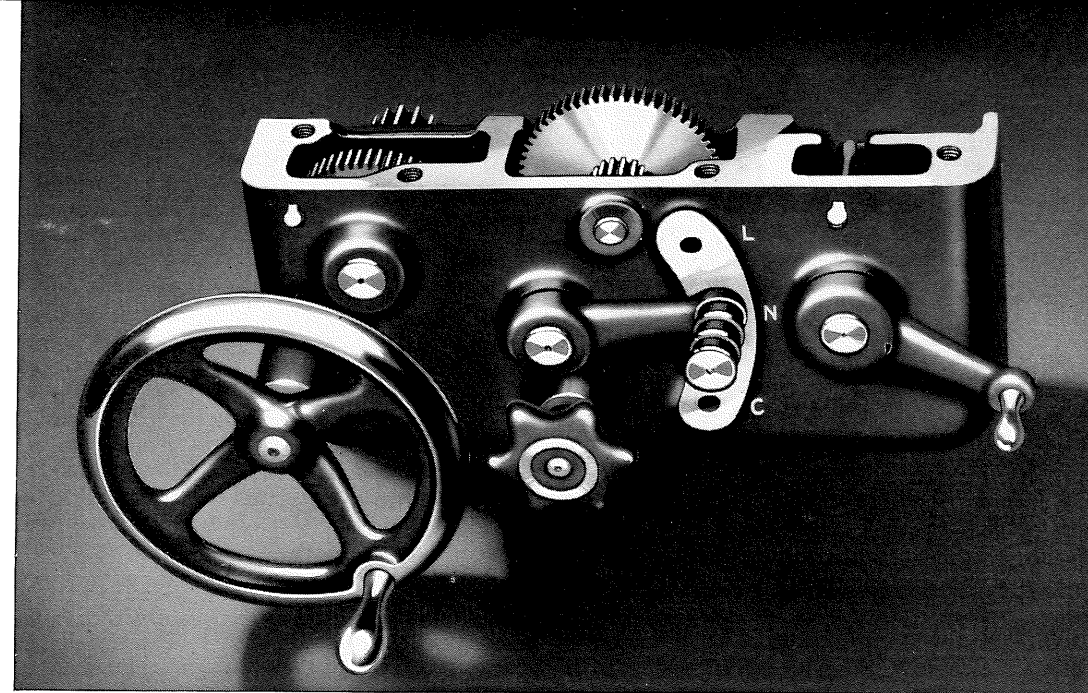


Fig. 17. Front View of Series "T" Double Wall Apron Showing Rigid Box Type Construction

New Series "T" Double Wall Apron

Multiple Disc Friction Clutch—All Gears Steel

The Series "T" double wall apron shown above is rigidly constructed and provides substantial support for both ends of the gear shafts. A tumbler gear shift is used to change from automatic cross feed to automatic longitudinal feed.

The multiple disc friction clutch used for operating both the automatic cross feeds and the automatic longitudinal feeds is shown in Fig. 18. Alternate steel discs are keyed to the clutch shaft and worm wheel respectively. A slight turn of the clutch knob will engage or disengage the clutch, placing the automatic feeds in operation. This clutch will engage or release instantly. It is smooth in operation and will not stick or slip under heavy cuts.

The half-nuts for thread cutting are close coupled and are dovetailed into the back wall of the apron, as shown in Fig. 19 below. The half-nuts and threads of the lead screw are used only when cutting screw threads as a spline in the lead screw drives the worm which operates the automatic power carriage feeds. An automatic safety interlock prevents engaging either the half-nuts or the automatic feeds when the other is already engaged.

Self Oiling Steel Gears in Apron

Gears in the apron are made of steel and have reservoir and felt wick oiling system. The rack pinion, shown at right end of apron (Fig. 19) is rigidly supported by substantial bearings in both the front wall and back wall of the apron.

Fig. 19. (Right) Back View of New Double Wall Apron

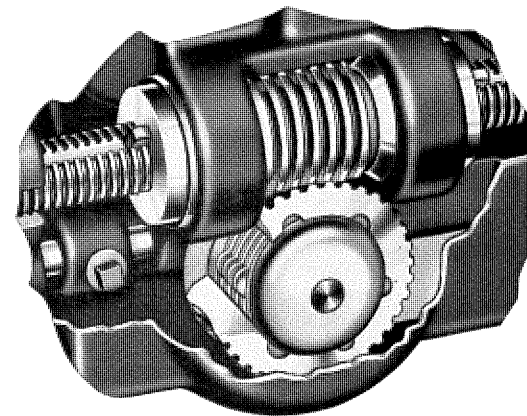
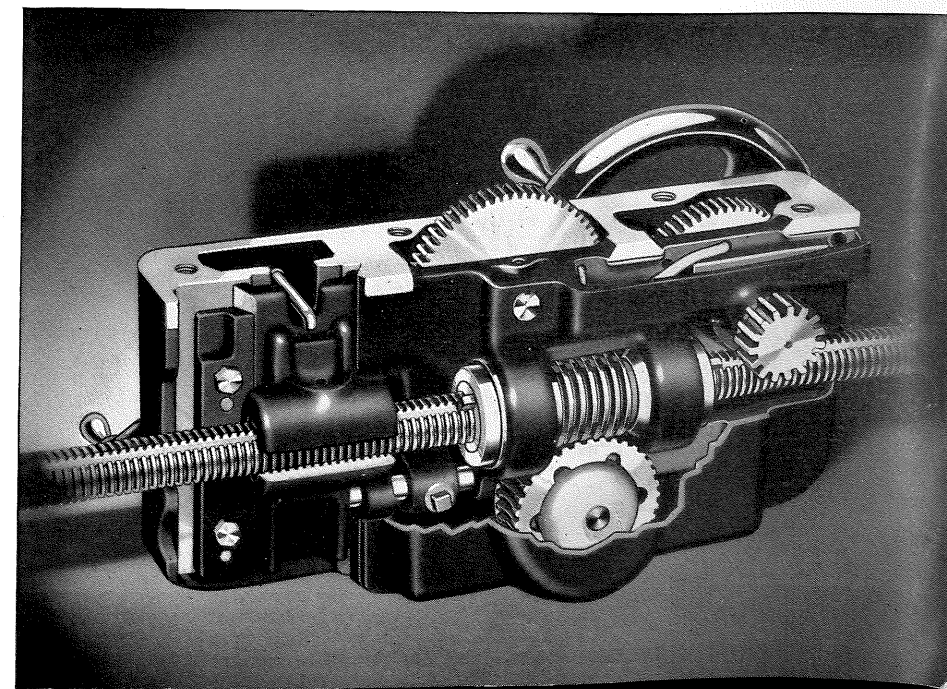


Fig. 18. (Above) Cut-away View Showing the Multiple Disc Friction Feed Clutch



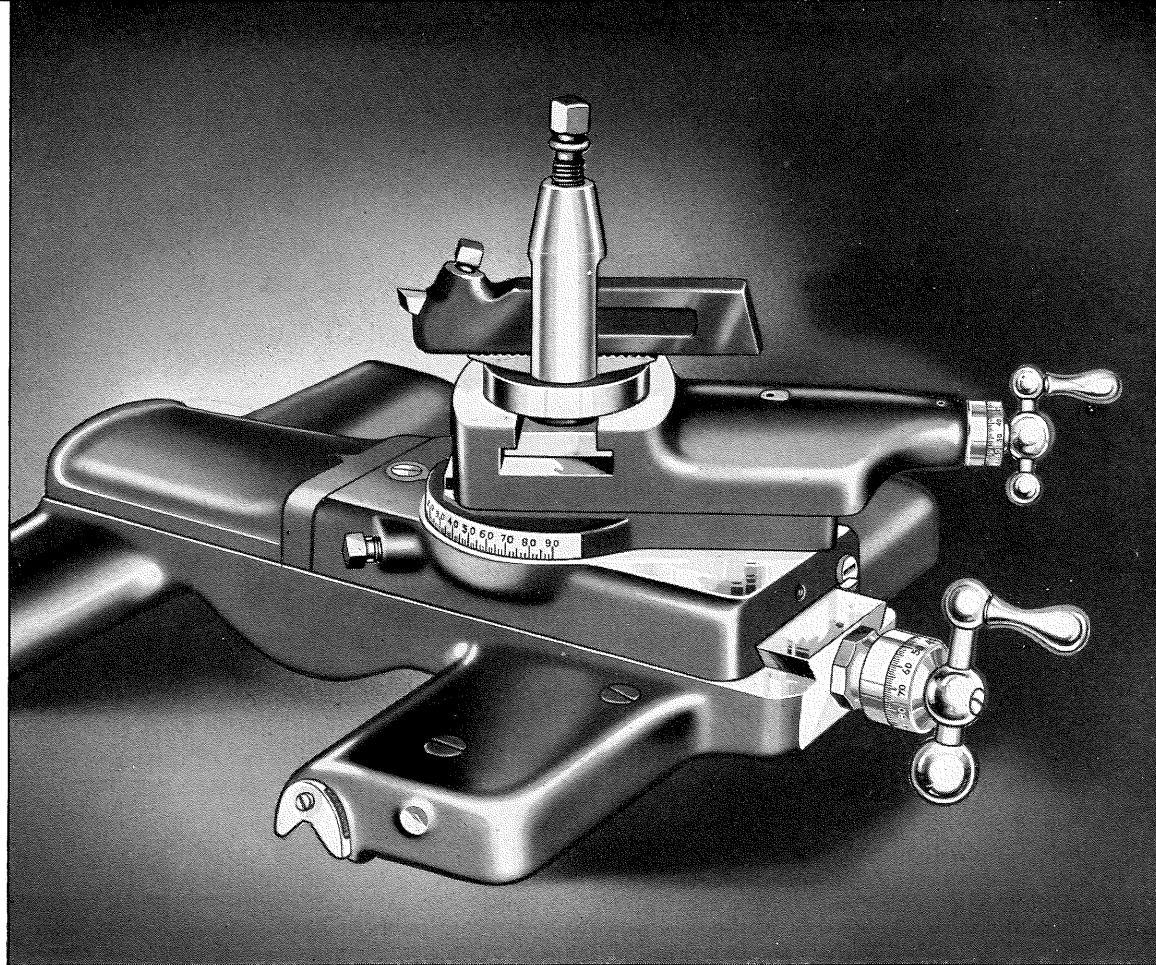


Fig. 20. Improved Saddle and Compound Rest for South Bend Lathes

Improved Series "T" Saddle and Compound Rest

Dovetails Have Adjustable Tapered Gibs

The saddle for Series "T" South Bend Lathes has unusually long bearings carefully hand-scraped to conform with the outer V-ways of the lathe bed. Felt pad wipers are attached to each end of the saddle to clean and oil the V-ways of the bed. The cross slide bridge is wide and deep, providing

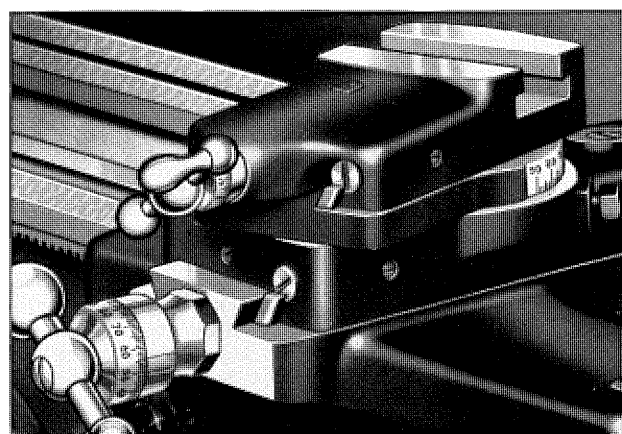


Fig. 21. Close-up Showing Adjustable Tapered Gibs Used on Compound Rest Base and Top Dovetails

a rigid support for the tool rest and the dovetail is hand-scraped square with the V-ways of the saddle.

Both the compound rest base and the compound rest top dovetails are hand-scraped and lapped and have adjustable tapered gibs. The compound rest base is drilled and tapped for the thread cutting stop screw. The compound rest swivel bearing is accurately hand-scraped and fitted. The swivel is graduated 180-degrees and may be set at any angle for turning and boring bevels and tapers.

The cross feed screw and compound rest screw have accurately graduated collars reading in thousandths of an inch. These collars are adjustable and may be set at zero whenever desired. Crank handles for both compound rest screw and cross feed screw are of polished steel.

The tool post, tool post ring, and tool post rocker are made of drop forged steel, heat-treated and hardened. Rocker adjustment is provided for adjusting the cutting edge of tool to desired height.

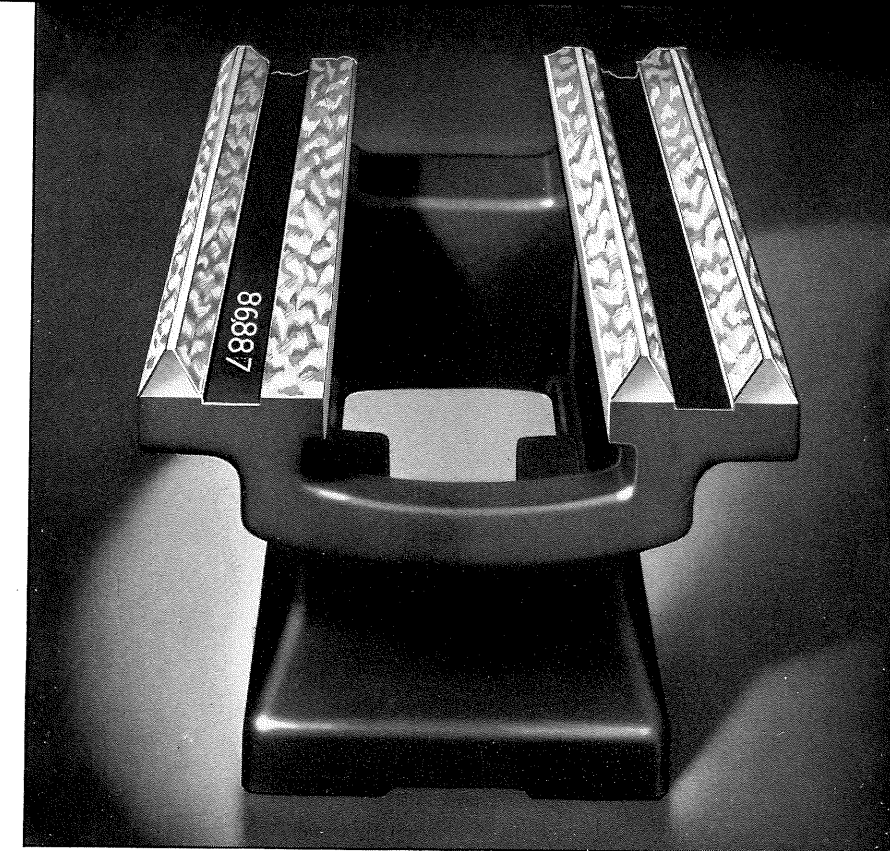


Fig. 22. End View of Lathe Bed

Heavy Semi-Steel Lathe Bed — Series "T"

Has Three V-Ways and One Flat Way

Beds for Series "T" South Bend Lathes are heavily constructed with large box braces cast in at short intervals. The beds are made of a special grade of iron with 50 to 70 per cent steel which makes a hard close-grained casting having unusual strength and long wearing qualities.

Three large V-ways and one flat way align the headstock, carriage, and tailstock on the bed. The

carriage slides on the two outside V-ways and the headstock and tailstock are aligned by the inside V-way. The ways are carefully hand-scraped the entire length of the bed.

Careful inspection is made to be sure that a uniform bearing is obtained the full length of the bed and that all ways are straight and parallel. The serial number is stamped on the bed as shown.

Series "T" Tailstock Has Graduated and Ground Spindle

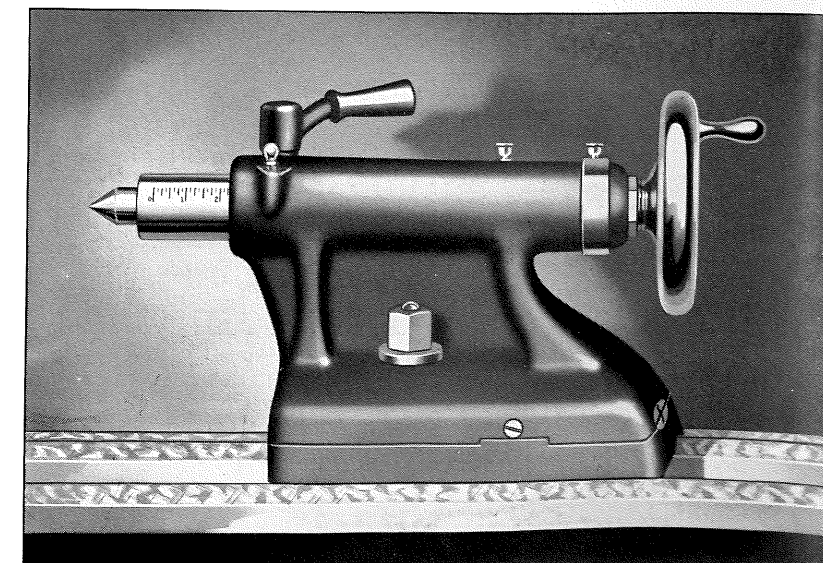
Set-Over for Taper Turning—Self-Ejecting Center

The tailstock for all sizes and types of South Bend Lathes is offset to allow the compound rest to swivel parallel to the bed. A sensitive screw adjustment is provided to set over the tailstock top for taper turning.

The tailstock spindle for all Series "T" lathes is graduated in sixteenths of an inch for drilling to accurate depths. An improved double plug binder securely locks the spindle without altering the alignment of the centers.

The tailstock center is made of tool steel hardened and ground all over, and is self-ejecting. A brass quill and oil well are provided for oiling the center.

Fig. 23. Tailstock Used on South Bend Series "T" Lathes



Specifications of Series "T" 16-inch Precision Lathes

Applying to all 16-inch Lathes Shown on Pages 13 to 19

All types of 16-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings.....	16 $\frac{1}{4}$ "
Swing over saddle with chip guard removed.....	11 $\frac{1}{8}$ "
Swing over saddle with chip guard.....	9 $\frac{3}{8}$ "

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.....	2 to 112 per inch
Standard change gear lathe—47 threads R.H. or L.H.....	2 to 112 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—24 feeds R.H. or L.H.....	.003" to .0208"
Standard change gear lathe—29 feeds R.H. or L.H.....	.0021" to .021"
Cross feeds through friction clutch	
Quick change gear lathe—24 feeds.....	.0011" to .0078"
Standard change gear lathe—29 feeds.....	.0008" to .0078"
Size of lead screw, diameter and threads per inch.....	1 $\frac{1}{8}$ "-6

Headstock

Hole through spindle.....	1 $\frac{3}{8}$ "
Maximum collet capacity.....	$\frac{7}{8}$ "
Size of center, Morse taper.....	No. 3
Spindle nose diameter and threads per inch.....	2 $\frac{3}{4}$ "-6
Width of cone pulley step for belt.....	2 $\frac{1}{4}$ "
R.P.M. of spindle, back gears engaged.....	17, 28, 44, 73
R.P.M. of spindle, direct belt driven.....	138, 223, 353, 587
Large face plate diameter.....	13 $\frac{1}{4}$ "
Small face plate diameter.....	8 $\frac{1}{16}$ "

Compound Rest

Cross slide will travel.....	10 $\frac{1}{2}$ "
Angular hand feed of compound rest top slide.....	3 $\frac{3}{4}$ "

Tool Post

Size of opening for tool holder shank.....	$\frac{5}{8}$ " x 1 $\frac{3}{8}$ "
Size of cutter bits tool holder takes.....	$\frac{3}{8}$ " sq.

Tailstock

Size of Morse taper centers.....	No. 3
Spindle travel.....	5 $\frac{3}{4}$ "
Each graduation on tailstock spindle advances spindle.....	$\frac{1}{16}$ "
Tailstock top will set over for taper turning.....	1"

Motor

Horsepower of standard motor used on 16-inch motor driven lathes.....	1
R.P.M. of standard motor for underneath motor driven lathe.....	1150
R.P.M. of standard motor for pedestal motor driven lathe.....	1725
Number of V-belts used.....	3

Countershaft

Speed in R.P.M. of shaft.....	221
Size of pulleys.....	10" x 3 $\frac{5}{8}$ "

Taper Attachment (telescopic type)

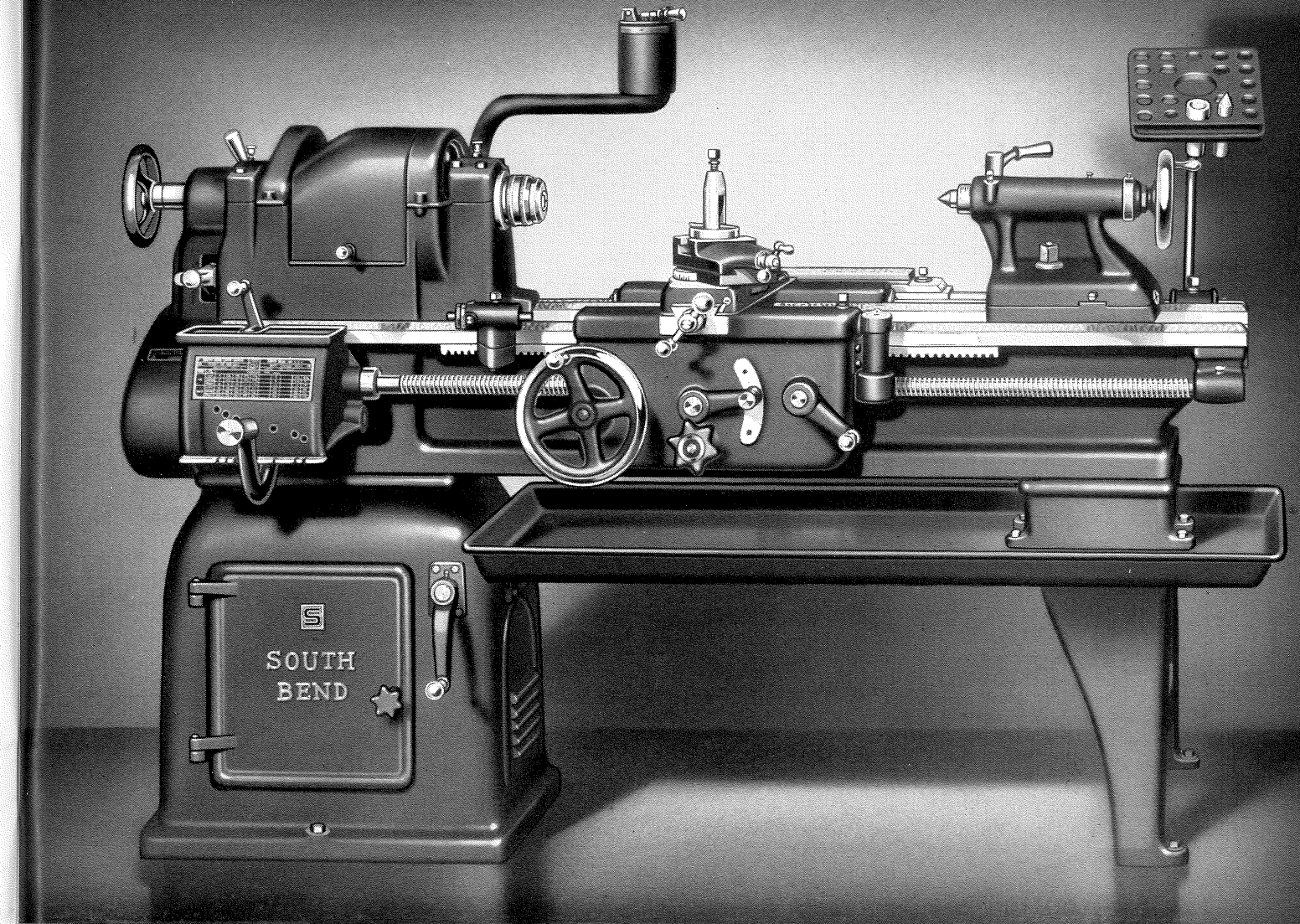
Maximum length turned in one setting.....	11 $\frac{1}{2}$ "
Maximum taper per foot.....	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.

Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	4.0 mm
Cross feed screw pitch.....	3.0 mm
Compound rest feed screw pitch.....	3.0 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 6 to 11



16-inch Tool Room Precision Lathe—Series "T" Underneath Belt Motor Driven Type

The 16-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 12 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth steady pull, entirely free from gear vibration. See page 4.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

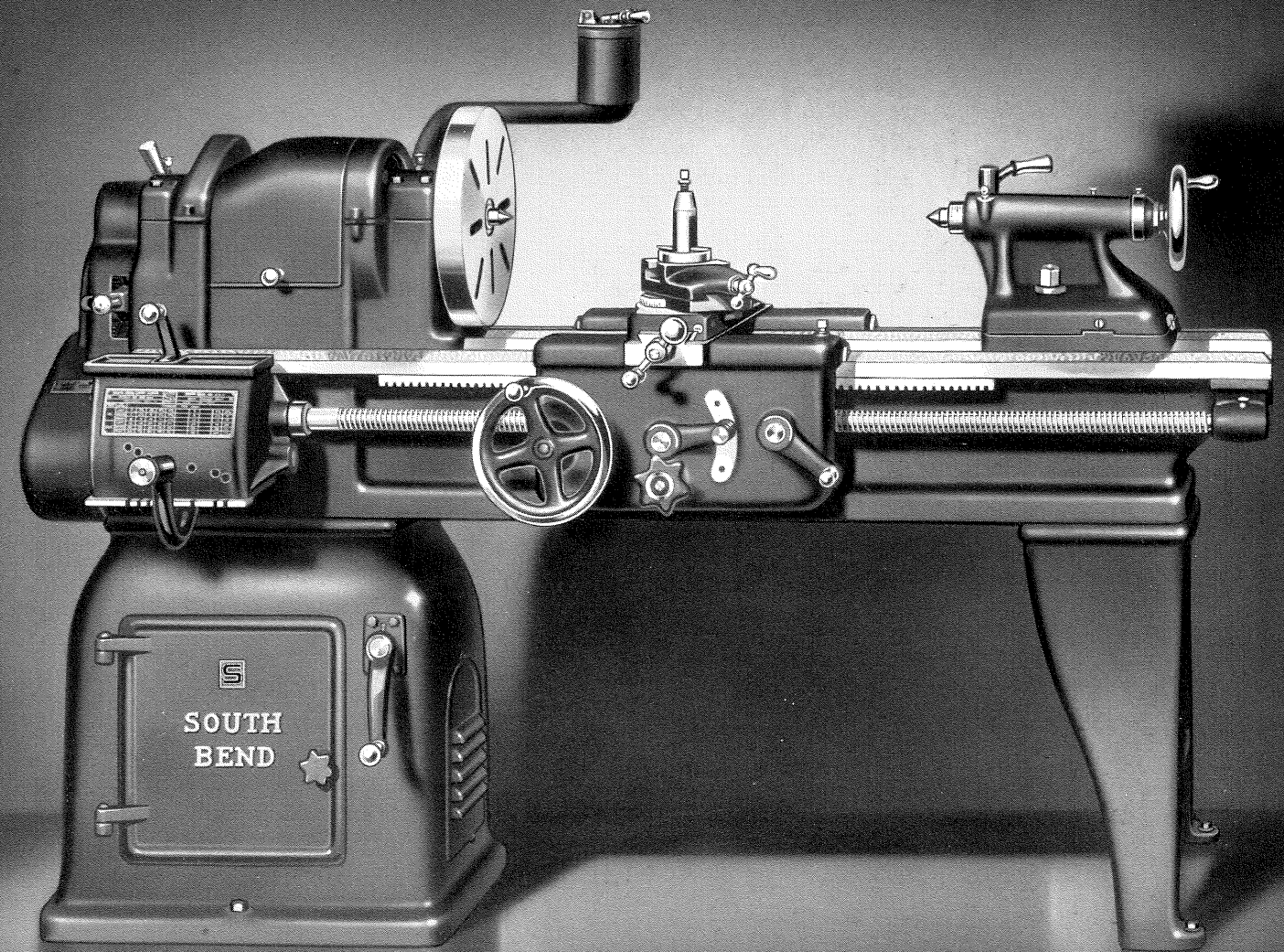
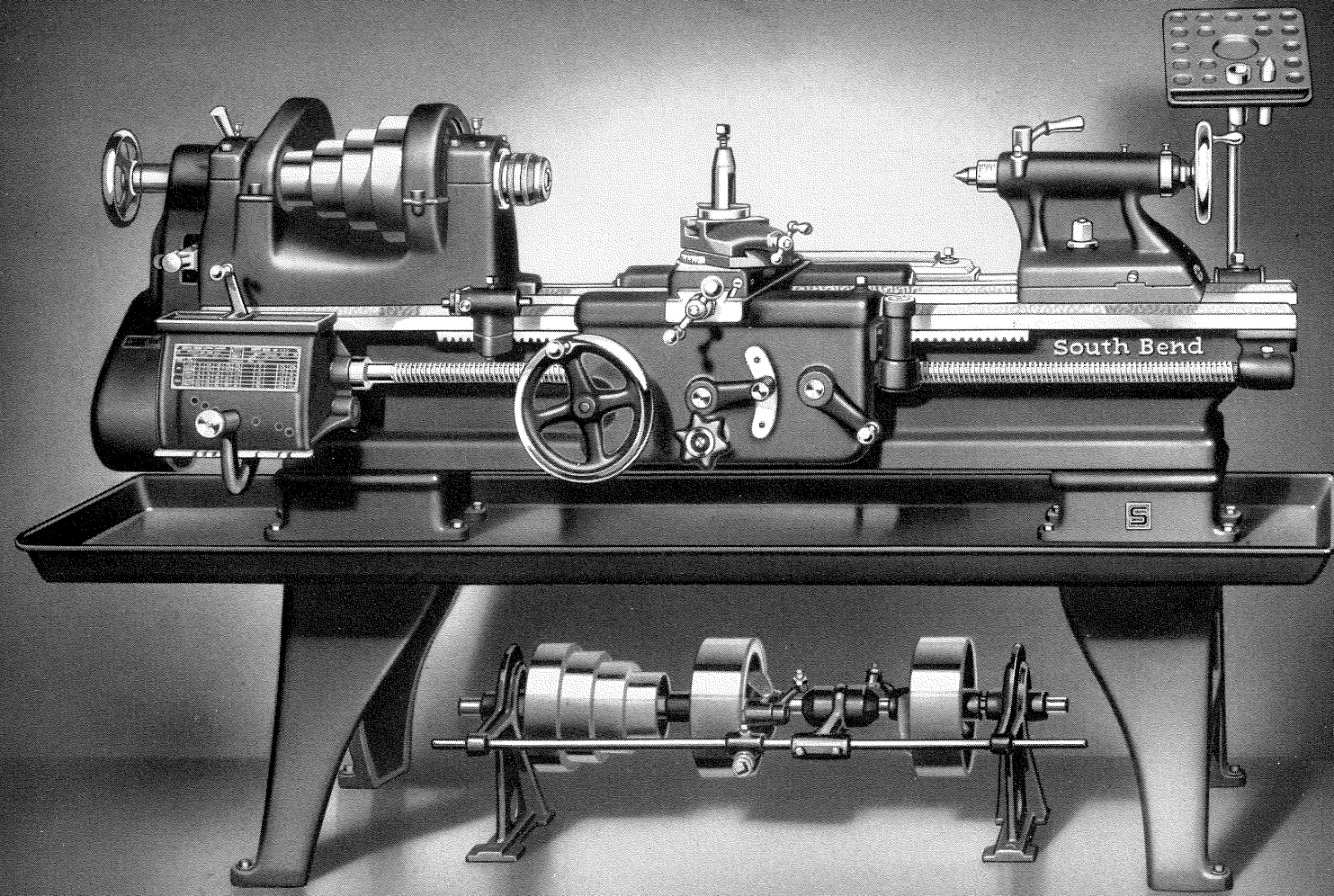
for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price consists of 1 H.P. instant reversing ball bearing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

16-inch Underneath Motor Driven Tool Room Lathes

Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.
Catalog Number.....	8117-C	8117-D	8117-E
Shipping Weight.....	2525 lbs.	2605 lbs.	2685 lbs.
Code Word.....	Balha	Barso	Balib



16-inch Tool Room Precision Lathe—Series "T" Countershaft Driven Type

The 16-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 12 for complete specifications of this lathe.

The 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. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

16-inch Countershaft Driven Tool Room Lathes

Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.
Catalog Number.....	8017-C	8017-D	8017-E
Shipping Weight.....	2125 lbs.	2205 lbs.	2285 lbs.
Code Word.....	Larel	Laboz	Lerem

16-inch Underneath Motor Driven Precision Lathe—Series "T" Quick Change Gear and Standard Change Gear Types

The 16-inch Lathe with underneath belt motor drive is popular for both production operations and tool room work. This lathe is made in the Quick Change Gear Type as shown, also in Standard Change Gear Type. See page 12 for specifications of lathe.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4 for description of motor drive.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price consists of 1 H.P. instant reversing ball bear-

ing motor, drum type reversing switch, wiring for switch and motor, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, No. 3 Morse taper tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe."

Quick Change Gear

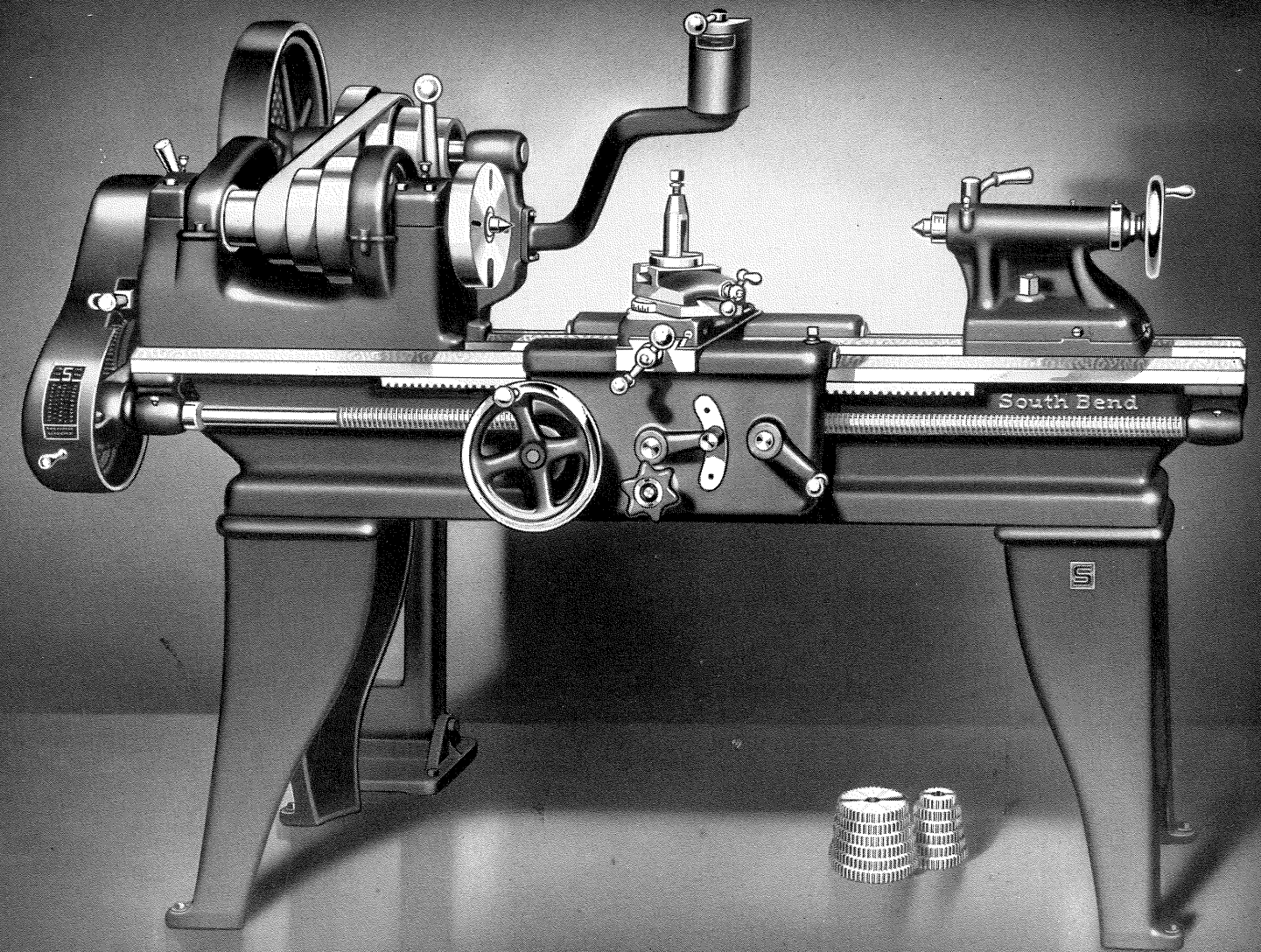
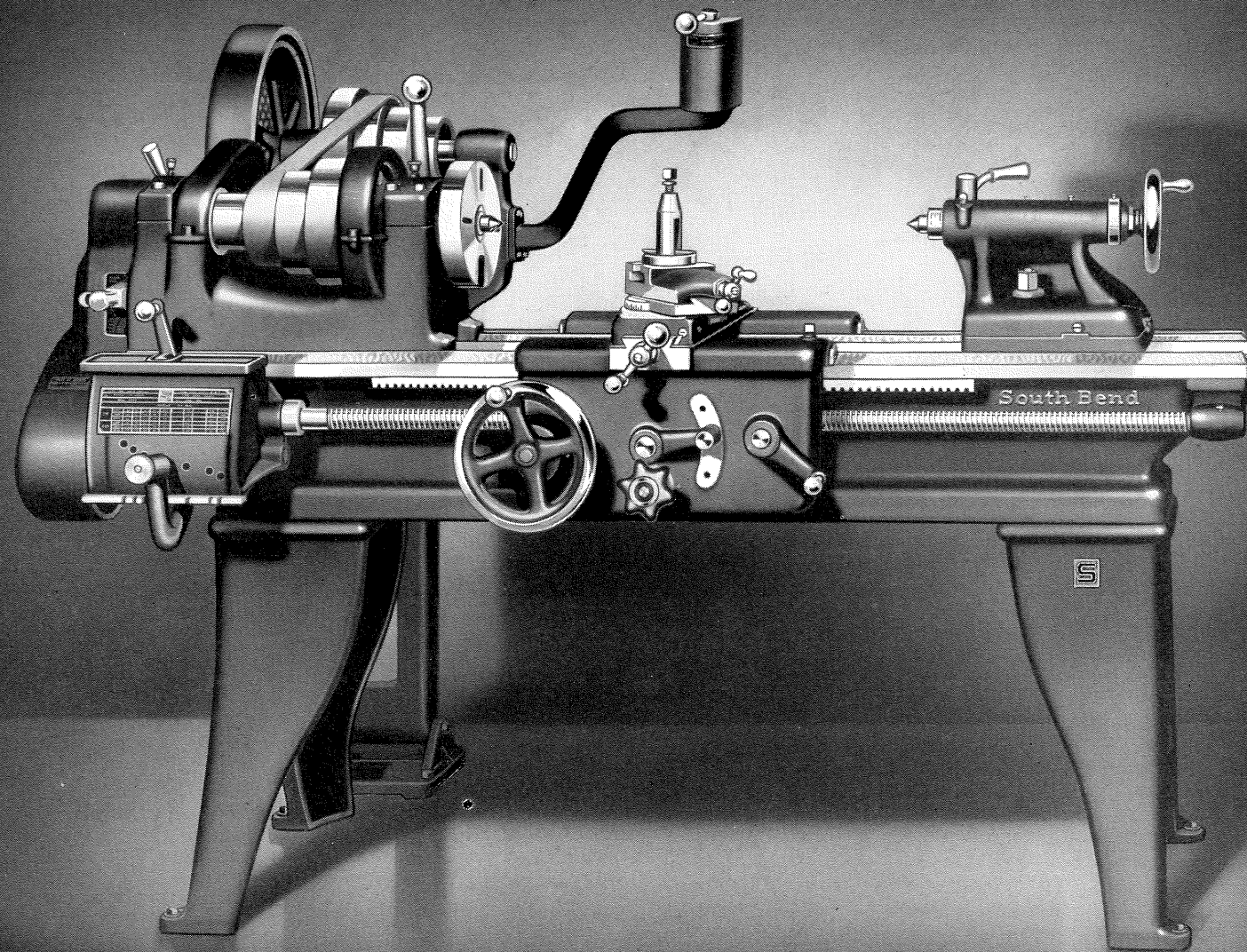
16-inch Underneath Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.	82-in.	106-in.
Catalog Number.....	117-C	117-D	117-E	117-G	117-H
Shipping Weight.....	2300 lbs.	2380 lbs.	2460 lbs.	2620 lbs.	2850 lbs.
Code Word.....	Bapvo	Barve	Baryo	Basoz	Bavco

Standard Change Gear

16-inch Underneath Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.	82-in.	106-in.
Catalog Number.....	123-C	123-D	123-E	123-G	123-H
Shipping Weight.....	2265 lbs.	2345 lbs.	2425 lbs.	2585 lbs.	2815 lbs.
Code Word.....	Babes	Babgu	Babiw	Babma	Babob



16"
LATHES

16-inch Quick Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 16-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 12 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1 H.P. instant reversing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.	82-in.	106-in.
Catalog Number.....	917-C	917-D	917-E	917-G	917-H
Shipping Weight.....	2165 lbs.	2245 lbs.	2325 lbs.	2485 lbs.	2715 lbs.
Code Word.....	Lapin	Lalos	Larag	Lamar	Lanos

16"
LATHES

16-inch Standard Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 16-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 6 for description.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

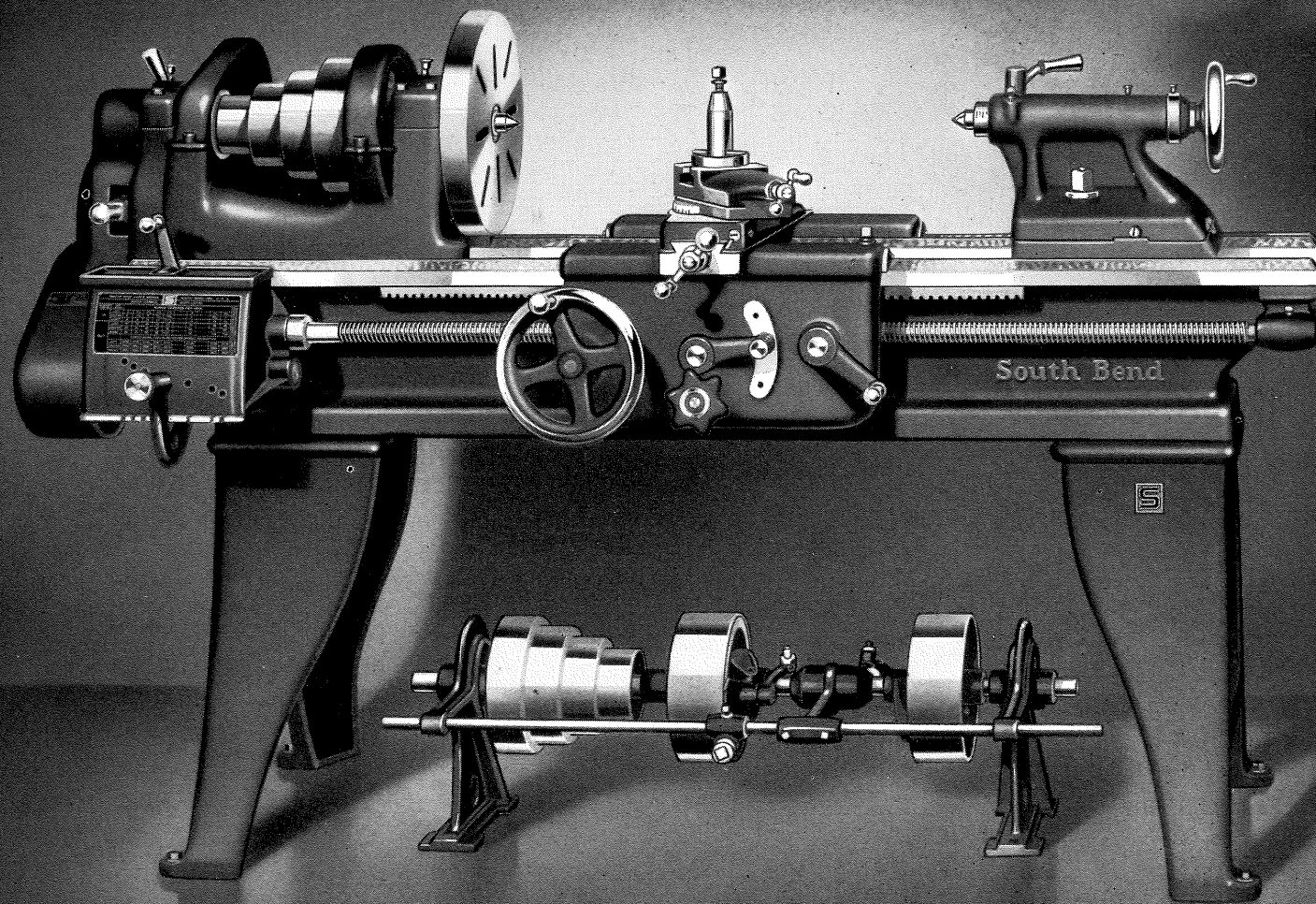
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 6 to 11 for additional features, and page 12 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1 H.P. instant reversing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.	82-in.	106-in.
Catalog Number.....	923-C	923-D	923-E	923-G	923-H
Shipping Weight.....	2130 lbs.	2210 lbs.	2290 lbs.	2450 lbs.	2680 lbs.
Code Word.....	Pirel	Piren	Pabit	Pabog	Pacen



16"
LATHES

16-inch Quick Change Gear Precision Lathe—Series "T" Countershaft Driven Type

The 16-inch Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants.

The 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. Eight spindle speeds forward and eight in reverse are available.

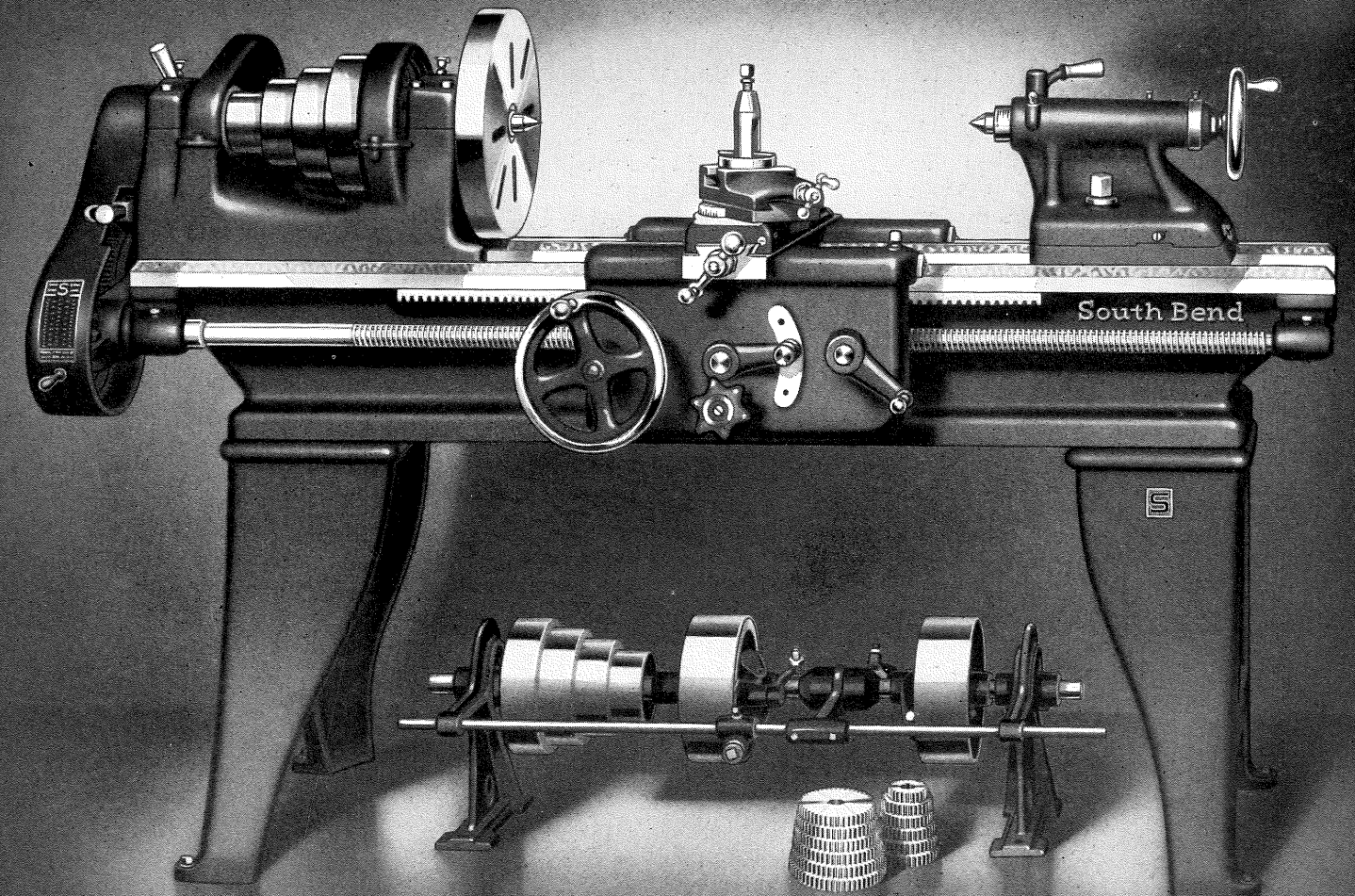
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 12 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.	82-in.	106-in.
Catalog Number.....	17-C	17-D	17-E	17-G	17-H
Shipping Weight.....	1875 lbs.	1955 lbs.	2035 lbs.	2195 lbs.	2425 lbs.
Code Word.....	Alcis	Alcot	Algat	Algoy	Alguz



16"
LATHES

16-inch Standard Change Gear Precision Lathe—Series "T" Countershaft Driven Type

The 16-inch Standard Change Gear Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for both production operations and general machine work.

The 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. Eight spindle speeds forward and eight in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 6 to 11 for additional features, and page 12 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers.....	34-in.	46-in.	58-in.	82-in.	106-in.
Catalog Number.....	23-C	23-D	23-E	23-G	23-H
Shipping Weight.....	1840 lbs.	1920 lbs.	2000 lbs.	2160 lbs.	2390 lbs.
Code Word.....	Annuc	Ampay	Andun	Anler	Anlot

Specifications of Series "T" 14½-inch Precision Lathes

Applying to all 14½-inch Lathes Shown on Pages 21 to 27

All types of 14½-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings.....	14 5/8"
Swing over saddle with chip guard removed.....	10 1/4"
Swing over saddle with chip guard.....	8 3/4"

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.....	2 to 112 per inch
Standard change gear lathe—47 threads R.H. or L.H.....	2 to 112 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—24 feeds R.H. or L.H.....	.003" to .0208"
Standard change gear lathe—29 feeds R.H. or L.H.....	.0021" to .021"
Cross feeds through friction clutch	
Quick change gear lathe—24 feeds.....	.0011" to .0078"
Standard change gear lathe—29 feeds.....	.0008" to .0078"
Size of lead screw, diameter and threads per inch.....	1 1/8"-6

Headstock

Hole through spindle.....	1 1/8"
Maximum collet capacity.....	3/4"
Size of Center, Morse taper.....	No. 3
Spindle nose diameter and threads per inch.....	2 1/4"-6
Width of cone pulley step for belt.....	2"
R.P.M. of spindle, back gears engaged.....	22, 37, 59, 99
R.P.M. of spindle, direct belt driven.....	149, 247, 396, 657
Large face plate diameter.....	12"
Small face plate diameter.....	7 3/8"

Compound Rest

Cross slide will travel.....	10"
Angular hand feed of compound rest top slide.....	3 1/8"

Tool Post

Size of opening for tool holder shank.....	1/2" x 1 1/8"
Size of cutter bits tool holder takes.....	5/16" sq.

Tailstock

Size of Morse taper centers.....	No. 3
Spindle travel.....	5 1/4"
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	15/16"

Motor

Horsepower of standard motor used on 14½-inch motor driven lathes.....	1
R.P.M. of standard motor.....	1725
Number of V-belts used.....	3

Countershaft

Speed in R.P.M. of shaft.....	274
Size of pulleys.....	10" x 3 5/8"

Taper Attachment (telescopic type)

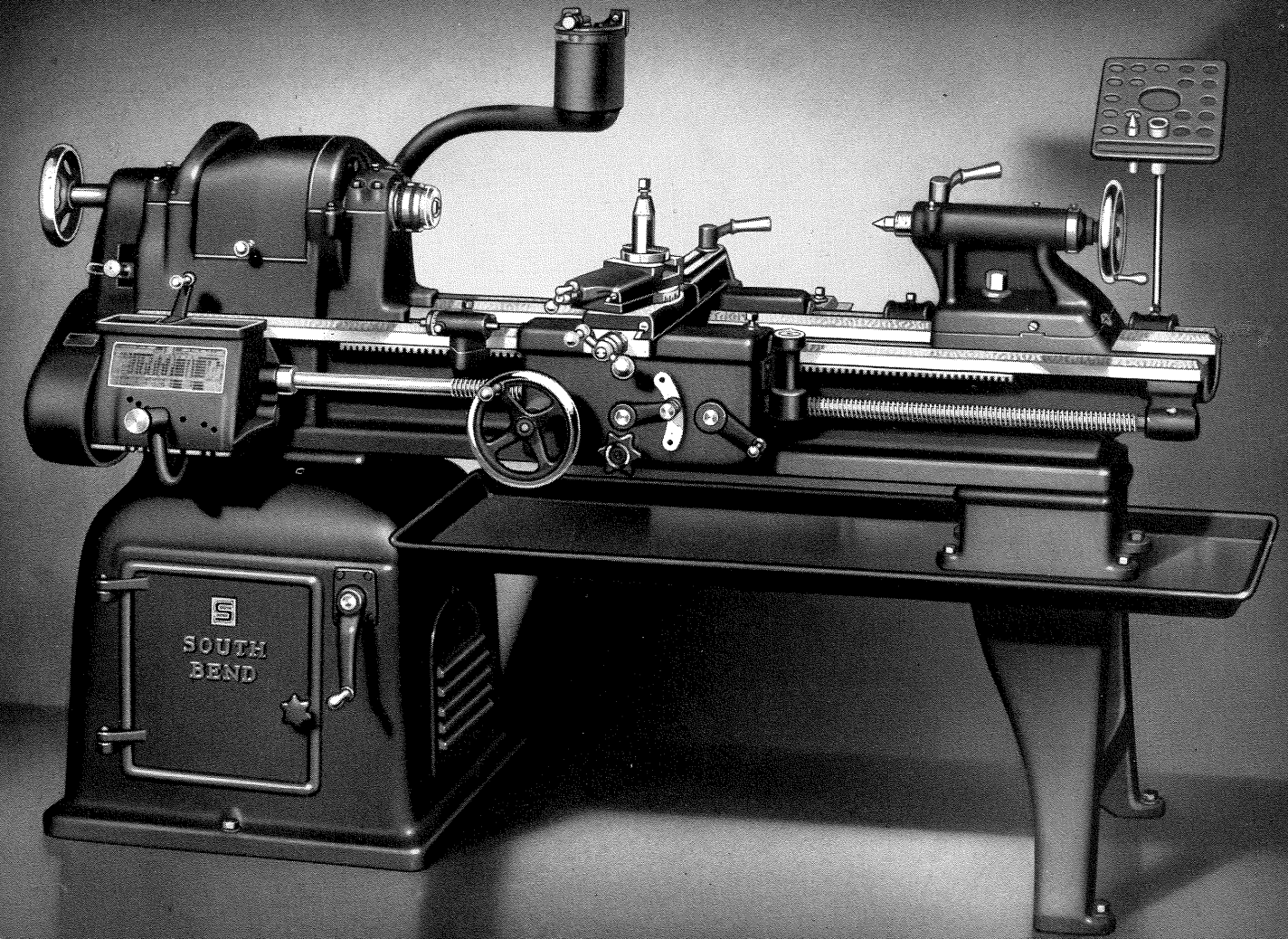
Maximum length turned in one setting.....	9 1/4"
Maximum taper per foot.....	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.

Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	4.0 mm
Cross feed screw pitch.....	3.0 mm
Compound rest feed screw pitch.....	3.0 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 6 to 11



14½-inch Tool Room Precision Lathe—Series "T" Underneath Belt Motor Driven Type

The 14½-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 20 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

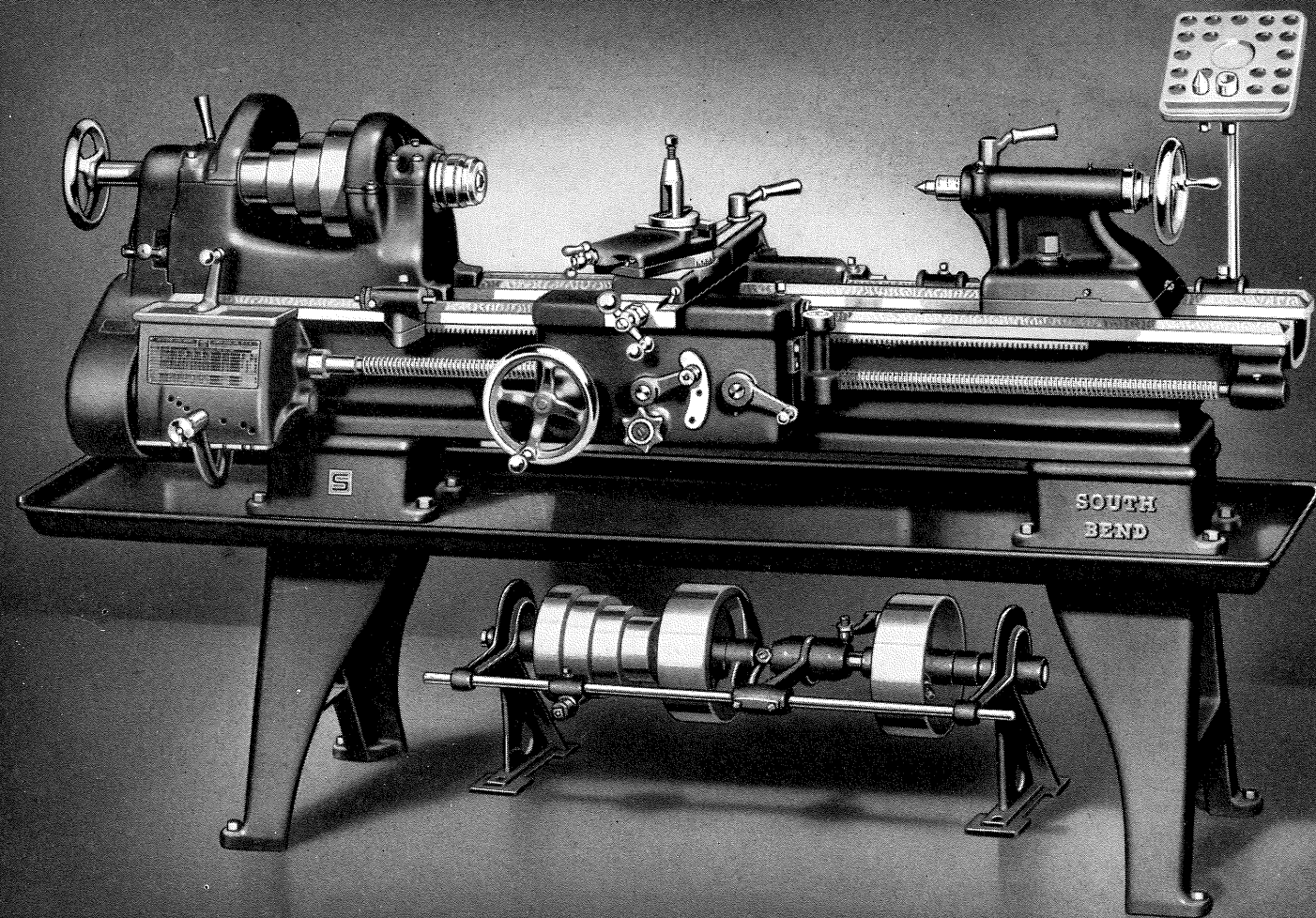
for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price consists of 1 H.P. instant reversing ball bearing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

14½-inch Underneath Motor Driven Tool Room Lathes

	6-ft.	7-ft.	8-ft.
Distance Between Centers.....	36 1/2-in.	48 1/2-in.	60 1/2-in.
Catalog Number.....	8183-C	8183-D	8183-E
Shipping Weight.....	2255 lbs.	2330 lbs.	2405 lbs.
Code Word.....	Boces	Bociw	Bocuh



14 1/2-inch Tool Room Precision Lathe—Series "T" Countershaft Driven Type

The 14 1/2-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 20 for complete specifications of this lathe.

The 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. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

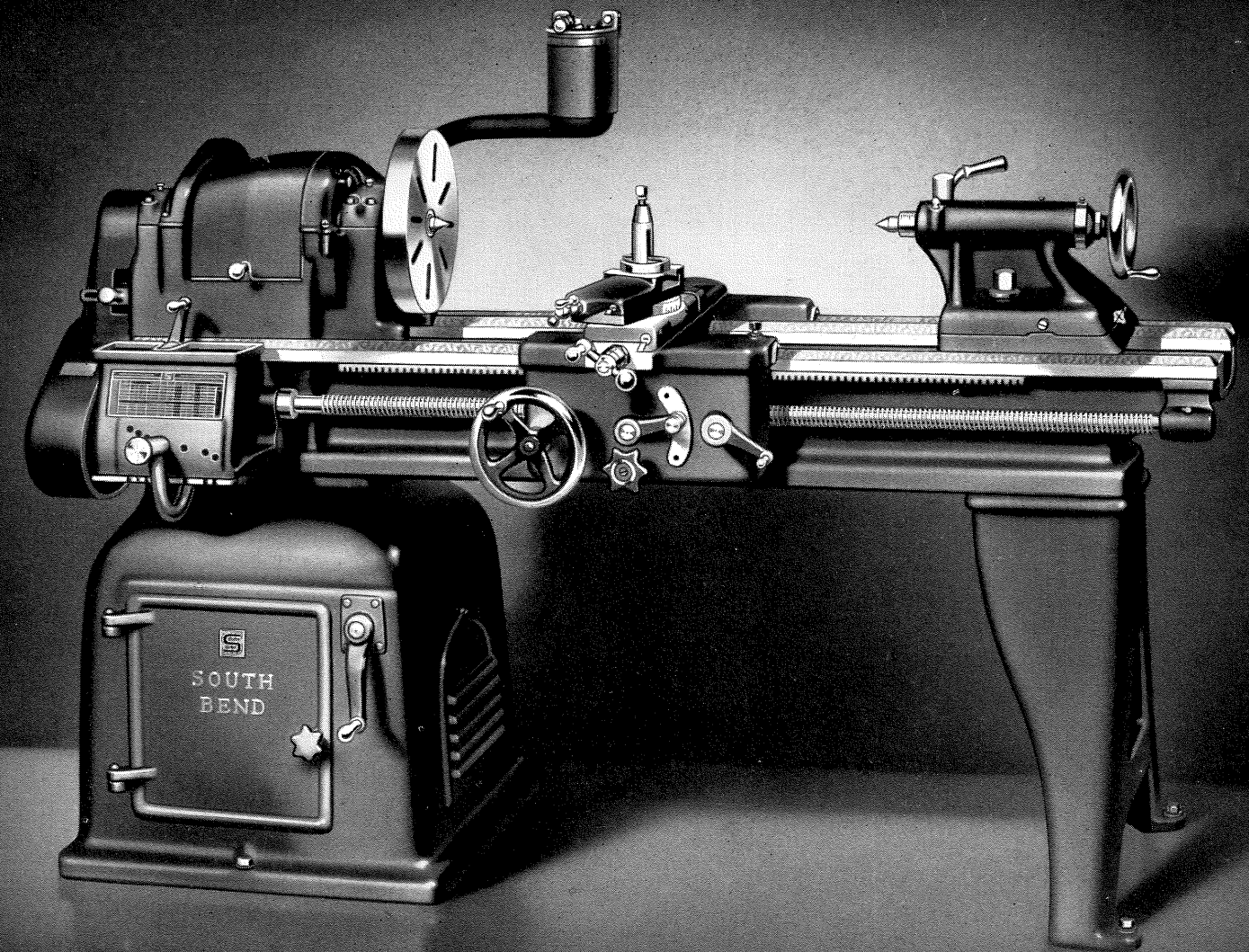
for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

14 1/2-inch Countershaft Driven Tool Room Lathes

Bed Length	6-ft.	7-ft.	8-ft.
Distance Between Centers.....	36 1/2-in.	48 1/2-in.	60 1/2-in.
Catalog Number.....	8083-C	8083-D	8083-E
Shipping Weight.....	1900 lbs.	1980 lbs.	2060 lbs.
Code Word.....	Tekoz	Tekub	Teluc



14 1/2-inch Underneath Motor Driven Precision Lathe—Series "T" Quick Change Gear and Standard Change Gear Types

The 14 1/2-inch Lathe with underneath belt motor drive is popular for both production operations and tool room work. This lathe is made in the Quick Change Gear Type as shown, also in Standard Change Gear Type. See page 20 for specifications of lathe.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4 for description of motor drive.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price consists of 1 H.P. instant reversing ball bear-

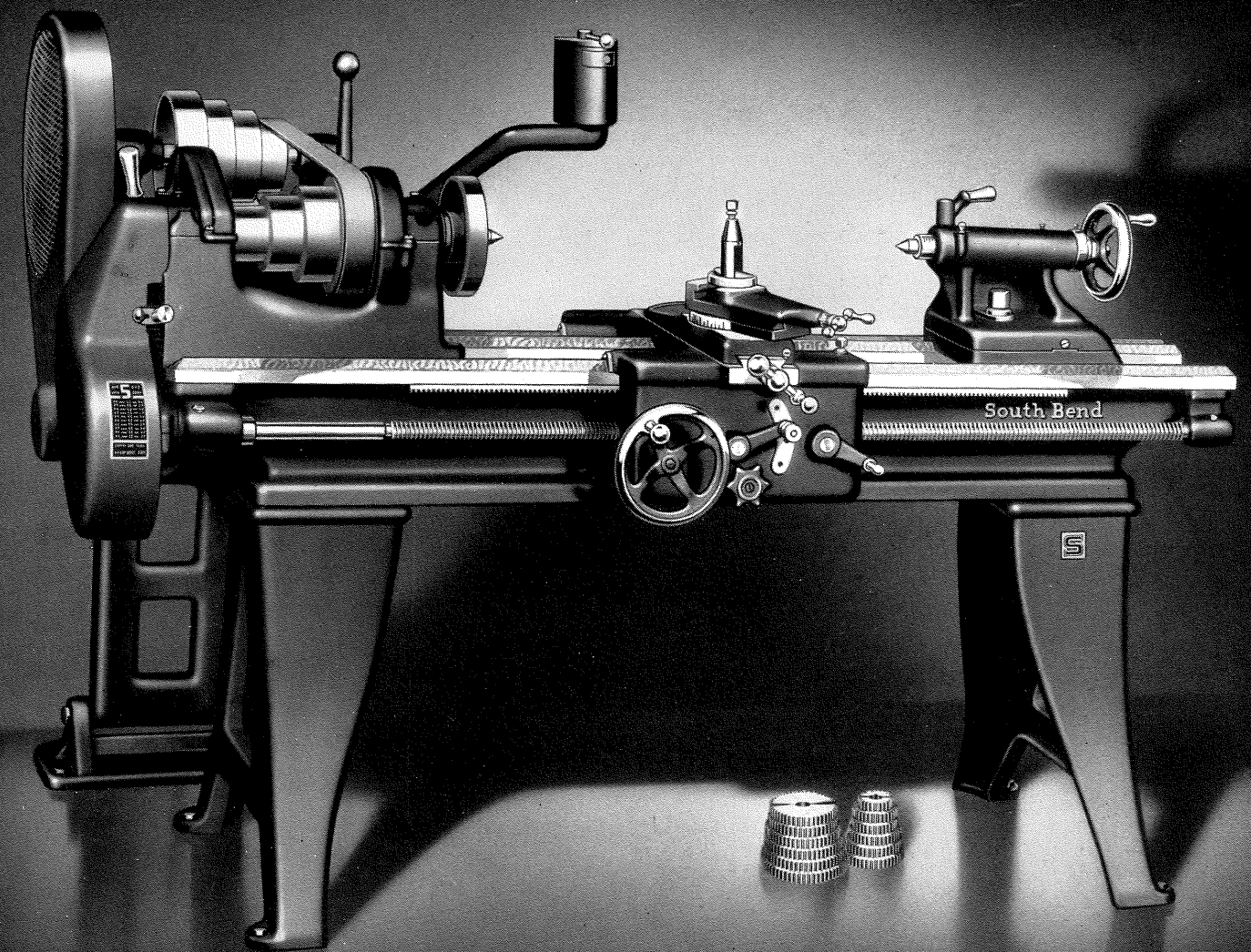
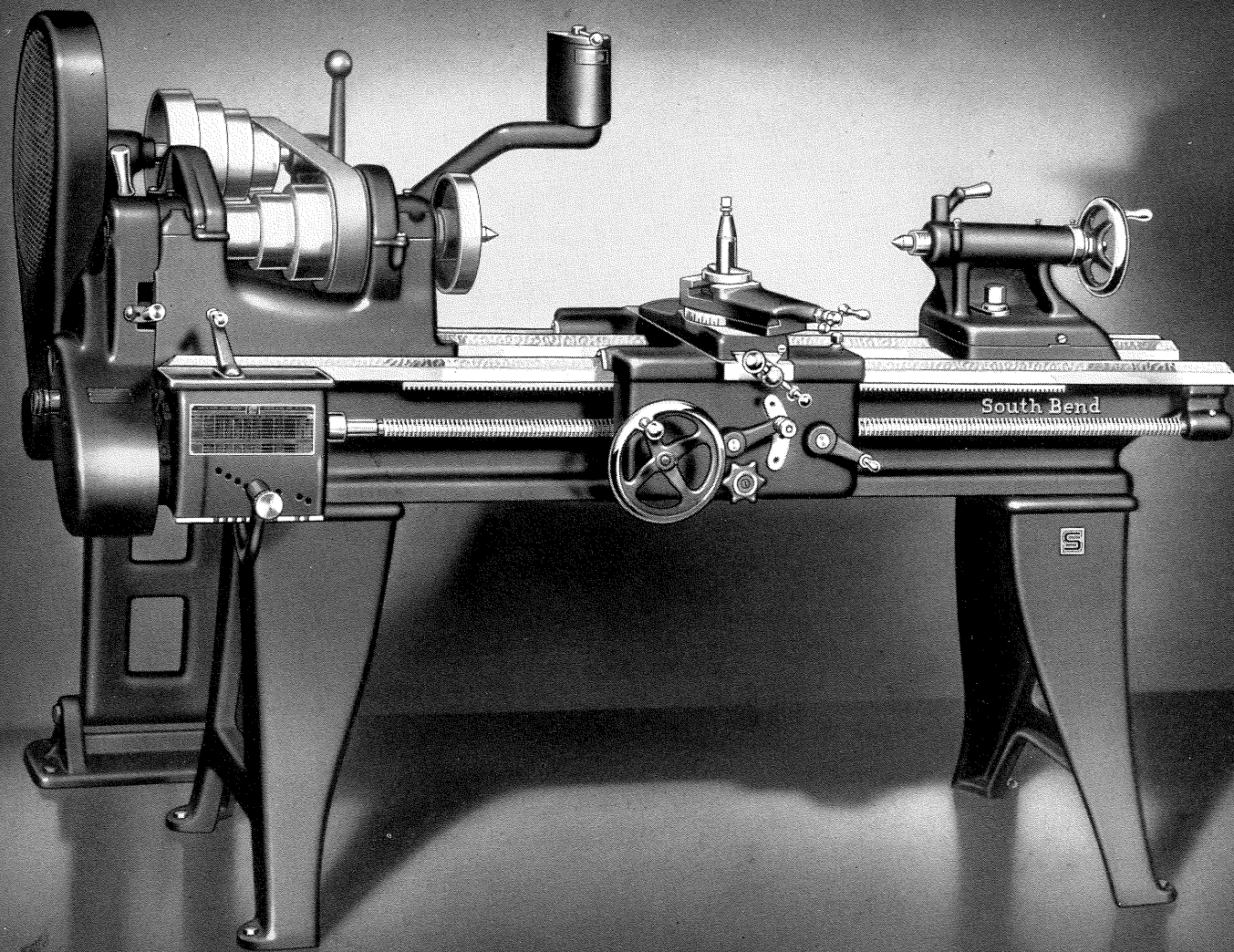
ing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe."

Quick Change Gear
14 1/2-inch Underneath Motor Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers.....	24 1/2-in.	36 1/2-in.	48 1/2-in.	60 1/2-in.	84 1/2-in.
Catalog Number.....	183-B	183-C	183-D	183-F	183-G
Shipping Weight.....	1995 lbs.	2070 lbs.	2145 lbs.	2225 lbs.	2390 lbs.
Code Word.....	Bediv	Bedom	Bulut	Buman	Bumer

Standard Change Gear
14 1/2-inch Underneath Motor Driven Lathes

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers.....	24 1/2-in.	36 1/2-in.	48 1/2-in.	60 1/2-in.	84 1/2-in.
Catalog Number.....	178-B	178-C	178-D	178-E	178-G
Shipping Weight.....	1970 lbs.	2045 lbs.	2120 lbs.	2200 lbs.	2365 lbs.
Code Word.....	Bilal	Bilit	Biluf	Bizof	Bizas



14½-inch Quick Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 14½-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 20 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1 H.P. instant reversing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers	24½-in.	36½-in.	48½-in.	60½-in.	84½-in.
Catalog Number	983-B	983-C	983-D	983-E	983-G
Shipping Weight	1735 lbs.	1810 lbs.	1885 lbs.	1965 lbs.	2130 lbs.
Code Word	Golis	Goly	Goxuk	Gozar	Gozev

14½-inch Standard Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 14½-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 6 for description.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

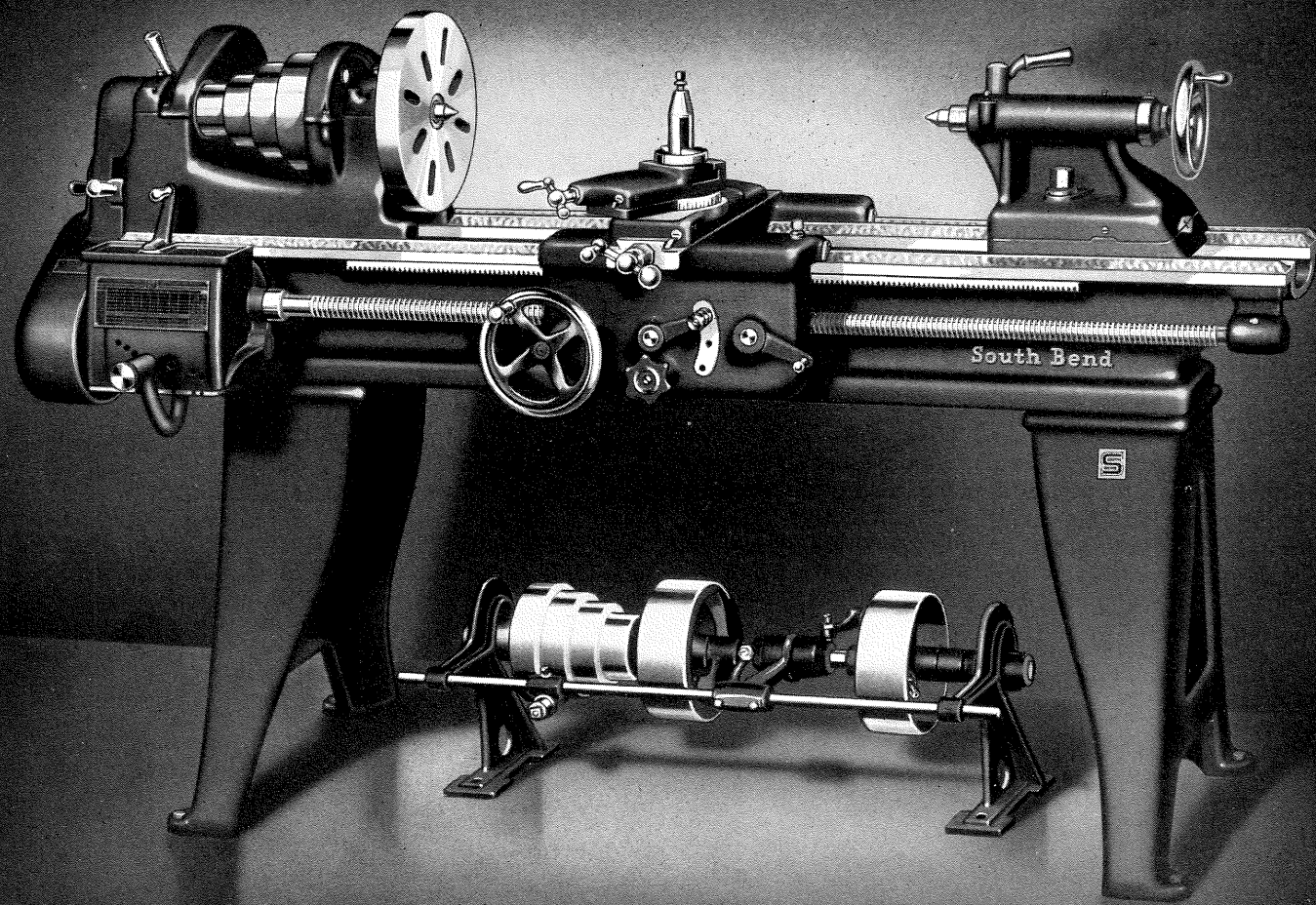
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer

graduated collars, and semi-steel lathe bed. See pages 6 to 11 for additional features, and page 20 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1 H.P. instant reversing motor, reversing switch, wiring, 3 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers	24½-in.	36½-in.	48½-in.	60½-in.	84½-in.
Catalog Number	978-B	978-C	978-D	978-E	978-G
Shipping Weight	1710 lbs.	1785 lbs.	1860 lbs.	1940 lbs.	2105 lbs.
Code Word	Gigop	Golah	Gokol	Gokur	Golak



14 1/2-inch Quick Change Gear Precision Lathe—Series "T" Countershaft Driven Type

14 1/2"
LATHES

The 14 1/2-inch Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants.

The 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. Eight spindle speeds forward and eight in reverse are available.

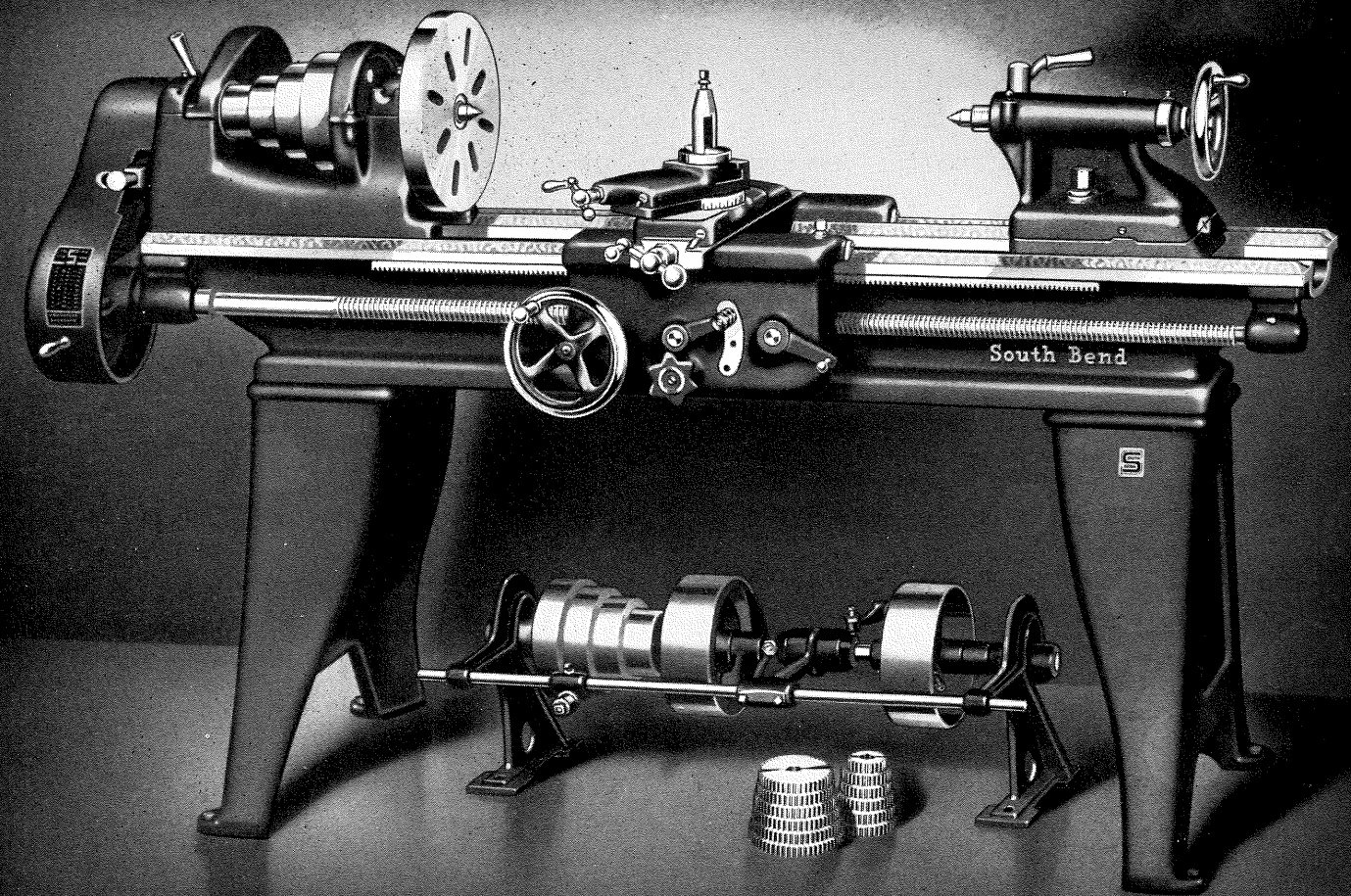
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 20 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers....	24 1/2-in.	36 1/2-in.	48 1/2-in.	60 1/2-in.	84 1/2-in.
Catalog Number.....	83-B	83-C	83-D	83-E	83-G
Shipping Weight.....	1575 lbs.	1650 lbs.	1725 lbs.	1805 lbs.	1970 lbs.
Code Word.....	Tapub	Tatec	Tatog	Tavac	Tawad



14 1/2-inch Standard Change Gear Precision Lathe—Series "T" Countershaft Driven Type

14 1/2"
LATHES

The 14 1/2-inch Standard Change Gear Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for both production operations and general machine work.

The 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. Eight spindle speeds forward and eight in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 6 to 11 for additional features, and page 20 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	5-ft.	6-ft.	7-ft.	8-ft.	10-ft.
Distance Between Centers....	24 1/2-in.	36 1/2-in.	48 1/2-in.	60 1/2-in.	84 1/2-in.
Catalog Number.....	78-B	78-C	78-D	78-E	78-G
Shipping Weight.....	1550 lbs.	1625 lbs.	1700 lbs.	1780 lbs.	1945 lbs.
Code Word.....	Tajos	Tamiv	Tamux	Tancy	Tapoz

Specifications of Series "T" 13-inch Precision Lathes

Applying to all 13-inch Lathes Shown on Pages 29 to 35

All types of 13-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings.....	13 $\frac{1}{8}$ "
Swing over saddle with chip guard removed.....	8 $\frac{3}{4}$ "
Swing over saddle with chip guard.....	7 $\frac{3}{4}$ "

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.....	2 to 112 per inch
Standard change gear lathe—47 threads R.H. or L.H.....	2 to 112 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—24 feeds R.H. or L.H.....	.003" to .0208"
Standard change gear lathe—29 feeds R.H. or L.H.....	.0021" to .021"
Cross feeds through friction clutch	
Quick change gear lathe—24 feeds.....	.0011" to .0078"
Standard change gear lathe—29 feeds.....	.0008" to .0078"
Size of lead screw, diameter and threads per inch.....	1"-6

Headstock

Hole through spindle.....	1"
Maximum collet capacity.....	$\frac{5}{8}$ "
Size of Center, Morse taper.....	No. 3
Spindle nose diameter and threads per inch.....	1 $\frac{7}{8}$ "-8
Width of cone pulley step for belt.....	1 $\frac{3}{4}$ "
R.P.M. of spindle, back gears engaged.....	24, 38, 58, 92
R.P.M. of spindle, direct belt driven.....	173, 270, 410, 646
Large face plate diameter.....	10 $\frac{3}{4}$ "
Small face plate diameter.....	6 $\frac{5}{8}$ "

Compound Rest

Cross slide will travel.....	8 $\frac{1}{8}$ "
Angular hand feed of compound rest top slide.....	3 $\frac{1}{8}$ "

Tool Post

Size of opening for tool holder shank.....	$\frac{1}{2}$ " x 1 $\frac{1}{8}$ "
Size of cutter bits tool holder takes.....	$\frac{5}{16}$ " sq.

Tailstock

Size of Morse taper centers.....	No. 3
Spindle travel.....	4 $\frac{1}{4}$ "
Each graduation on tailstock spindle advances spindle.....	$\frac{1}{16}$ "
Tailstock top will set over for taper turning.....	15 $\frac{1}{16}$ "

Motor

Horsepower of standard motor used on 13-inch motor driven lathes.....	$\frac{3}{4}$
R.P.M. of standard motor.....	1725
Number of V-belts used.....	2

Countershaft

Speed in R.P.M. of shaft.....	267
Size of pulleys.....	8" x 2 $\frac{3}{8}$ "

Taper Attachment (telescopic type)

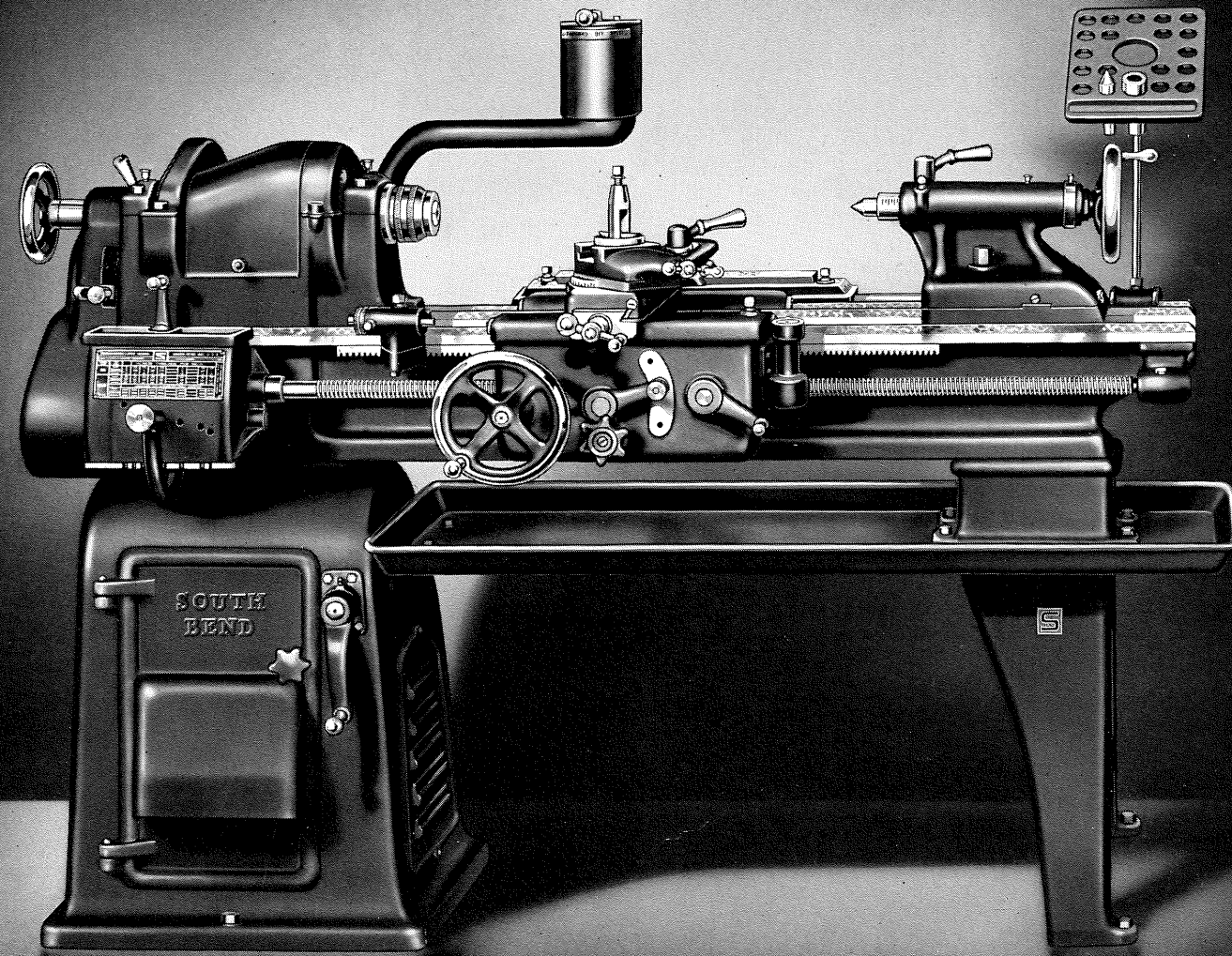
Maximum length turned in one setting.....	9 $\frac{1}{4}$ "
Maximum taper per foot.....	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.

Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	4.0 mm
Cross feed screw pitch.....	3.0 mm
Compound rest feed screw pitch.....	3.0 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 6 to 11



13-inch Tool Room Precision Lathe—Series "T" Underneath Belt Motor Driven Type

The 13-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 28 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

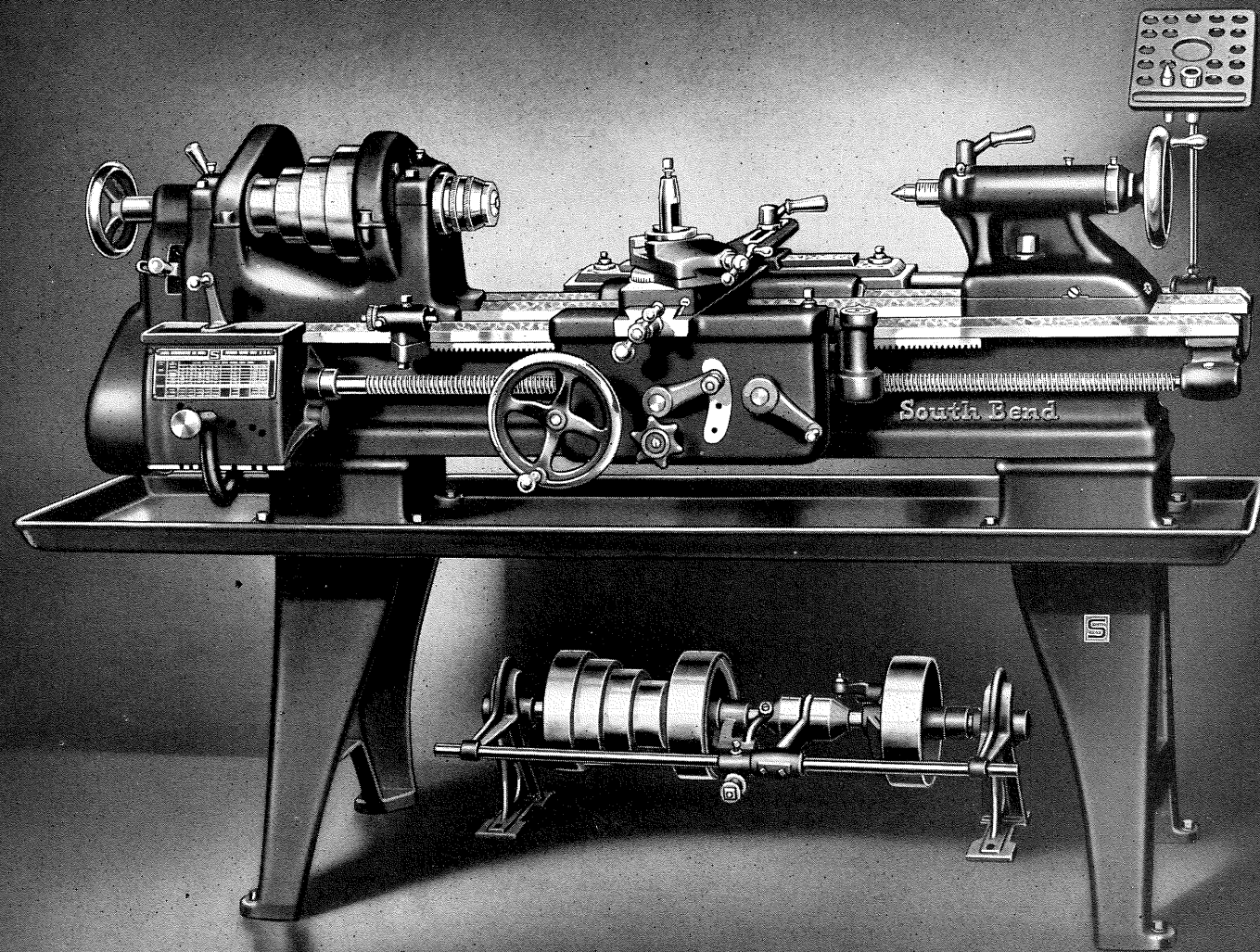
for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price consists of $\frac{3}{4}$ H.P. instant reversing ball bearing motor, reversing switch, wiring, 2 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

13-inch Underneath Motor Driven Tool Room Lathes

Bed Length	5-ft.	6-ft.	7-ft.
Distance Between Centers.....	28-in.	40-in.	52-in.
Catalog Number.....	8113-B	8113-C	8113-D
Shipping Weight.....	1665 lbs.	1715 lbs.	1770 lbs.
Code Word.....	Balbu	Balex	Bapid



13-inch Tool Room Precision Lathe—Series "T" Countershaft Driven Type

The 13-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 28 for complete specifications of this lathe.

The 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. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

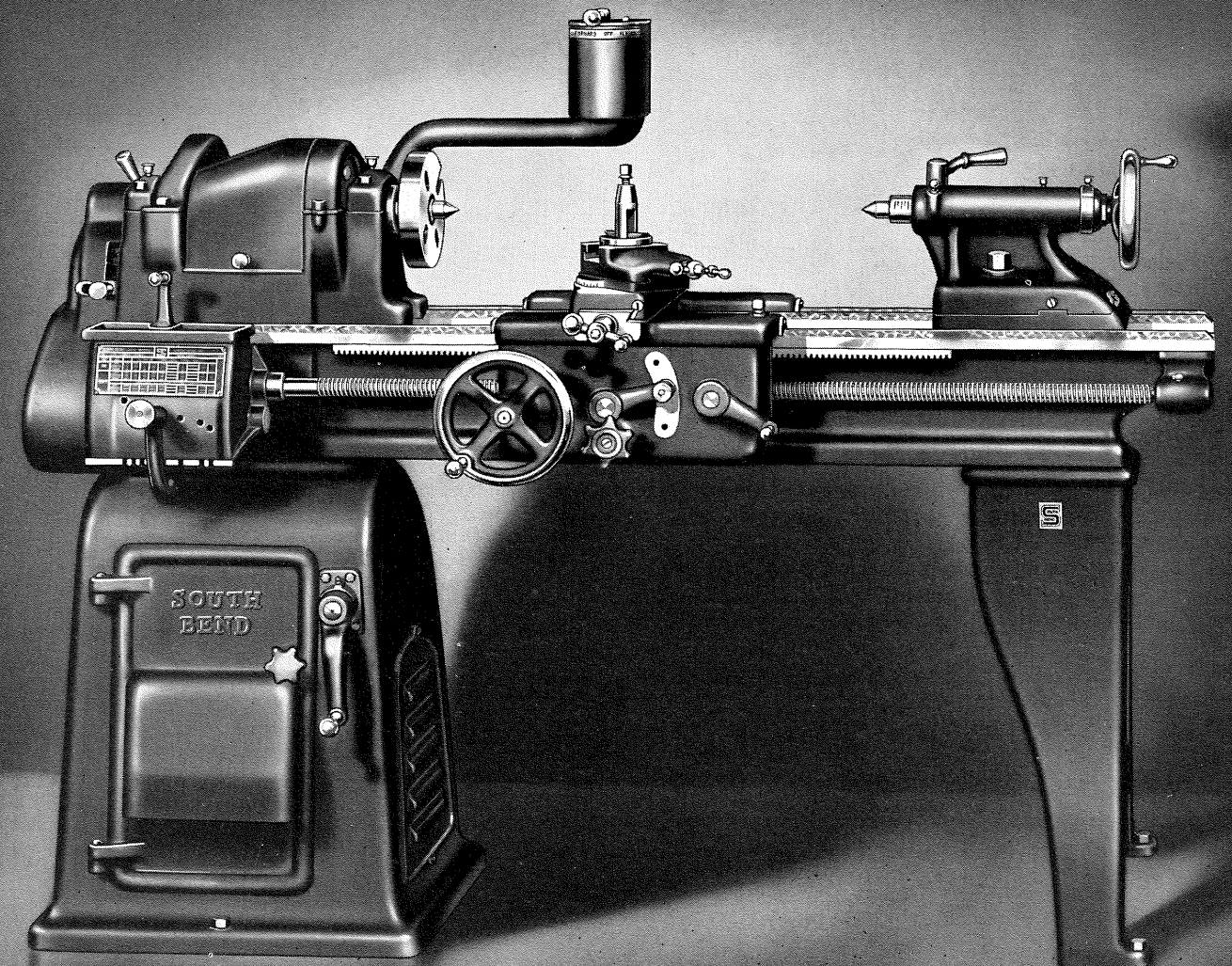
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plans, and book "How to Run a Lathe."

13-inch Countershaft Driven Tool Room Lathes			
Bed Length	5-ft.	6-ft.	7-ft.
Distance Between Centers	28-in.	40-in.	52-in.
Catalog Number	8013-B	8013-C	8013-D
Shipping Weight	1290 lbs.	1340 lbs.	1395 lbs.
Code Word	Arnun	Artut	Asynh



13-inch Underneath Motor Driven Precision Lathe—Series "T" Quick Change Gear and Standard Change Gear Types

The 13-inch Lathe with underneath belt motor drive is popular for both production operations and tool room work. This lathe is made in the Quick Change Gear Type as shown, also in Standard Change Gear Type. See page 28 for specifications of lathe.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4 for description of motor drive.

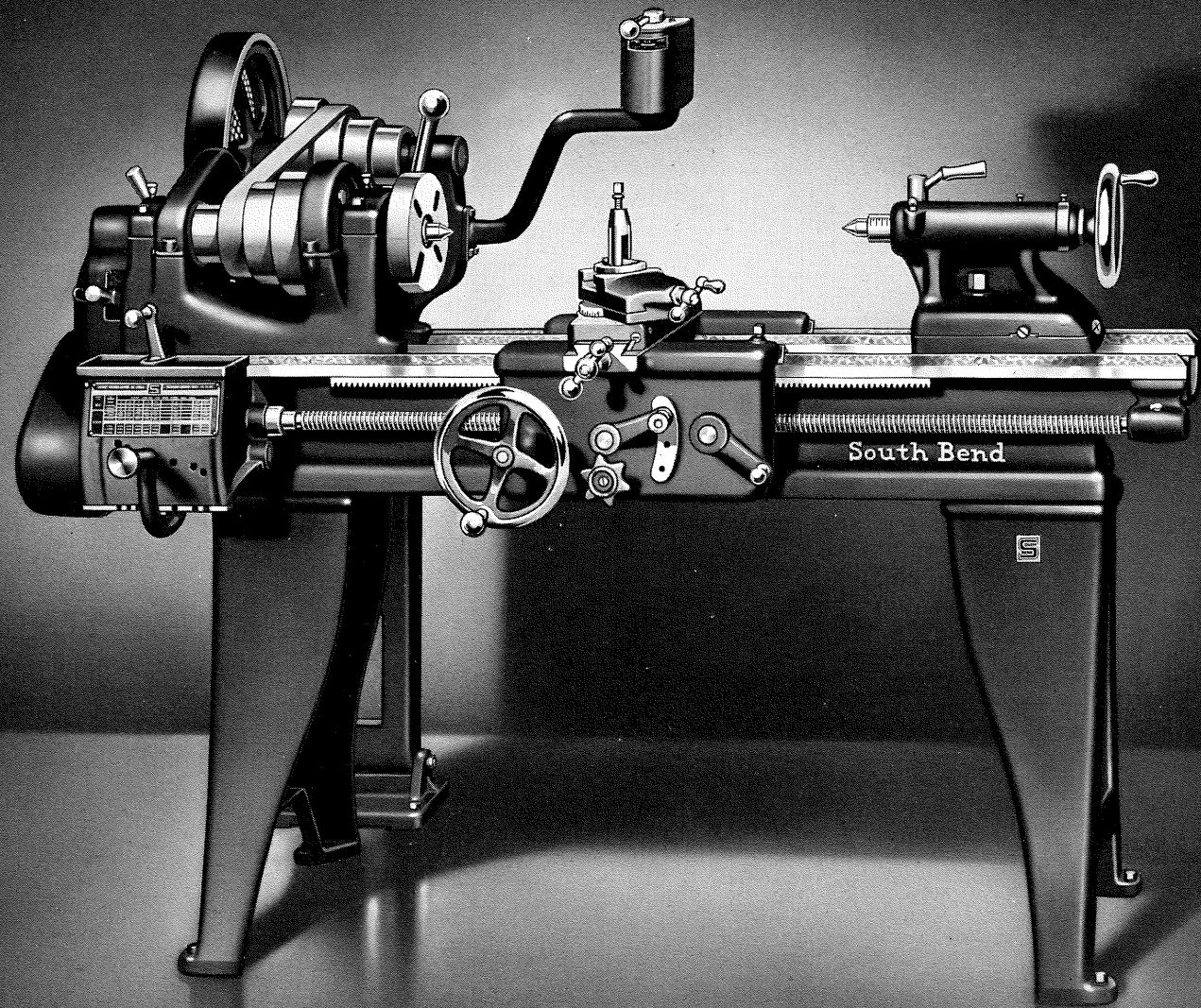
Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price consists of 3/4 H.P. instant reversing ball bear-

ing motor, drum type reversing switch, wiring for switch and motor, 2 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, No. 3 Morse taper tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe."

Quick Change Gear 13-inch Underneath Motor Driven Lathes				
Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers	16-in.	28-in.	40-in.	52-in.
Catalog Number	113-A	113-B	113-C	113-D
Shipping Weight	1460 lbs.	1510 lbs.	1560 lbs.	1615 lbs.
Code Word	Becka	Becno	Bedme	Besec

Standard Change Gear 13-inch Underneath Motor Driven Lathes				
Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers	16-in.	28-in.	40-in.	52-in.
Catalog Number	112-A	112-B	112-C	112-D
Shipping Weight	1440 lbs.	1490 lbs.	1540 lbs.	1595 lbs.
Code Word	Betat	Bacik	Bacmo	Badap



13-inch Quick Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 13-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

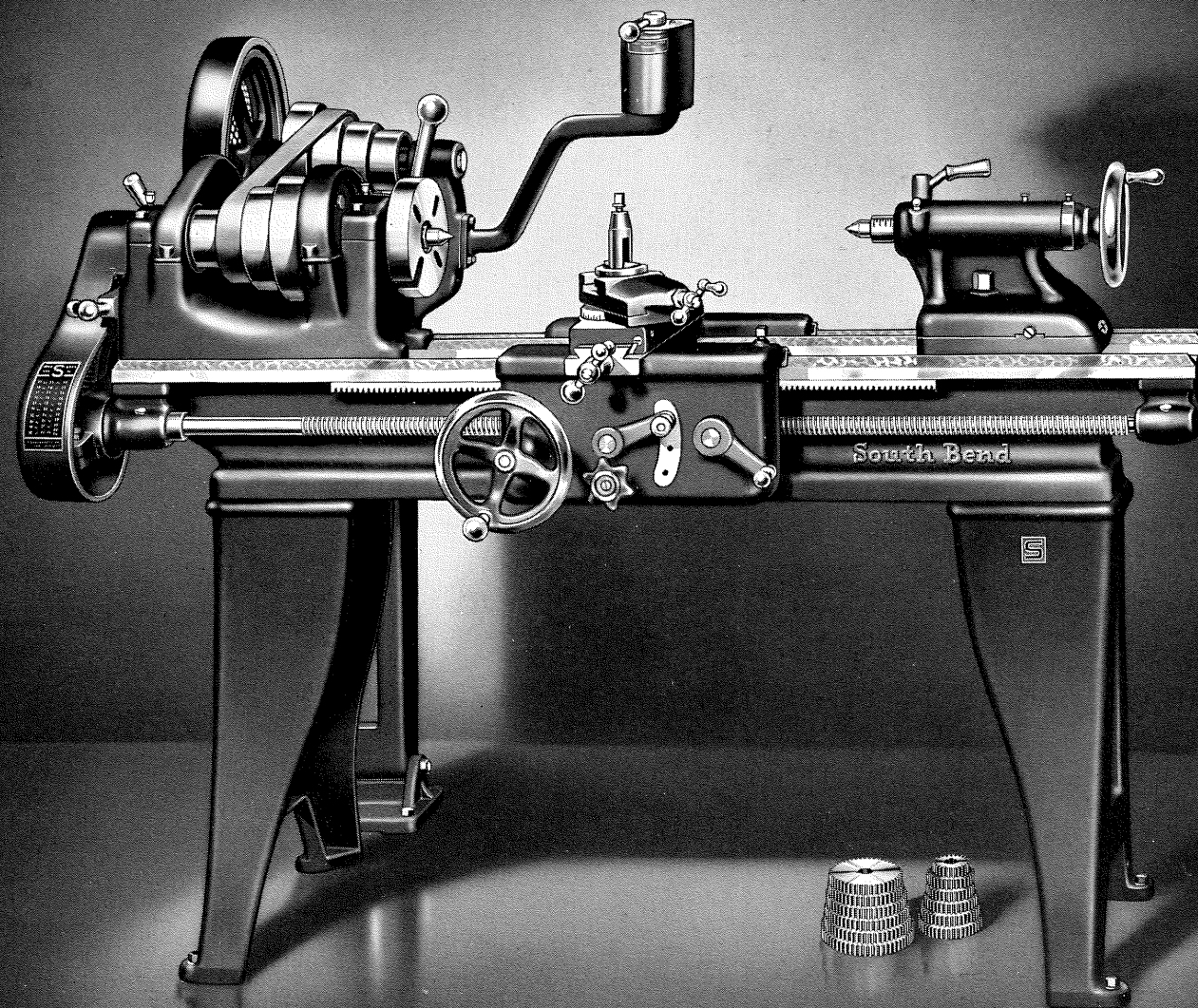
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 28 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 3/4 H.P. instant reversing motor, reversing switch, wiring, 2 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers.....	16-in.	28-in.	40-in.	52-in.
Catalog Number.....	913-A	913-B	913-C	913-D
Shipping Weight.....	1205 lbs.	1255 lbs.	1305 lbs.	1360 lbs.
Code Word.....	Repos	Ravel	Roser	Robog



13-inch Standard Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 13-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 6 for description.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

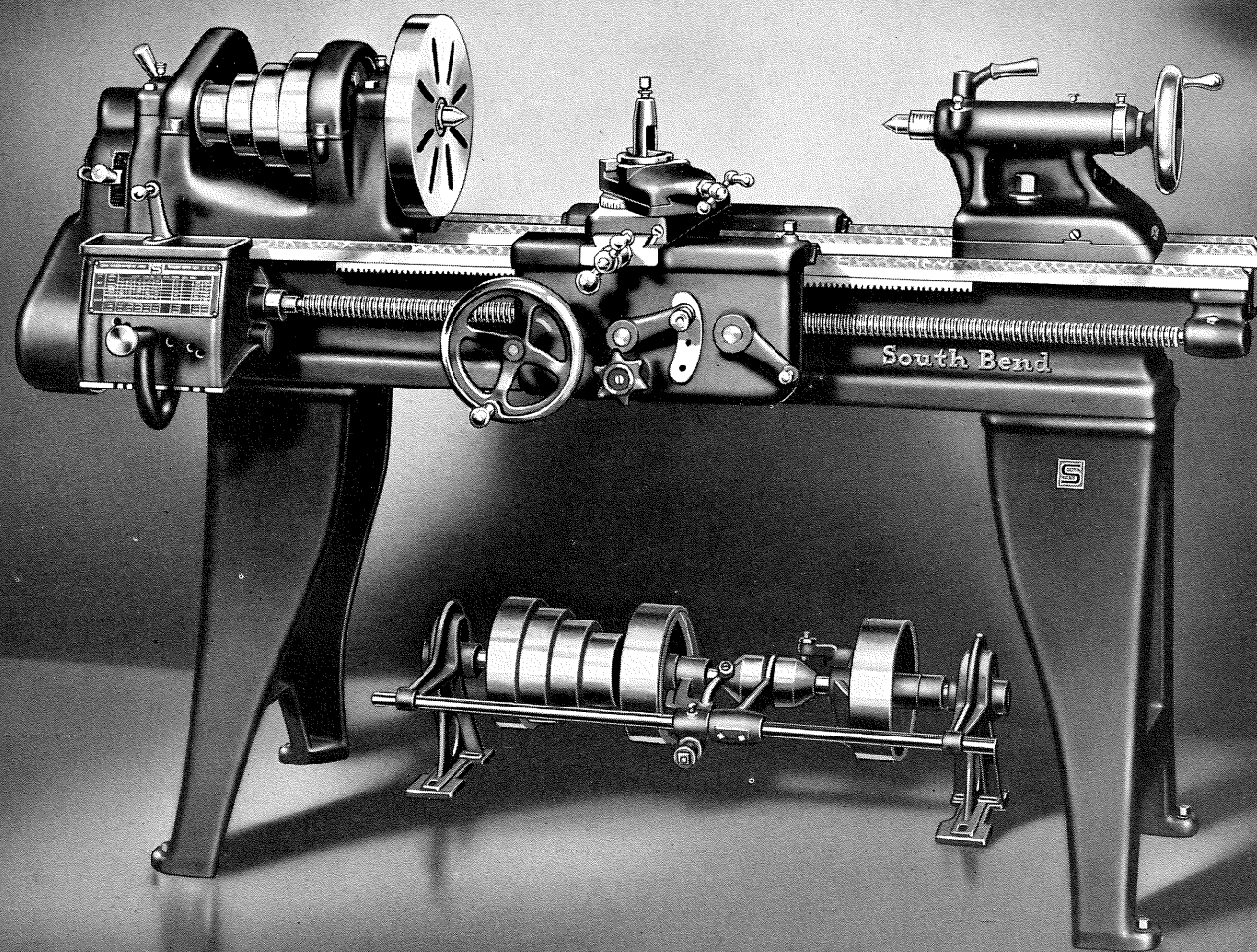
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 6 to 11 for additional features, and page 28 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 3/4 H.P. instant reversing motor, reversing switch, wiring, 2 V-belts, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers.....	16-in.	28-in.	40-in.	52-in.
Catalog Number.....	912-A	912-B	912-C	912-D
Shipping Weight.....	1185 lbs.	1235 lbs.	1285 lbs.	1340 lbs.
Code Word.....	Raxib	Rolax	Rezob	Rimoy



13-inch Quick Change Gear Precision Lathe—Series "T" Countershaft Driven Type

13"
LATHES

The 13-inch Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants.

The 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. Eight spindle speeds forward and eight in reverse are available.

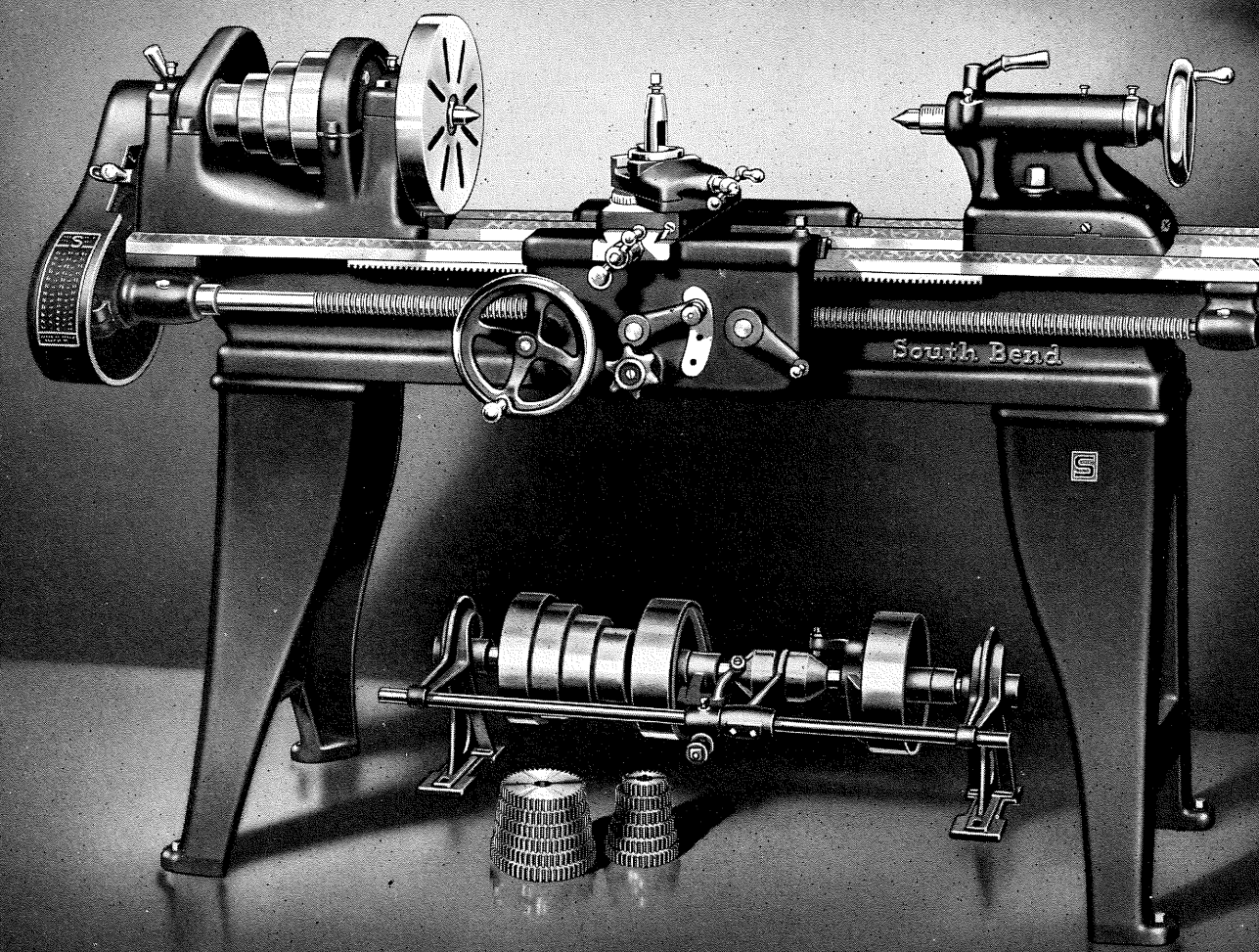
Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 28 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers	16-in.	28-in.	40-in.	52-in.
Catalog Number	13-A	13-B	13-C	13-D
Shipping Weight	1060 lbs.	1110 lbs.	1160 lbs.	1215 lbs.
Code Word	Altek	Altil	Altom	Alvak



13-inch Standard Change Gear Precision Lathe—Series "T" Countershaft Driven Type

13"
LATHES

The 13-inch Standard Change Gear Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for both production operations and general machine work.

The 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. Eight spindle speeds forward and eight in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 6 to 11 for additional features, and page 28 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	4-ft.	5-ft.	6-ft.	7-ft.
Distance Between Centers	16-in.	28-in.	40-in.	52-in.
Catalog Number	12-A	12-B	12-C	12-D
Shipping Weight	1040 lbs.	1090 lbs.	1140 lbs.	1195 lbs.
Code Word	Anvid	Anwif	Anwog	Apcog

Specifications of Series "T" 11-inch Precision Lathes

Applying to all 11-inch Lathes Shown on Pages 37 to 43

All types of 11-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings.....	11 1/8"
Swing over saddle with chip guard removed.....	7 3/8"
Swing over saddle with chip guard.....	6 3/4"

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.....	2 to 112 per inch
Standard change gear lathe—43 threads R.H. or L.H.....	4 to 112 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—24 feeds R.H. or L.H.....	.003" to .0208"
Standard change gear lathe—26 feeds R.H. or L.H.....	.0021" to .0156"
Cross feeds through friction clutch	
Quick change gear lathe—24 feeds.....	.001" to .0077"
Standard change gear lathe—26 feeds.....	.0008" to .0056"
Size of lead screw, diameter and threads per inch.....	7/8"-8

Headstock

Hole through spindle.....	7/8"
Maximum collet capacity.....	1 1/32"
Size of Center, Morse taper.....	No. 2
Spindle nose diameter and threads per inch.....	1 5/8"-8
Width of cone pulley step for belt.....	1 1/2"
Large face plate diameter.....	9"
Small face plate diameter.....	5 5/8"
Standard spindle speeds	
R.P.M. of spindle, back gears engaged.....	40, 69, 118
R.P.M. of spindle, direct belt driven.....	238, 377, 608
High spindle speeds in addition to standard spindle speeds (Optional at extra cost)	
R.P.M. of spindle, back gears engaged.....	77, 122, 195
R.P.M. of spindle, direct belt driven.....	460, 728, 1163

Compound Rest

Cross slide will travel.....	6 7/8"
Angular hand feed of compound rest top slide.....	2 3/4"

Tool Post

Size of opening for tool holder shank.....	3/8" x 7/8"
Size of cutter bits tool holder takes.....	1/4" sq.

Tailstock

Size of Morse taper centers.....	No. 2
Spindle travel.....	3"
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	7/8"

Motor

Horsepower of standard motor used on 11-inch motor driven lathes.....	1/2
R.P.M. of standard motor.....	1725
Number of V-belts used.....	1

Countershaft

Speed in R.P.M. of shaft.....	300
Size of pulleys.....	6 7/8" x 2 3/16"

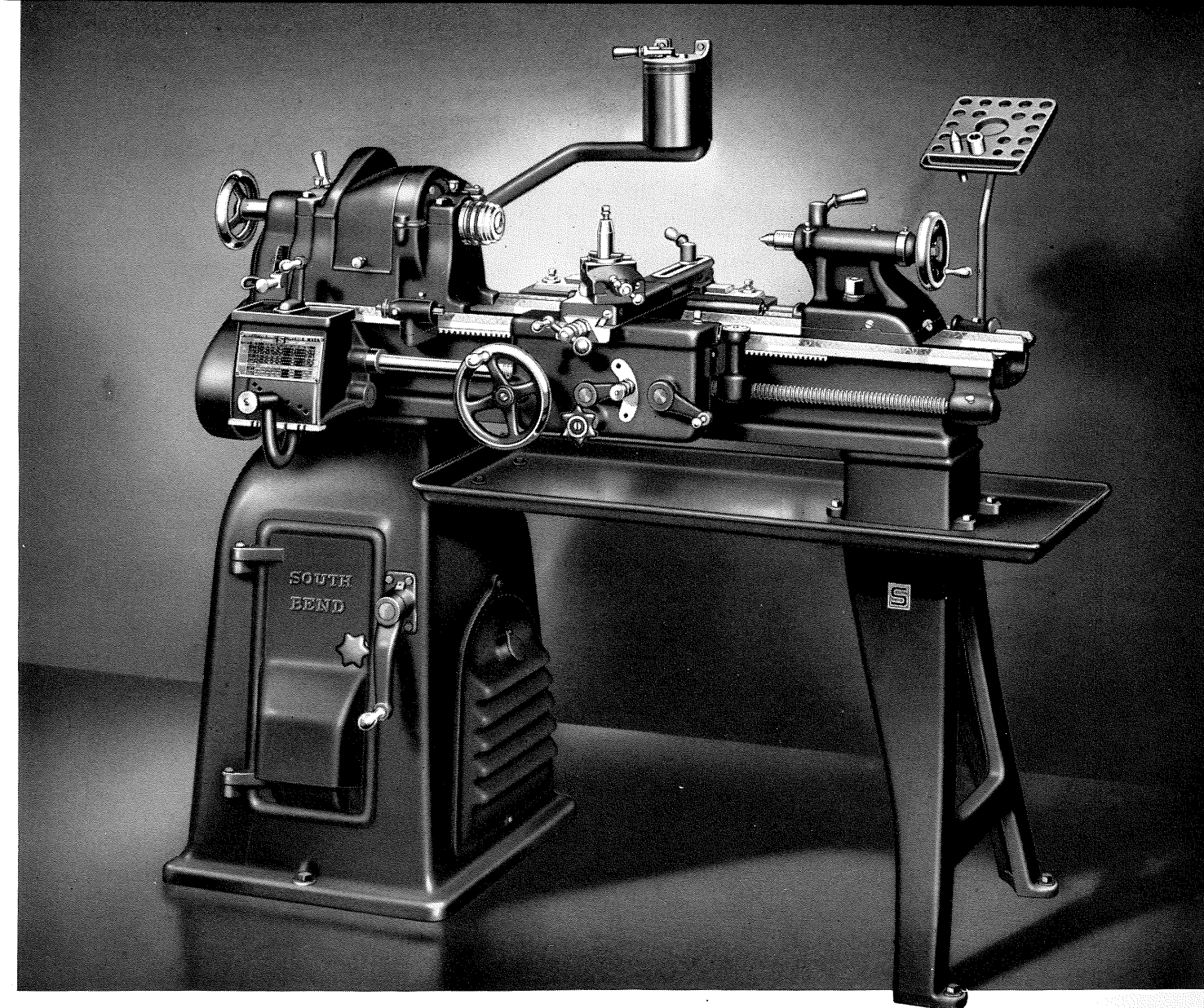
Taper Attachment (telescopic type)

Maximum length turned in one setting.....	8 1/2"
Maximum taper per foot.....	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.	
Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	3.0 mm
Cross feed screw pitch.....	2.5 mm
Compound rest feed screw pitch.....	2.5 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 6 to 11



11-inch Tool Room Precision Lathe—Series "T" Underneath Belt Motor Driven Type

The 11-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 36 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan and micrometer carriage stop. See pages 90 to 111.

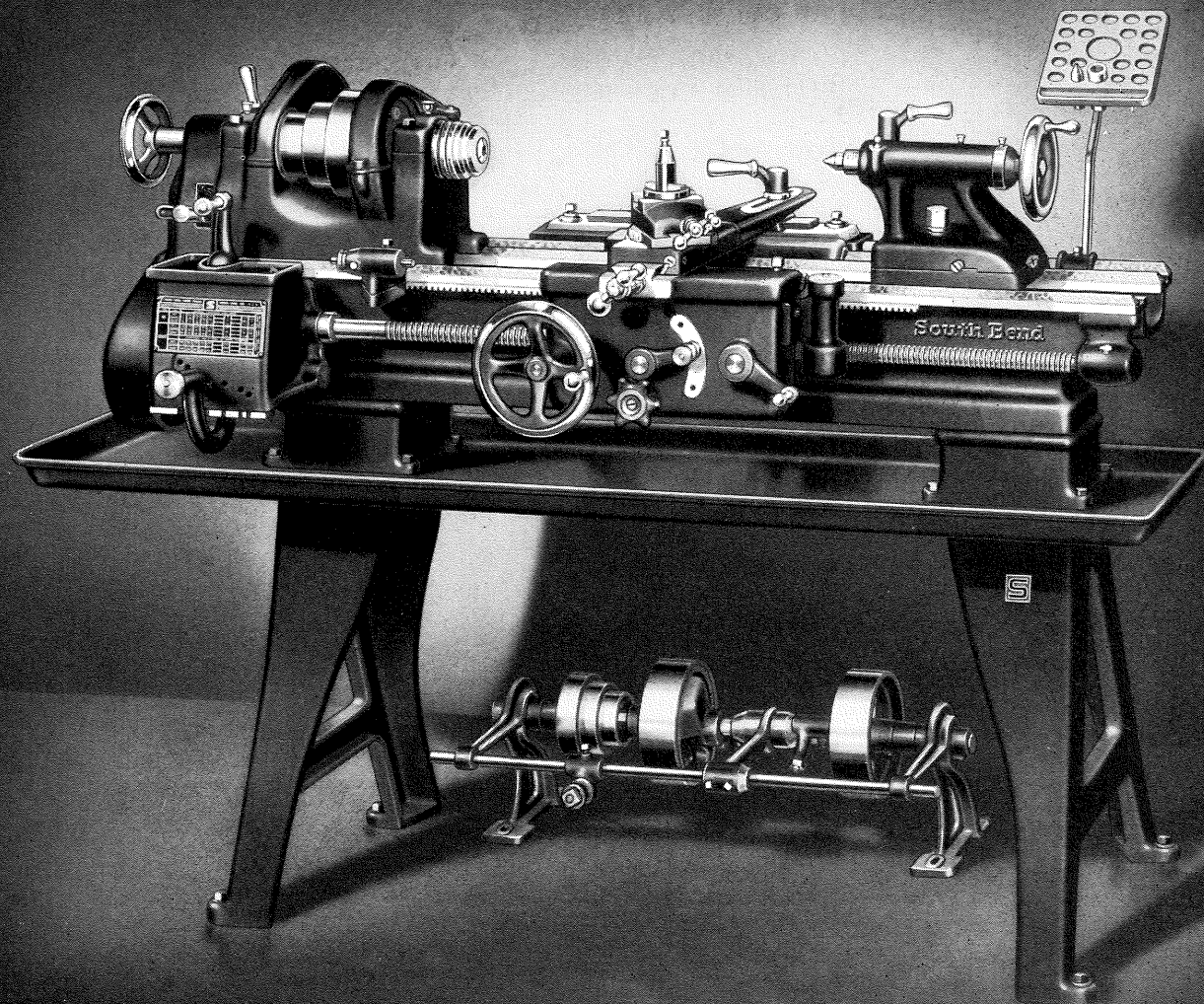
Regular Equipment included in price consists of 1/2 H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

11-inch Underneath Motor Driven Tool Room Lathes

	4-ft.	5-ft.	5 1/2-ft.
Distance Between Centers.....	24-in.	36-in.	42-in.
Catalog Number.....	8111-A	8111-B	8111-S
Shipping Weight of Lathe.....	1070 lbs.	1140 lbs.	1175 lbs.
Code Word.....	Bahof	Bahri	Bapez

11"
LATHES

11"
LATHES



11-inch Tool Room Precision Lathe—Series "T" Countershaft Driven Type

The 11-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 36 for complete specifications of this lathe.

The 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. Eight spindle speeds forward and eight spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

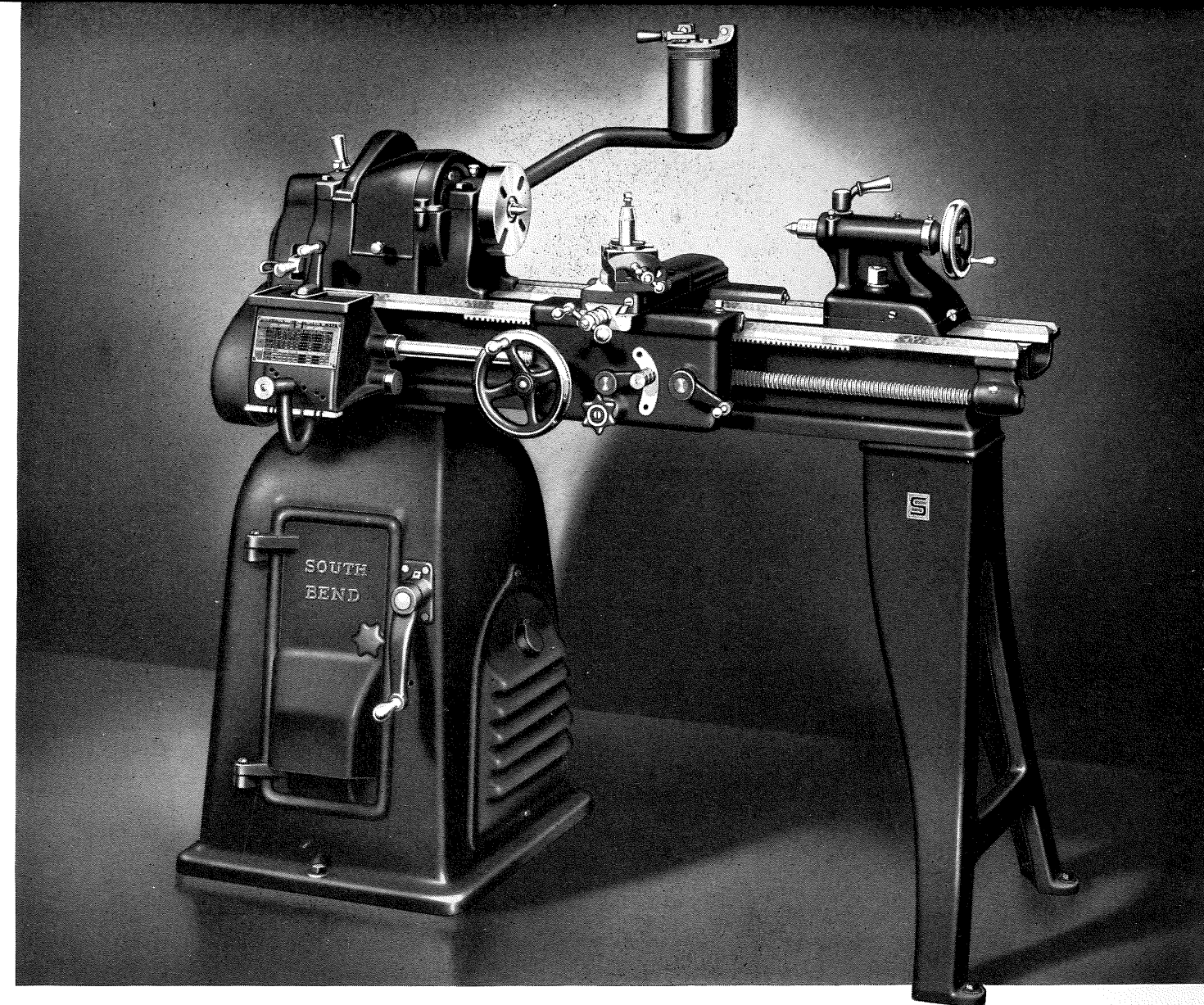
for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plans, and book "How to Run a Lathe."

11-inch Countershaft Driven Tool Room Lathes

Bed Length	4-ft.	5-ft.	5½-ft.
Distance Between Centers.....	24-in.	36-in.	42-in.
Catalog Number.....	8011-A	8011-B	8011-S
Shipping Weight.....	852 lbs.	922 lbs.	957 lbs.
Code Word.....	Arlok	Armum	Asylf



11-inch Underneath Motor Driven Precision Lathe—Series "T" Quick Change Gear and Standard Change Gear Types

The 11-inch Lathe with underneath belt motor drive is popular for both production operations and tool room work. This lathe is made in the Quick Change Gear Type as shown, also in Standard Change Gear Type. See page 36 for specifications of lathe.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4 for description of motor drive.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe.

Regular Equipment included in price consists of ½ H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe."

ing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe."

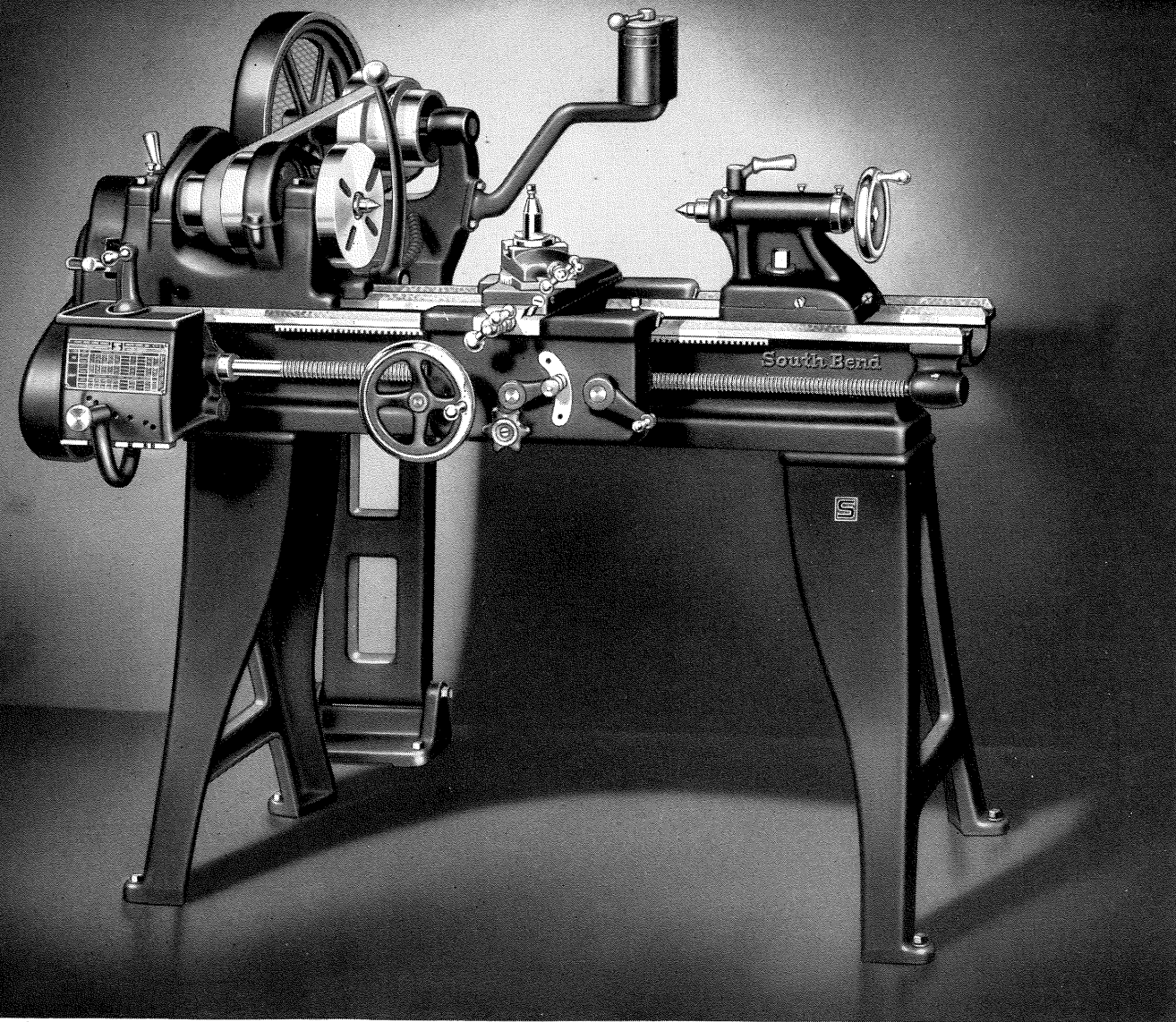
Quick Change Gear
11-inch Underneath Motor Driven Lathes

Bed Length	3½-ft.	4-ft.	5-ft.	5½-ft.
Distance Between Centers.....	18-in.	24-in.	36-in.	42-in.
Catalog Number.....	111-Z	111-A	111-B	111-S
Shipping Weight of Lathe.....	935 lbs.	965 lbs.	1035 lbs.	1070 lbs.
Code Word.....	Bimeb	Bimuf	Bimza	Binfo

Standard Change Gear
11-inch Underneath Motor Driven Lathes

Bed Length	3½-ft.	4-ft.	5-ft.	5½-ft.
Distance Between Centers.....	18-in.	24-in.	36-in.	42-in.
Catalog Number.....	110-Z	110-A	110-B	110-S
Shipping Weight of Lathe.....	920 lbs.	950 lbs.	1020 lbs.	1055 lbs.
Code Word.....	Badod	Badfi	Badzo	Bafka

The above lathes are also made in bench type. See price list.



11-inch Quick Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 11-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

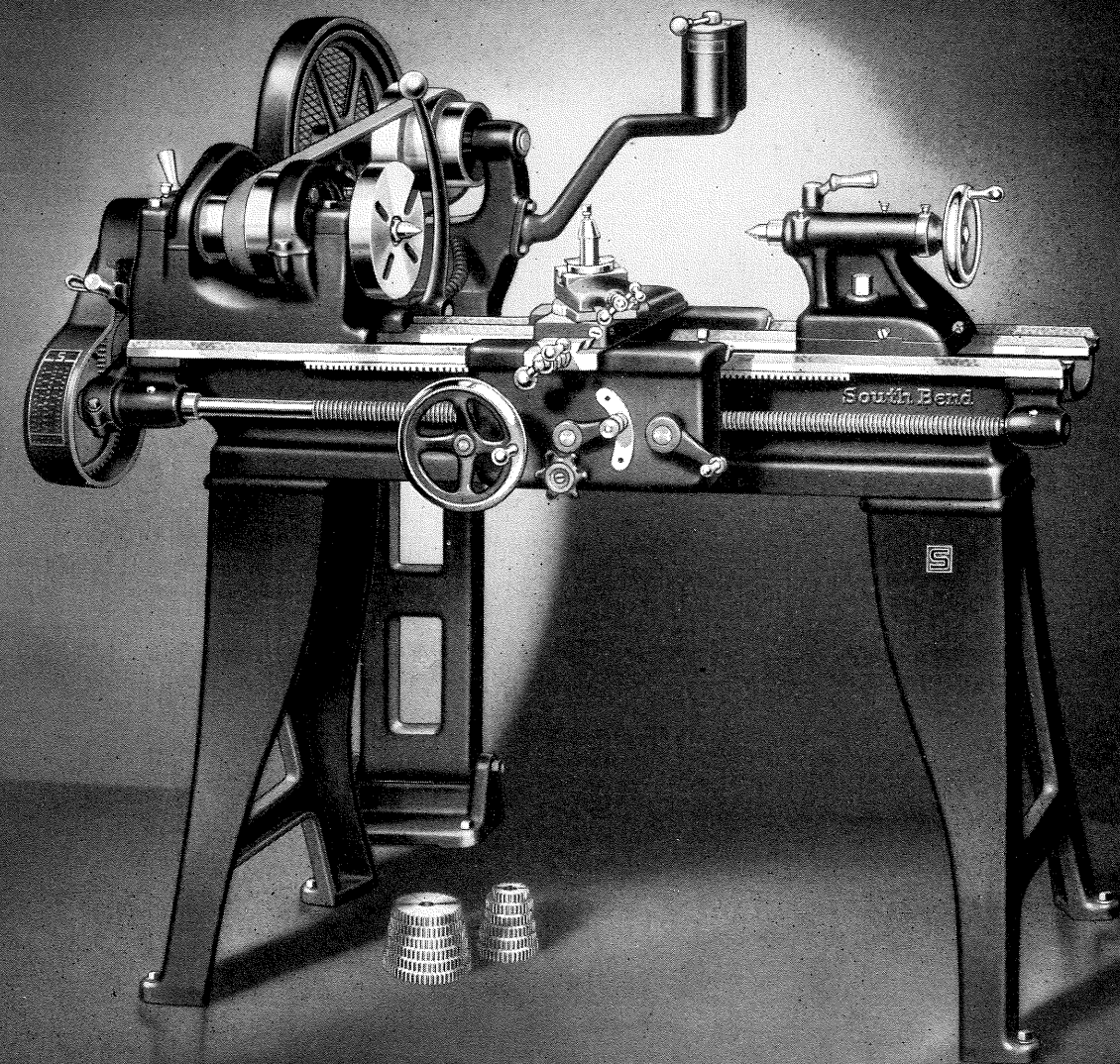
pages 7 to 11 for additional features, and page 36 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1/2 H.P. instant reversing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

Bed Length	3 1/2-ft.	4-ft.	5-ft.	5 1/2-ft.
Distance Between Centers	18-in.	24-in.	36-in.	42-in.
Catalog Number	911-Z	911-A	911-B	911-S
Shipping Weight of Lathe	833 lbs.	863 lbs.	933 lbs.	968 lbs.
Code Word	Marah	Melon	Mijem	Mofel

Bench lathes similar to the above are also made. See price list.



11-inch Standard Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 11-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 6 for description.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer grad-

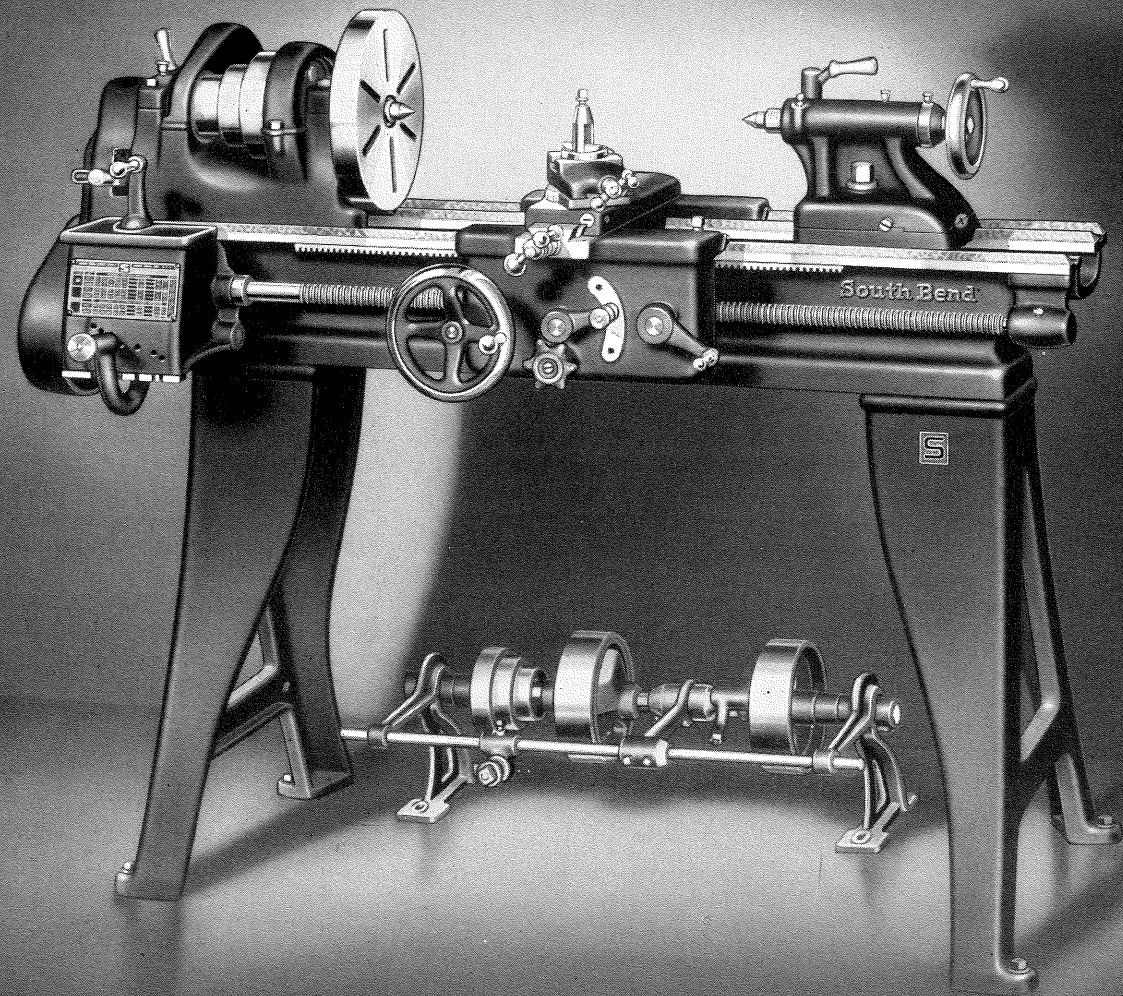
uated collars, and semi-steel lathe bed. See pages 6 to 11 for additional features. For specifications see page 36.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1/2 H.P. instant reversing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	3 1/2-ft.	4-ft.	5-ft.	5 1/2-ft.
Distance Between Centers	18-in.	24-in.	36-in.	42-in.
Catalog Number	910-Z	910-A	910-B	910-S
Shipping Weight of Lathe	818 lbs.	848 lbs.	918 lbs.	953 lbs.
Code Word	Harik	Hebos	Hiran	Himot

Bench lathes similar to the above are also made. See price list.



11-inch Quick Change Gear Precision Lathe—Series "T" Countershaft Driven Type

The 11-inch Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants.

The 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. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 36 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

Bed Length	3½-ft.	4-ft.	5-ft.	5½-ft.
Distance Between Centers	18-in.	24-in.	36-in.	42-in.
Catalog Number	11-Z	11-A	11-B	11-S
Shipping Weight of Lathe	695 lbs.	725 lbs.	795 lbs.	830 lbs.
Code Word	Alvup	Alwho	Alwin	Alzan

The above lathes are also made in bench type. See price list.



11-inch Standard Change Gear Precision Lathe—Series "T" Countershaft Driven Type

The 11-inch Standard Change Gear Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for both production operations and general machine work.

The 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. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

SOUTH BEND, INDIANA, U.S.A.

pages 6 to 11 for additional features, and page 36 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

Bed Length	3½-ft.	4-ft.	5-ft.	5½-ft.
Distance Between Centers	18-in.	24-in.	36-in.	42-in.
Catalog Number	10-Z	10-A	10-B	10-S
Shipping Weight of Lathe	680 lbs.	710 lbs.	780 lbs.	815 lbs.
Code Word	Arpeg	Arbix	Arcob	Ardoc

The above lathes are also made in bench type. See price list.

Specifications of 9-inch 1" Collet Precision Lathes

Applying to all 9-inch 1" Collet Lathes Shown on Pages 45 to 53

All types of 9-inch 1" Collet lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings.....	9 1/4"
Swing over saddle with chip guard removed.....	6"
Swing over saddle with chip guard.....	5 1/4"

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.....	4 to 224 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—32 feeds R.H. or L.H.....	.0015" to .0208"
Cross feeds through friction clutch	
Quick change gear lathe—32 feeds.....	.0006" to .0078"
Size of lead screw, diameter and threads per inch.....	3/4"-8

Headstock

Hole through spindle.....	1 3/8"
Maximum collet capacity.....	1"
Size of Center, Morse taper.....	No. 2
Spindle nose diameter and threads per inch.....	2 1/4"-8
Width of cone pulley step for belt.....	1 1/4"
Large face plate diameter.....	7 5/8"
Small face plate diameter.....	5 5/8"
Standard spindle speeds	
R.P.M. of spindle, back gears engaged.....	50, 79, 129
R.P.M. of spindle, direct belt driven.....	277, 434, 700
High spindle speeds (Included in price of lathe)	
R.P.M. of spindle, back gears engaged.....	97, 153, 248
R.P.M. of spindle, direct belt driven.....	535, 837, 1357

Compound Rest

Cross slide will travel.....	5 7/8"
Angular hand feed of compound rest top slide.....	2"

Tool Post

Size of opening for tool holder shank.....	3/8" x 1 3/16"
Size of cutter bits tool holder takes.....	1/4" sq.

Tailstock

Size of Morse taper centers.....	No. 2
Spindle travel.....	2 1/8"
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	3/4"

Motor

Horsepower of standard motor used on 9-inch 1" collet motor driven lathes.....	1/2
R.P.M. of standard motor.....	1725
Number of V-belts used.....	1

Countershaft

Speed in R.P.M. of shaft.....	300
Size of pulleys.....	6 7/8" x 2 3/16"

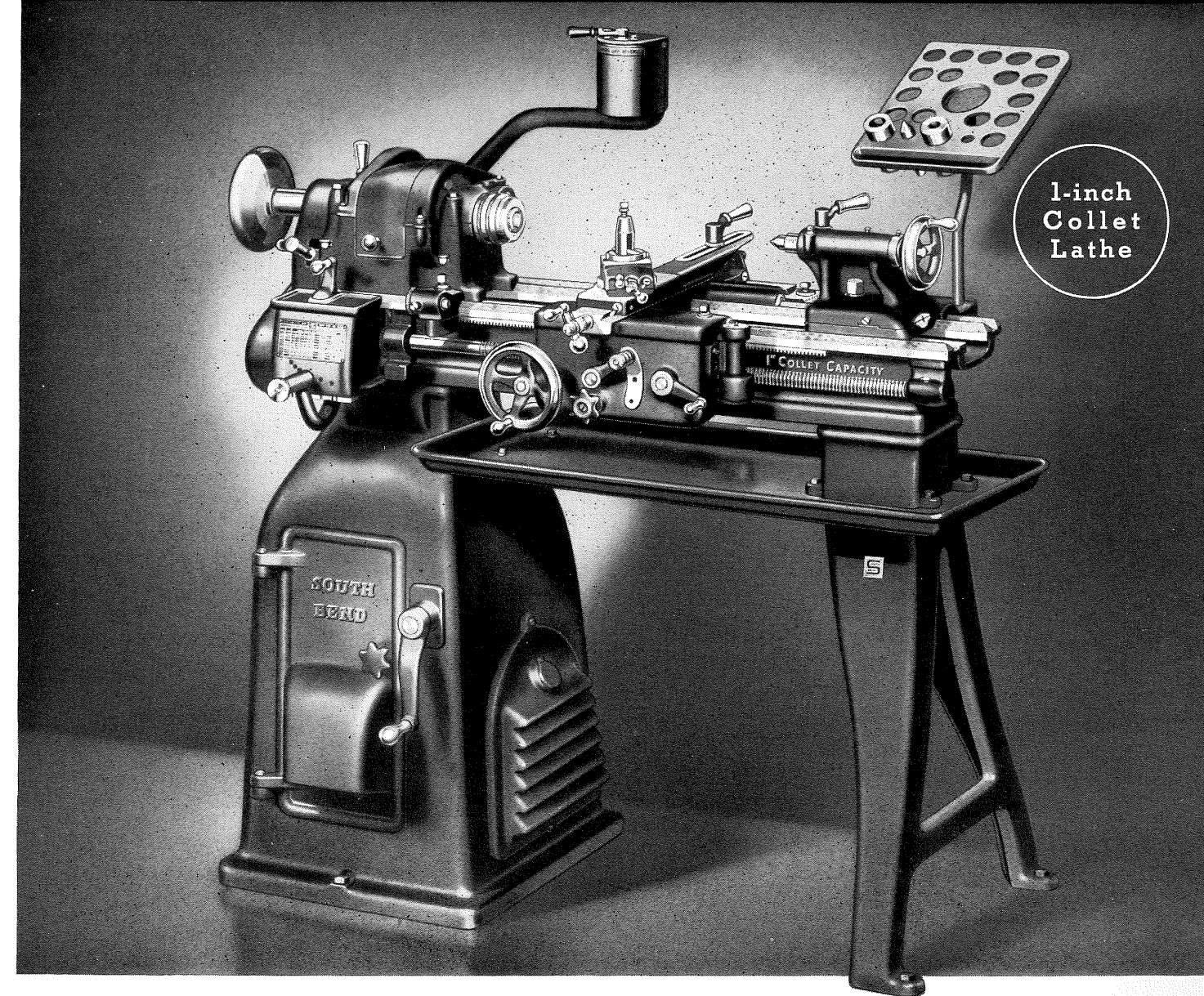
Taper Attachment (telescopic type)

Maximum length turned in one setting.....	8 1/2"
Maximum taper per foot.....	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.	
Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	3.0 mm
Cross feed screw pitch.....	2.5 mm
Compound rest feed screw pitch.....	2.5 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 7 to 11



9-inch 1" Collet Capacity Tool Room Precision Lathe Underneath Belt Motor Driven Type

The 9-inch 1" Collet Capacity Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 44 for specifications of this lathe.

A Special Headstock with 1 3/8" hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys. The spindle runs in integral cast iron bearings which are adjustable for wear and have an efficient capillary oiling system.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds;

easy reading micrometer graduated collars; full quick change gear mechanism for threads and feeds, and semi-steel lathe bed. See description on pages 7 to 11.

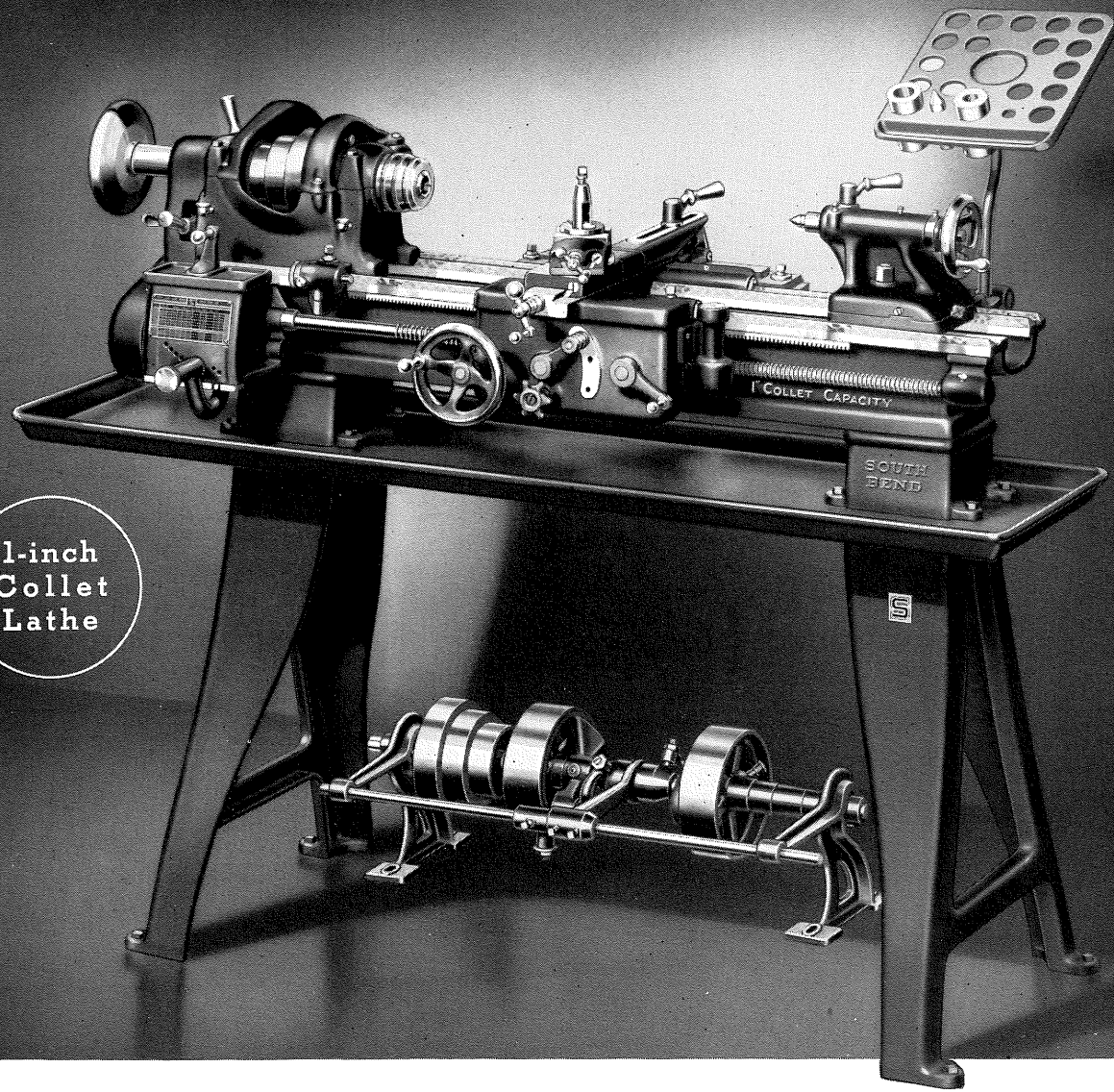
Attachments included in the price of this Tool Room Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price consists of 1/2 H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

9"—1" Collet Underneath Motor Driven Tool Room Lathes

	3-ft.	3 1/2-ft.	4-ft.
Bed Length	3-ft.	3 1/2-ft.	4-ft.
Distance Between Centers.....	16 3/4-in.	21 3/4-in.	27 3/4-in.
Catalog Number.....	8159-Y	8159-Z	8159-A
Shipping Weight of Lathe.....	925 lbs.	955 lbs.	985 lbs.
Code Word.....	Bulaz	Buled	Bulih

1-inch
Collet
Lathe



9-inch 1" Collet Capacity Tool Room Precision Lathe Countershaft Driven Type

The 9-inch 1" Collet Capacity Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 44 for complete specifications of this lathe.

A Special Headstock with $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. The spindle runs in integral cast iron bearings which are adjustable for wear and are equipped with an efficient capillary oiling system.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick

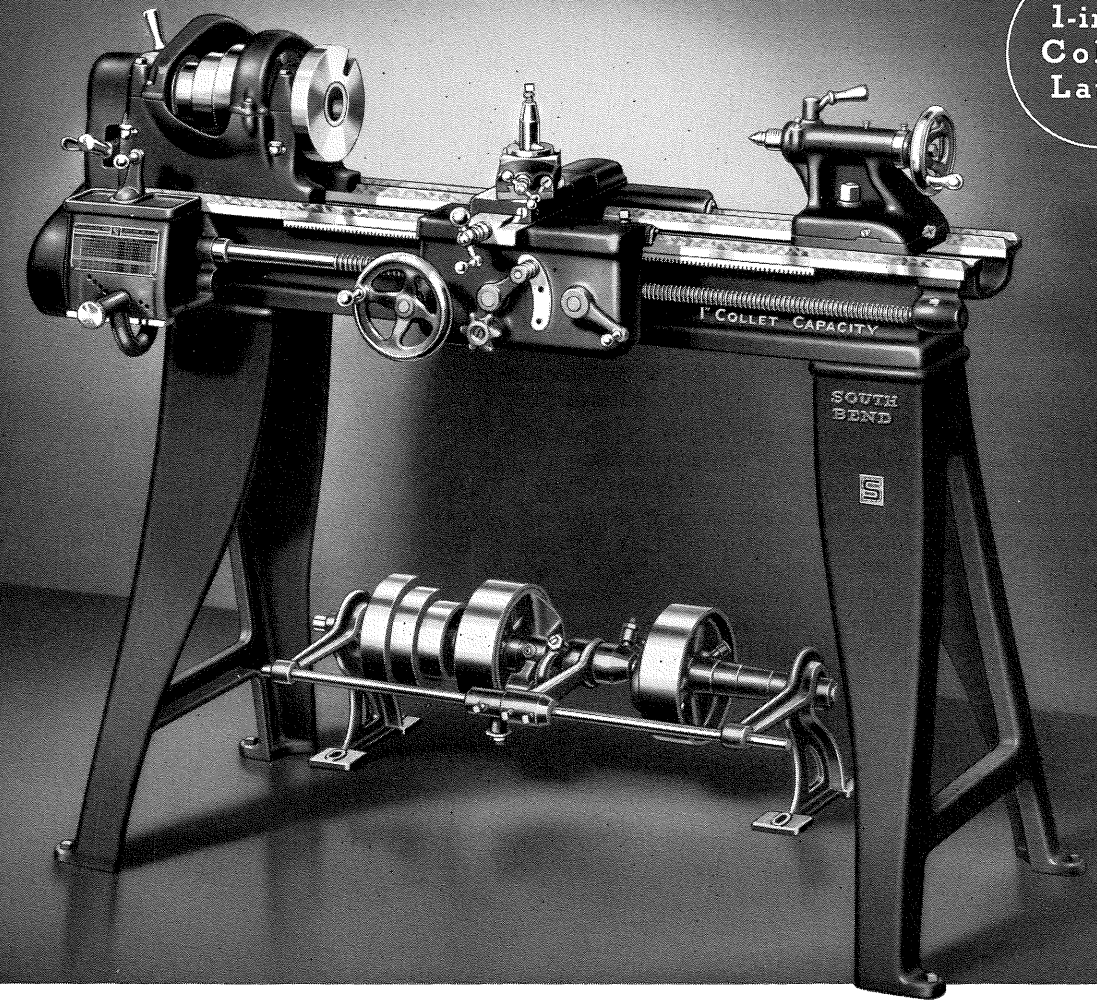
change gear mechanism for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

9-inch 1" Collet Countershaft Driven Tool Room Lathes			
Bed Length	3-ft.	3½-ft.	4-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.
Catalog Number.....	8059-Y	8059-Z	8059-A
Shipping Weight of Lathe.....	640 lbs.	670 lbs.	700 lbs.
Code Word.....	Tumaf	Tumej	Tumin

1-inch
Collet
Lathe



9-inch 1" Collet Capacity Quick Change Gear Precision Lathe Overhead Countershaft Driven Type

The 9-inch 1" Collet Capacity Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in industrial plants.

A Special Headstock with $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet makes this lathe practical for operations on bar stock. Spindle runs in integral cast iron bearings which are adjustable for wear and have an efficient capillary oiling system.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel

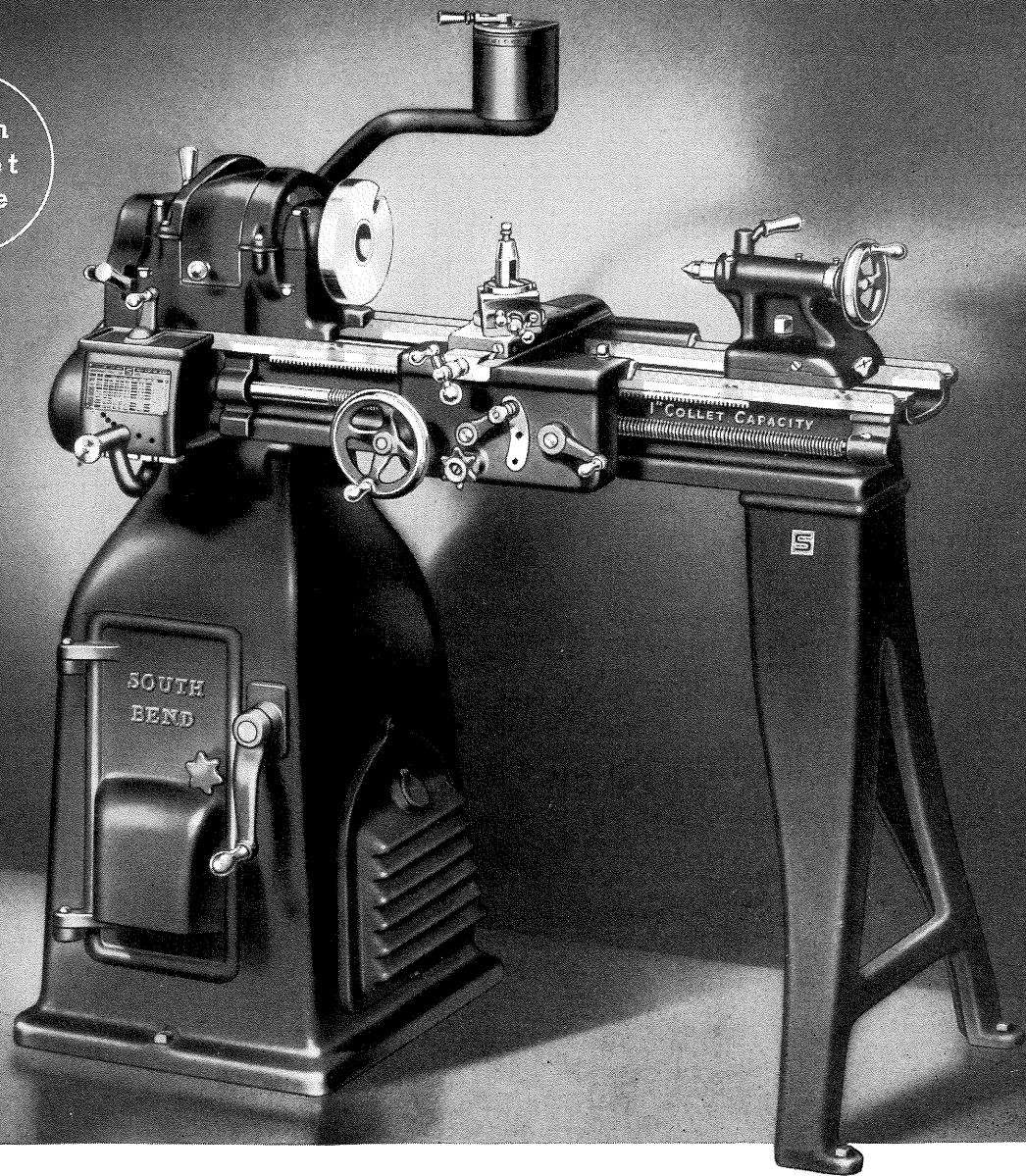
lathe bed. See pages 7 to 11 for additional features, and page 44 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

9-inch 1" Collet Quick Change Gear Countershaft Driven Lathes				
Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	59-Y	59-Z	59-A	59-R
Shipping Weight of Lathe.....	515 lbs.	540 lbs.	565 lbs.	590 lbs.
Code Word.....	Tobuc	Tofug	Togog	Toguh

1-inch
Collet
Lathe



9-inch 1" Collet Capacity Quick Change Gear Precision Lathe Underneath Belt Motor Driven Type

The 9-inch 1" Collet Capacity Quick Change Gear Lathe with underneath belt motor drive is popular for both production operations and tool room work. The quick change gear box provides an unusually wide range of right and left hand screw threads and power feeds. See page 7 for description of gear box.

A Special Headstock with $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys. The spindle runs in integral cast iron bearings which are adjustable for wear.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel

lathe bed. See pages 7 to 11 for additional features, and page 44 for specifications of this lathe.

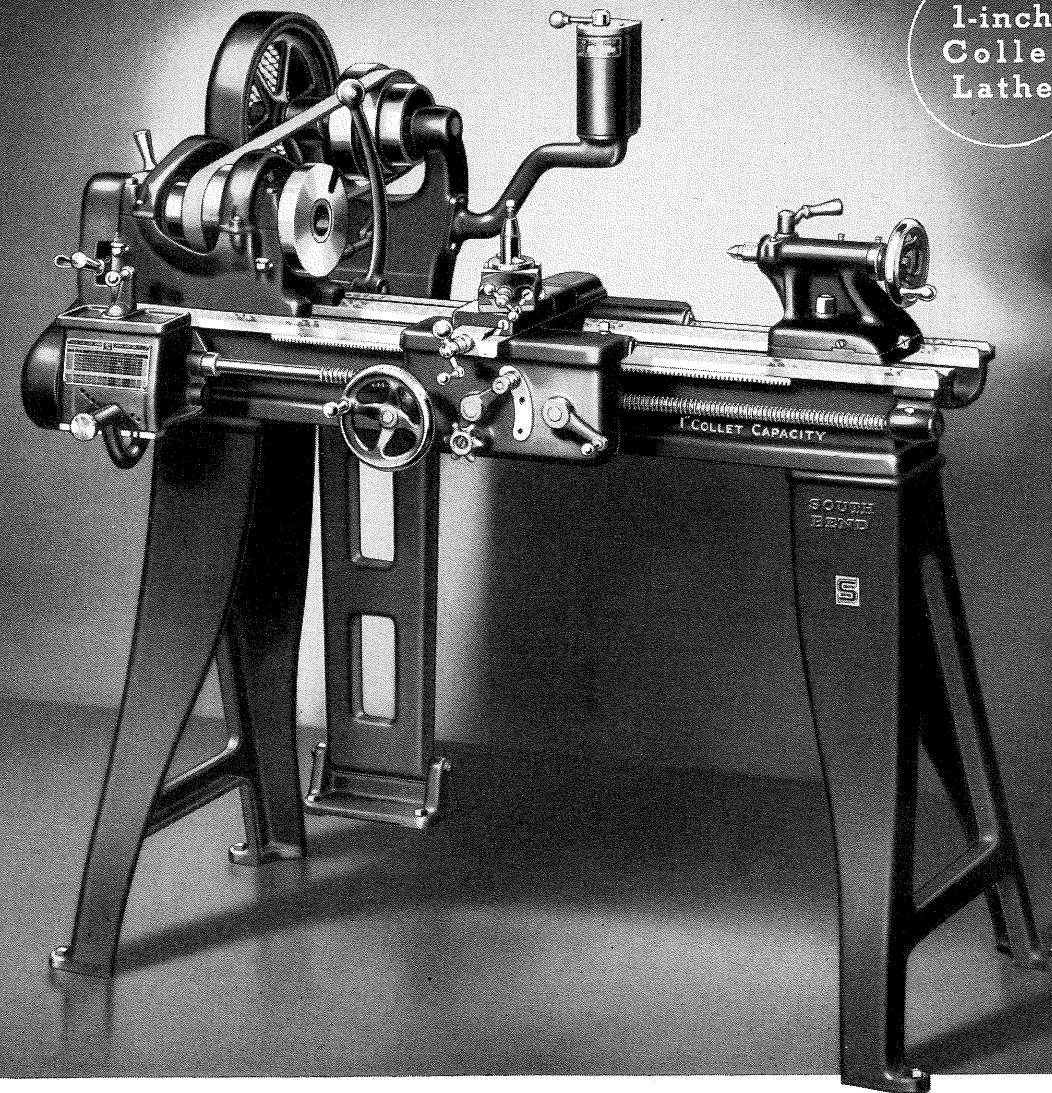
Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price consists of $\frac{1}{2}$ H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

9"-1" Collet Quick Change Gear Underneath Motor Driven Lathes

Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	159-Y	159-Z	159-A	159-R
Shipping Weight of Lathe.....	800 lbs.	825 lbs.	850 lbs.	875 lbs.
Code Word.....	Bujig	Bujom	Bulon	Bumiv

1-inch
Collet
Lathe



9-inch 1" Collet Capacity Quick Change Gear Precision Lathe Pedestal Motor Driven Type

The 9-inch 1" Collet Capacity Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7.

A Special Headstock with $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys. The spindle runs in integral cast iron bearings which are adjustable for wear and have an efficient capillary oiling system.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel

lathe bed. See pages 7 to 11 for additional features, and page 44 for specifications of this lathe.

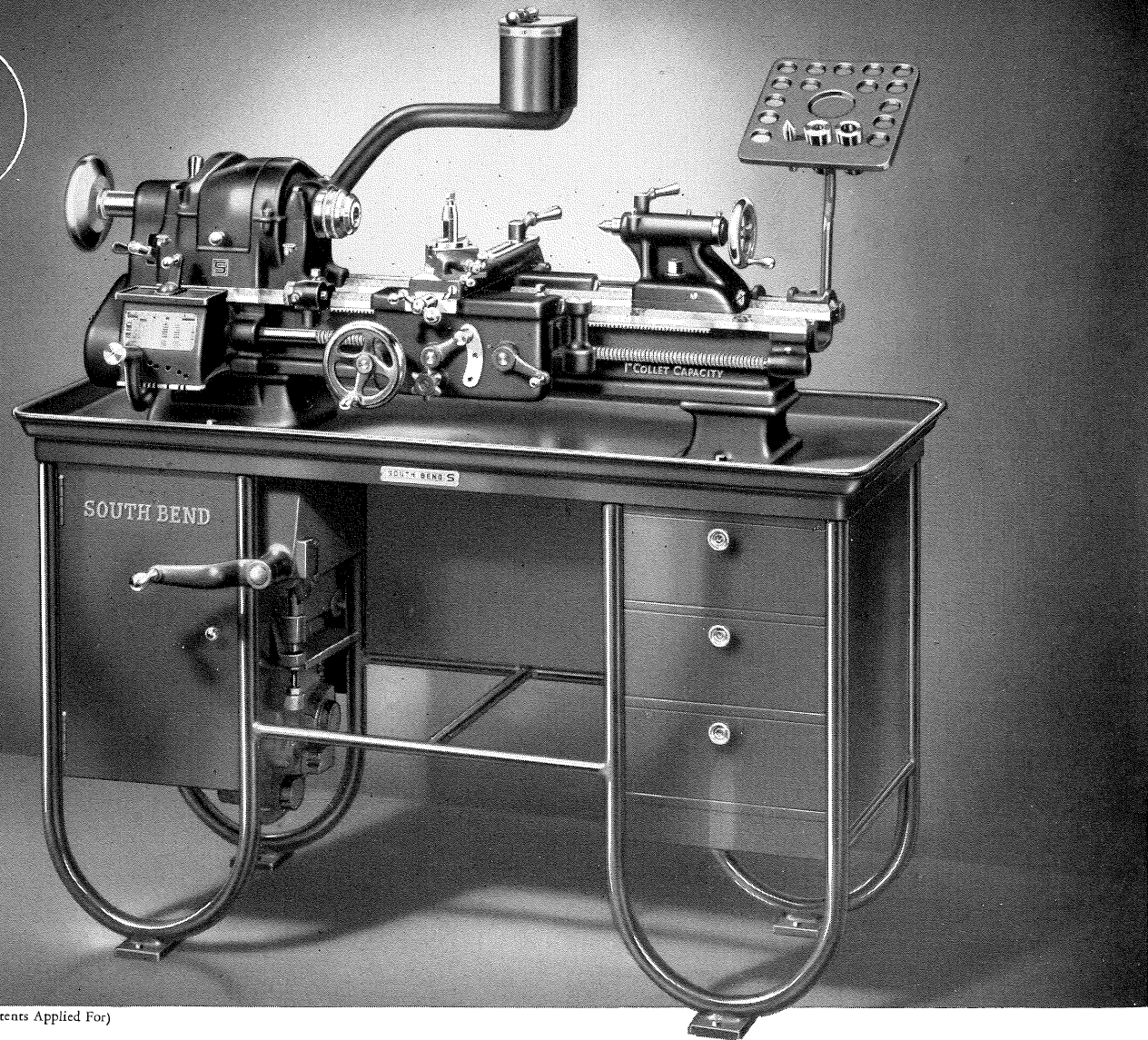
Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of $\frac{1}{2}$ H.P. instant reversing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

9-inch 1" Collet Quick Change Gear Pedestal Motor Driven Lathes

Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	959-Y	959-Z	959-A	959-R
Shipping Weight of Lathe.....	695 lbs.	720 lbs.	745 lbs.	770 lbs.
Code Word.....	Gefar	Gefev	Gefof	Geful

1-inch
Collet
Lathe



(Patents Applied For)

9-inch 1" Collet Capacity Tool Room Precision Bench Lathe Underneath Belt Motor Driven Type

The 9-inch 1" Collet Capacity Tool Room Bench Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 44 for specifications of this lathe.

A Special Headstock with $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys. The spindle runs in integral cast iron bearings which are adjustable for wear and have an efficient capillary oiling system.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick

change gear mechanism for threads and feeds, and semi-steel lathe bed. See description on pages 7 to 11.

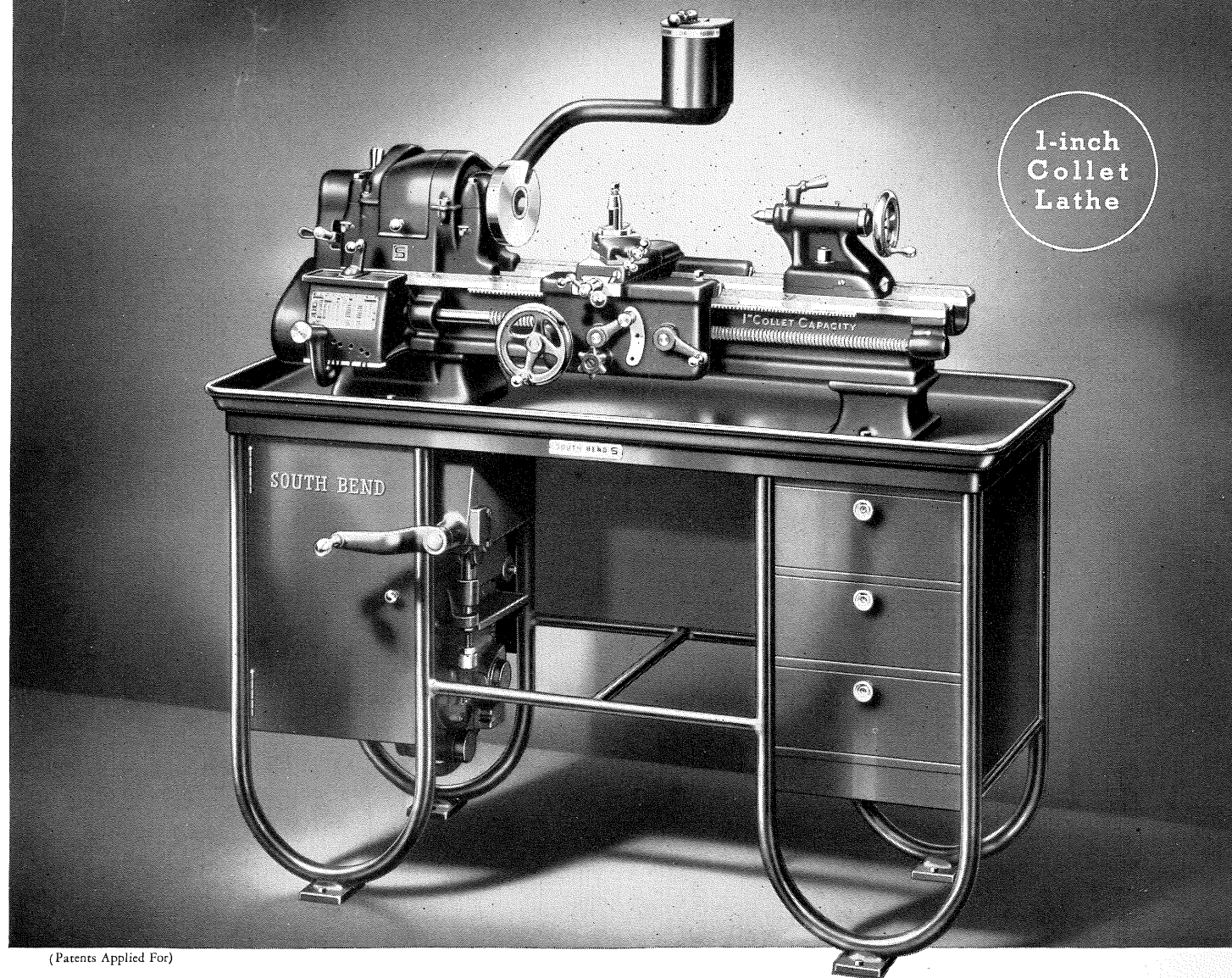
Attachments included in the price of this Tool Room Bench Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price consists of $\frac{1}{2}$ H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe." Bench with chip pan not included, see page 105.

9-inch 1" Collet Underneath Motor Driven
Tool Room Bench Lathes

Bed Length	3-ft.	3½-ft.	4-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.
Catalog Number.....	8159-YB	8159-ZB	8159-AB
Shipping Weight.....	740 lbs.	770 lbs.	800 lbs.
Code Word.....	Letad	Leteh	Letil

1-inch
Collet
Lathe



(Patents Applied For)

9-inch 1" Collet Capacity Quick Change Gear Precision Bench Lathe—Underneath Belt Motor Driven Type

The 9-inch 1" Collet Capacity Quick Change Gear Bench Lathe with underneath belt motor drive is popular for industrial use as it is unusually compact and efficient. This lathe has the ruggedness and durability for production operations and the precision accuracy for exacting tool room and laboratory use.

A Special Headstock with $1\frac{3}{8}$ " hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys. The spindle runs in integral cast iron bearings which are adjustable for wear and have an excellent capillary oiling system.

The Quick Change Gear Box provides an unusually wide range of right and left hand screw threads and power carriage feeds. See page 7 for description.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears

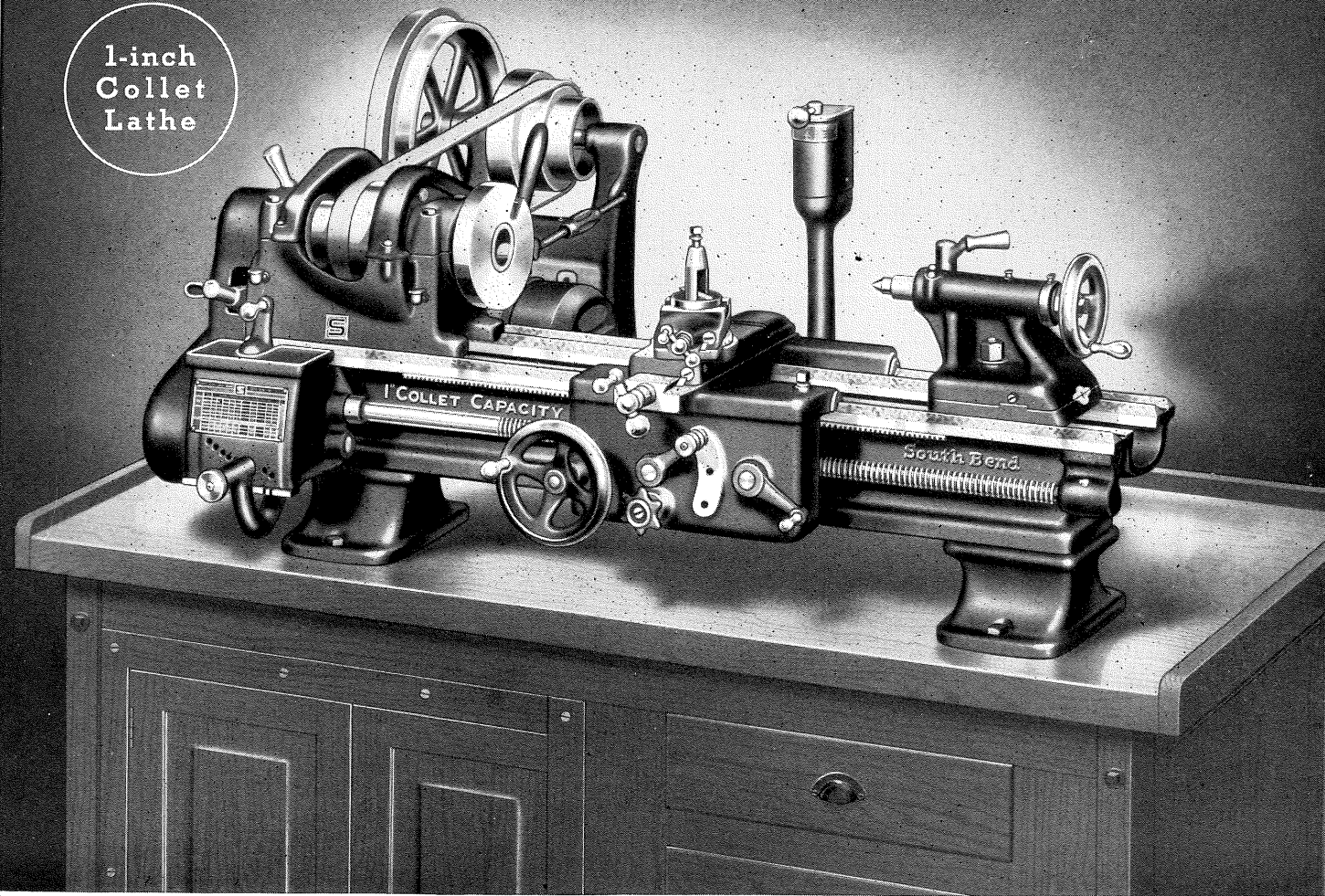
of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See pages 7 to 11 for additional features, and page 44 for specifications.

Regular Equipment included in price consists of $\frac{1}{2}$ H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, tool post, thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan and book "How to Run a Lathe." Bench not included, see page 105.

9-inch 1" Collet Quick Change Gear
Underneath Belt Motor Driven Bench Lathes

Bed Length	3-ft.	3½-ft.	4-ft.	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	159-YB	159-ZB	159-AB	159-RB
Shipping Weight of Lathe.....	635 lbs.	660 lbs.	685 lbs.	710 lbs.
Code Word.....	Bavec	Bayiv	Bikom	Becig

1-inch
Collet
Lathe



9-inch 1" Collet Capacity Quick Change Gear Precision Bench Lathe—Horizontal Motor Driven Type

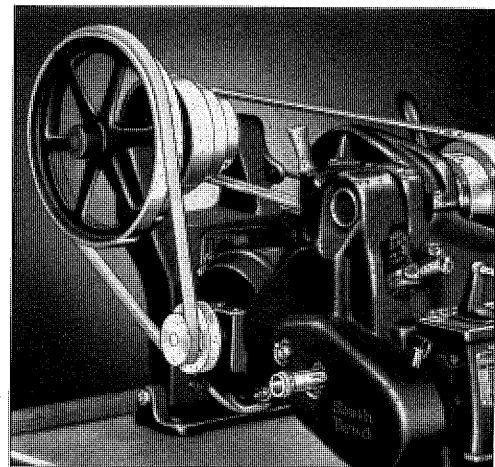
The 9-inch 1" Collet Capacity Quick Change Gear Bench Lathe with horizontal motor drive is very attractively priced. The quick change gear box provides a wide range of right and left hand screw threads and power carriage feeds. See page 7 for description of quick change gear box.

A Special Headstock with 1 3/8" hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. Spindle speeds, 50 to 1357 R.P.M. are provided by two-speed motor drive pulleys. The spindle runs in integral cast iron bearings which are adjustable for wear.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and multiple disc friction clutch; micrometer graduated collars, and semi-steel lathe bed. See pages 7 to 11 for features and page 44 for specifications.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe.

Regular Equipment included in price of this lathe consists of 1/2 H.P. instant reversing motor, reversing switch, wiring, V-belt, leather belt, large and small face plates, tool post, thread cutting stop, centers for headstock and tailstock spindles, spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe". Bench not included.

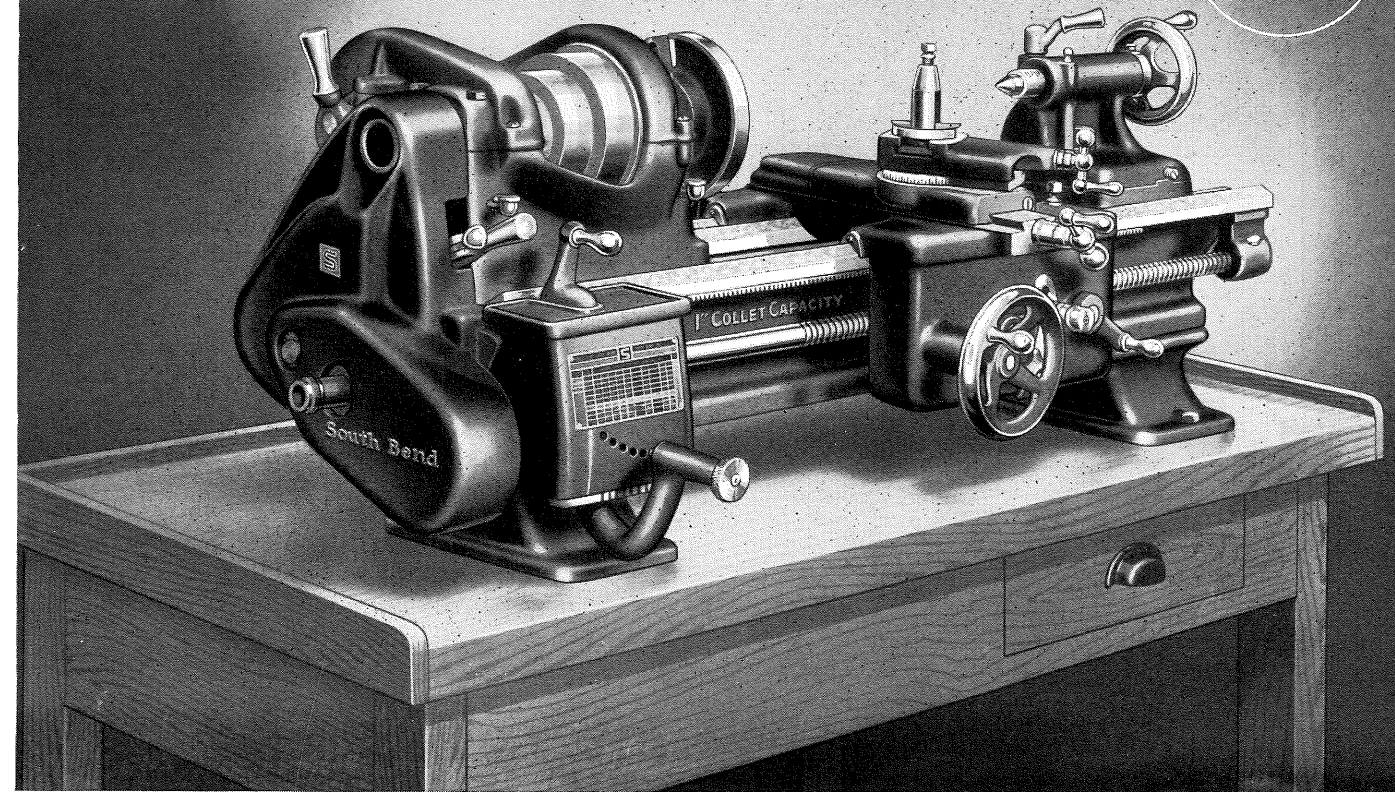


(Patented)
End View of Lathe Showing Adjustable Horizontal Motor Drive

9-inch 1" Collet Capacity Quick Change Gear Horizontal Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers....	16 3/4-in.	21 3/4-in.	27 3/4-in.	34 3/4-in.
Catalog Number.....	459-Y	459-Z	459-A	459-R
Shipping Weight of Lathe....	511 lbs.	536 lbs.	561 lbs.	586 lbs.
Code Word.....	Didud	Digid	Dodor	Dodux

1-inch
Collet
Lathe



9-inch 1" Collet Capacity Quick Change Gear Precision Bench Lathe—Overhead Countershaft Driven Type

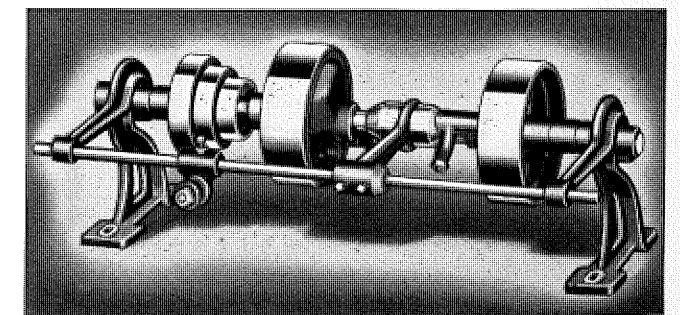
The 9-inch 1" Collet Capacity Quick Change Gear Bench Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 44 for specifications.

A Special Headstock with 1 3/8" hole through the spindle and 1" capacity through collet makes this lathe especially practical for tool room and production operations on parts made of bar stock or tubing. The spindle runs in integral cast iron bearings which are adjustable for wear and are equipped with an efficient capillary oiling system.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; ball thrust bearing; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See pages 7 to 11 for additional features of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe." Bench not included.



Double Friction Countershaft for Lathe
9-inch 1" Collet Capacity Quick Change Gear Countershaft Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.	4-ft.	4 1/2-ft.
Distance Between Centers....	16 3/4-in.	21 3/4-in.	27 3/4-in.	34 3/4-in.
Catalog Number.....	59-YB	59-ZB	59-AB	59-RB
Shipping Weight of Lathe....	440 lbs.	465 lbs.	490 lbs.	515 lbs.
Code Word.....	Tikec	Tikid	Tikof	Tiluh

Specifications of Series "T" 9-inch Precision Lathes

Applying to all 9-inch Lathes Shown on Pages 55 to 65

All types of 9-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings.....	9 1/4"
Swing over saddle with chip guard removed.....	6"
Swing over saddle with chip guard.....	5 1/4"

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.....	4 to 224 per inch
Standard change gear lathe—43 threads R.H. or L.H.....	4 to 112 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—32 feeds R.H. or L.H.....	.0015" to .0208"
Standard change gear lathe—26 feeds R.H. or L.H.....	.0021" to .0152"
Cross feeds through friction clutch	
Quick change gear lathe—32 feeds.....	.0006" to .0078"
Standard change gear lathe—26 feeds.....	.0008" to .0056"
Size of lead screw, diameter and threads per inch.....	3/4"-8

Headstock

Hole through spindle.....	3/4"
Maximum collet capacity.....	1 1/2"
Size of Center, Morse taper.....	No. 2
Spindle nose diameter and threads per inch.....	1 1/8"-8
Width of cone pulley step for belt.....	1 1/4"
Large face plate diameter.....	7 3/8"
Small face plate diameter.....	5 5/8"
Standard spindle speeds	
R.P.M. of spindle, back gears engaged.....	45, 75, 128
R.P.M. of spindle, direct belt driven.....	246, 410, 700
High spindle speeds in addition to standard spindle speeds (Optional at extra cost)	
R.P.M. of spindle, back gears engaged.....	87, 145, 250
R.P.M. of spindle, direct belt driven.....	475, 791, 1354

Compound Rest

Cross slide will travel.....	5 7/8"
Angular hand feed of compound rest top slide.....	2"

Tool Post

Size of opening for tool holder shank.....	3/8" x 1 3/16"
Size of cutter bits tool holder takes.....	1/4" sq.

Tailstock

Size of Morse taper centers.....	No. 2
Spindle travel.....	2 1/8"
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	3/4"

Motor

Horsepower of standard motor used on Series "T" 9-inch motor driven lathes.....	1/3
R.P.M. of standard motor.....	1725
Number of V-belts used.....	1

Countershaft

Speed in R.P.M. of shaft.....	300
Size of pulleys.....	6 7/8" x 2 3/16"

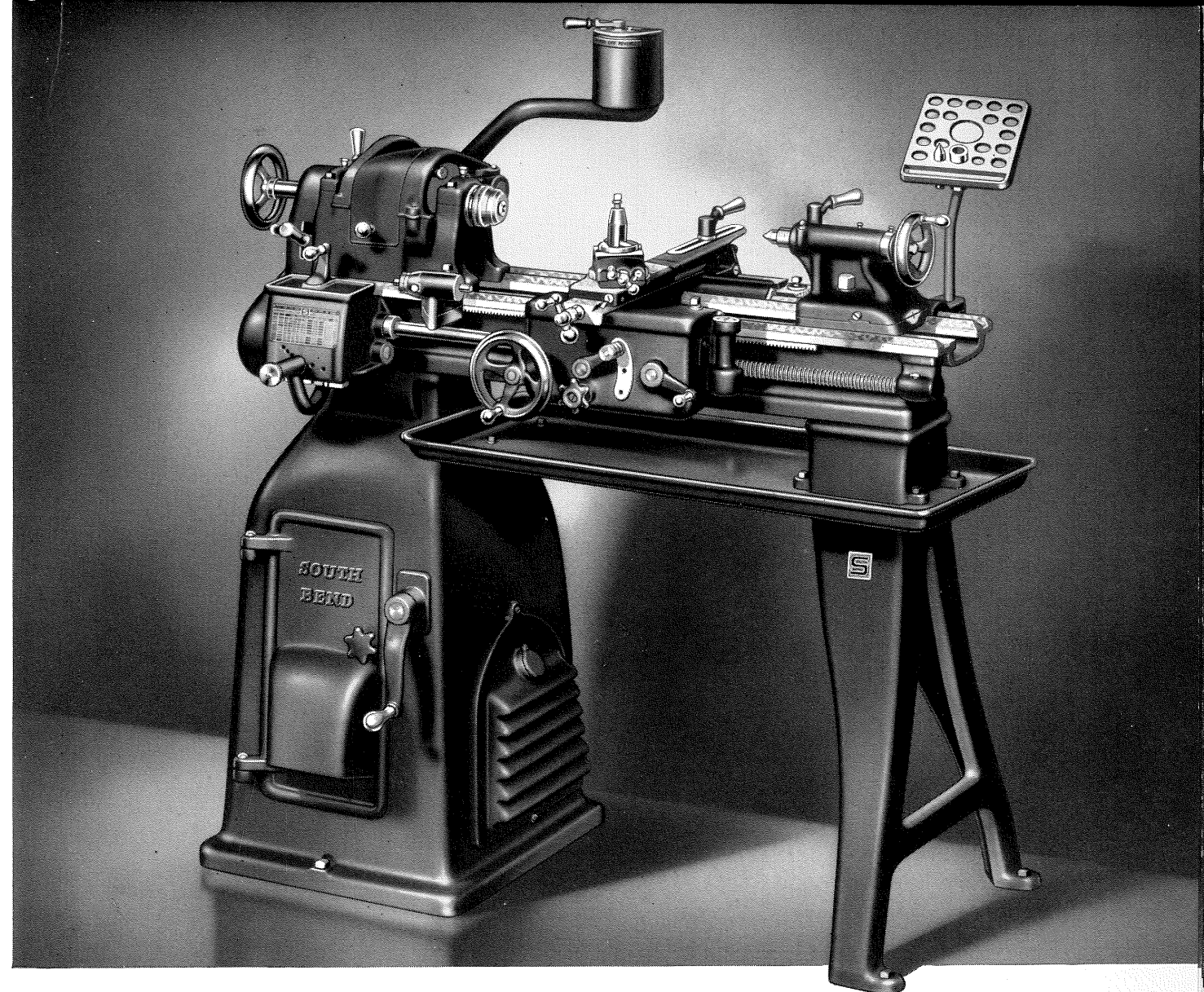
Taper Attachment (telescopic type)

Maximum length turned in one setting.....	8 1/2"
Maximum taper per foot.....	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.	
Quick change gear lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	3.0 mm
Cross feed screw pitch.....	2.5 mm
Compound rest feed screw pitch.....	2.5 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 6 to 11



9-inch Tool Room Precision Lathe—Series "T" Underneath Belt Motor Driven Type

The 9-inch Tool Room Lathe with underneath belt motor drive and full quick change gear equipment, as illustrated above, is the result of thirty-three years of experience in building fine lathes. The workmanship and materials entering into the construction of this lathe are the best that can be obtained, and the highest standards of accuracy are maintained throughout its manufacture. See page 54 for specifications.

The Underneath Motor Drive is especially desirable for Tool Room Lathes. This fully enclosed drive provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

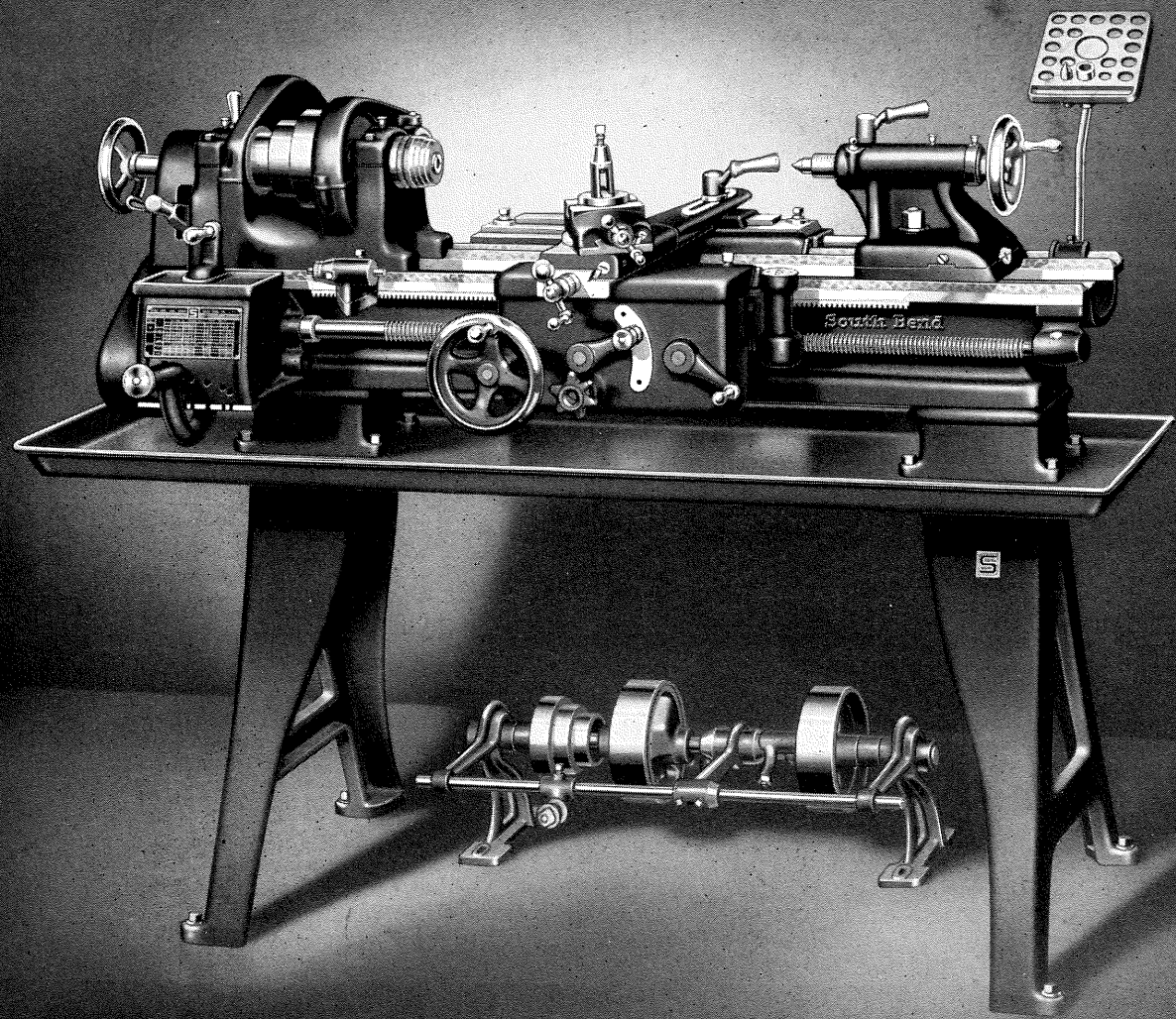
for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

Attachments included in the price of this Tool Room Lathe consist of hand wheel type draw-in collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price consists of 1/3 H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

9-inch Underneath Motor Driven Tool Room Lathes			
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*
Distance Between Centers.....	16 3/8-in.	21 3/8-in.	27 3/8-in.
Catalog Number.....	8109-Y	8109-Z	8109-A
Shipping Weight of Lathe.....	905 lbs.	935 lbs.	965 lbs.
Code Word.....	Radet	Ragat	Rasod

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



9-inch Tool Room Precision Lathe—Series "T" Countershaft Driven Type

The 9-inch Tool Room Lathe with countershaft drive and full quick change gear equipment represents the maximum tool room lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe. See page 54 for complete specifications of this lathe.

The 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. Six spindle speeds forward and six spindle speeds in reverse are available. Many mechanics prefer the countershaft drive because of the ease with which the lathe spindle may be revolved by pulling the belt by hand.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and friction disc clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; full quick change gear mechanism

for threads and feeds, and semi-steel lathe bed. See illustrations and description on pages 7 to 11.

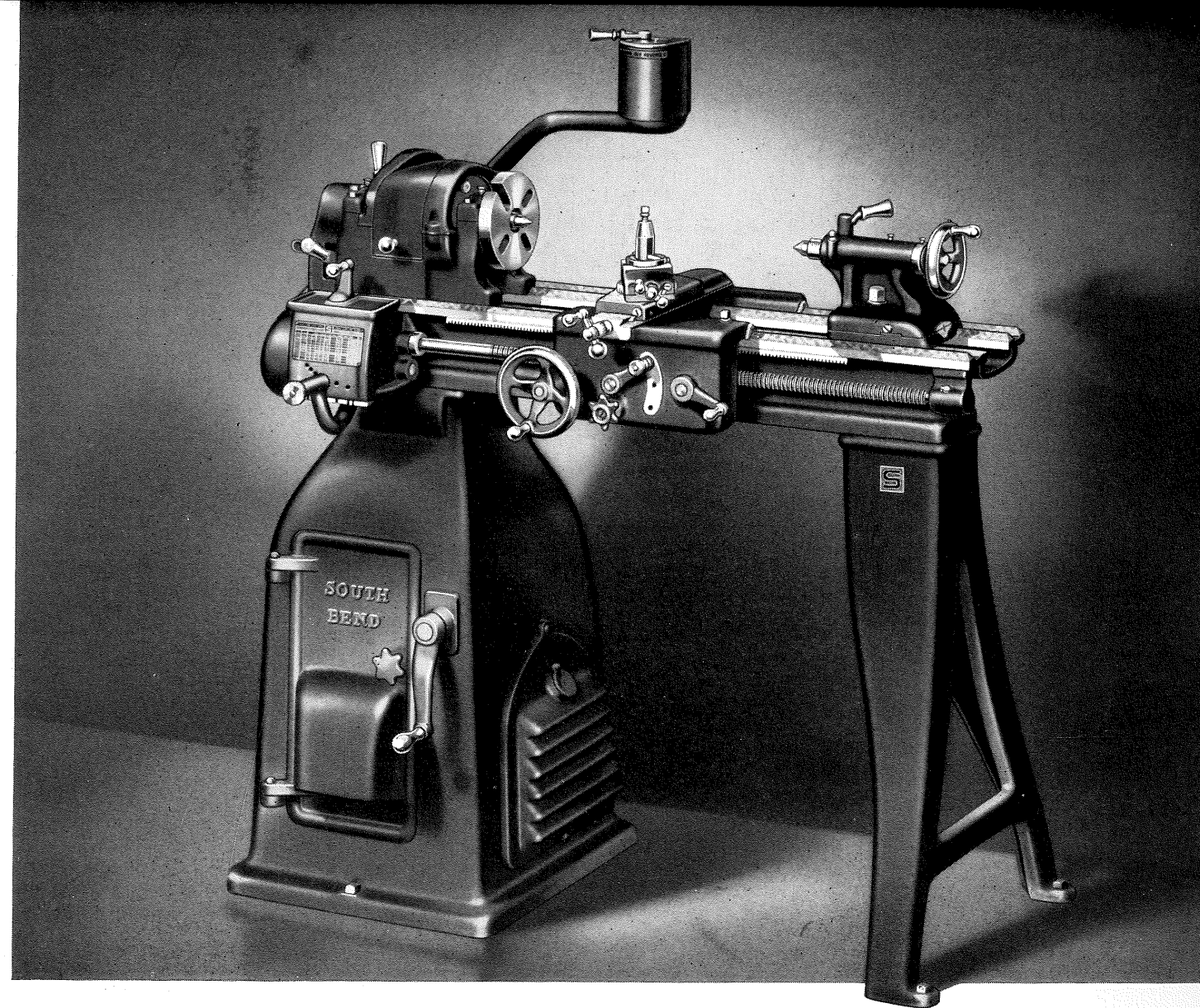
Attachments included in the price of this Tool Room Lathe consist of hand wheel type collet attachment with one collet, collet rack, telescopic taper attachment, thread dial indicator, chip pan, and micrometer carriage stop. See pages 90 to 111.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

9-inch Countershaft Driven Tool Room Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.
Catalog Number.....	8009-Y	8009-Z	8009-A
Shipping Weight of Lathe.....	620 lbs.	650 lbs.	680 lbs.
Code Word.....	Arkeg	Arlag	Asyhb

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



9-inch Underneath Motor Driven Precision Lathe—Series "T" Quick Change Gear and Standard Change Gear Types

The 9-inch Lathe with underneath belt motor drive is popular for both production operations and tool room work. This lathe is made in the Quick Change Gear Type as illustrated, also in the Standard Change Gear Type as listed below. See page 54 for complete specifications of this lathe.

The Underneath Motor Drive is entirely self-contained and is fully enclosed. It provides an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 4 for description of motor drive.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe.

Regular Equipment included in price consists of ⅓ H.P. instant reversing ball bearing motor, re-

versing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe."

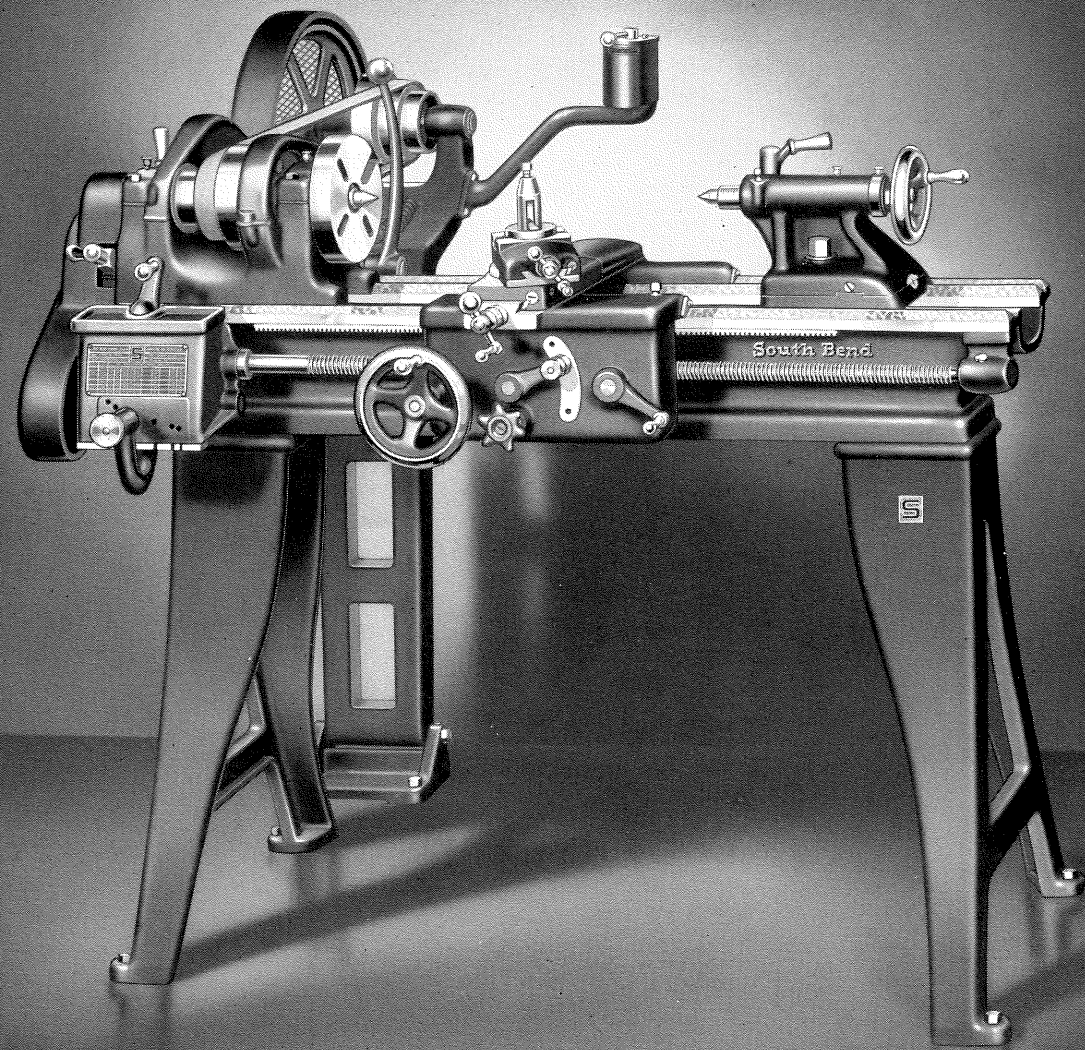
Quick Change Gear
9-inch Underneath Motor Driven Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	109-Y	109-Z	109-A	109-R
Shipping Weight of Lathe.....	780 lbs.	805 lbs.	830 lbs.	855 lbs.
Code Word.....	Binug	Bipca	Bipgo	Bireg

Standard Change Gear
9-inch Underneath Motor Driven Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	107-Y	107-Z	107-A	107-R
Shipping Weight of Lathe.....	770 lbs.	795 lbs.	820 lbs.	845 lbs.
Code Word.....	Bagim	Bagko	Bagos	Bahar

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



9-inch Quick Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 9-inch Quick Change Gear Lathe with pedestal motor drive is recommended to those who desire an excellent motor driven lathe at a reasonable price. The full quick change gear box provides an unusually wide range of screw threads and power feeds. See page 7 for description of gear box.

The Pedestal Motor Drive is convenient, efficient and practical. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. A precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

pages 7 to 11 for additional features, and page 54 for specifications of this lathe.

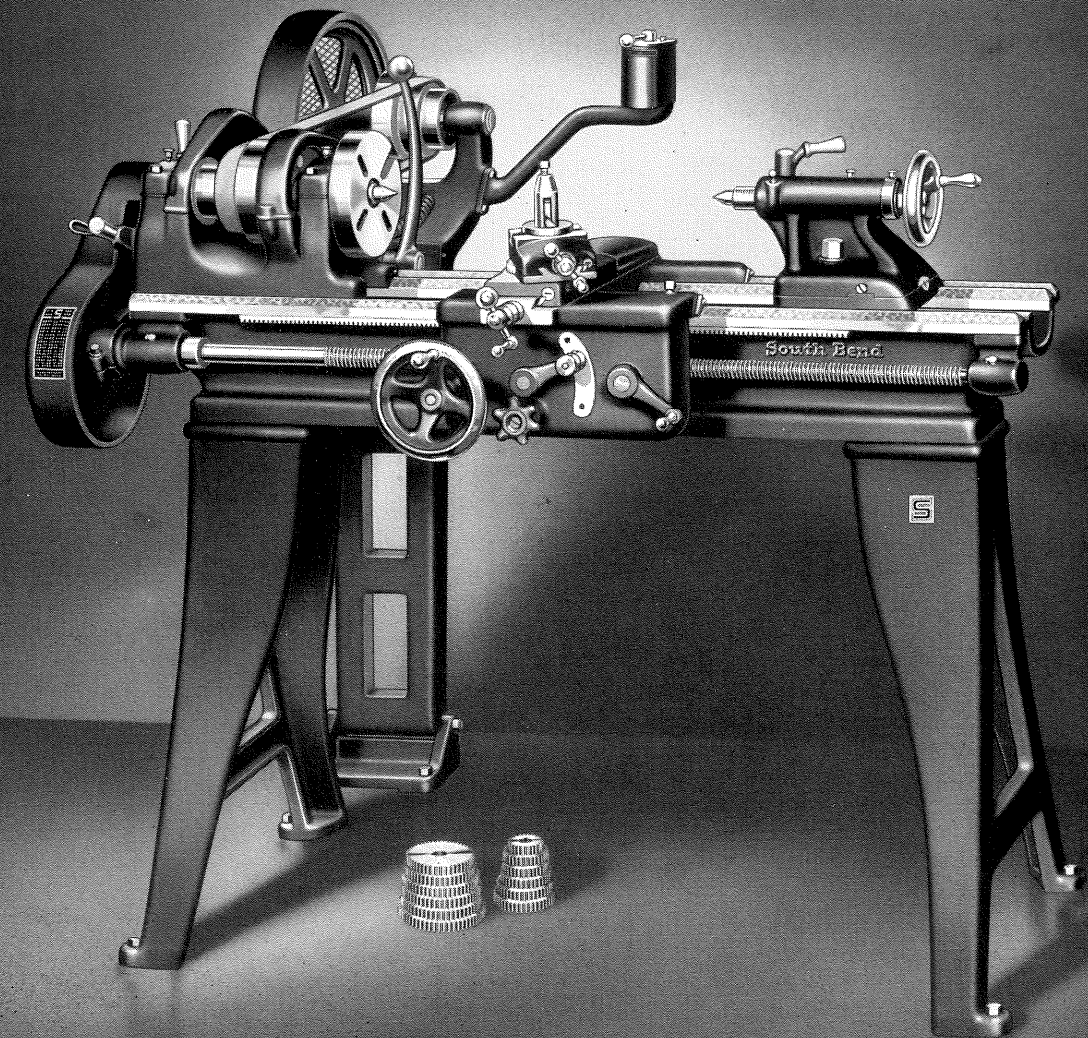
Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1/3 H.P. instant reversing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box, installation plan, and book "How to Run a Lathe."

9-inch Quick Change Gear Pedestal Motor Driven Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers.....	16 3/8-in.	21 3/8-in.	27 3/8-in.	34 3/8-in.
Catalog Number.....	909-Y	909-Z	909-A	909-R
Shipping Weight of Lathe.....	675 lbs.	700 lbs.	725 lbs.	750 lbs.
Code Word.....	Cegek	Ceken	Cerul	Ceral

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



9-inch Standard Change Gear Precision Lathe—Series "T" Pedestal Motor Driven Type

The 9-inch Standard Change Gear Lathe with pedestal motor drive is very attractively priced. This lathe is recommended for both production operations and general machine work. A set of independent change gears supplied with the lathe provides a wide range of right and left hand screw threads and power feeds. See page 6 for description.

The Pedestal Motor Drive is exceptionally convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull entirely free from gear vibration. See page 5.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars; and semi-steel

lathe bed. See pages 6 to 11 for additional features, and page 54 for specifications of this lathe.

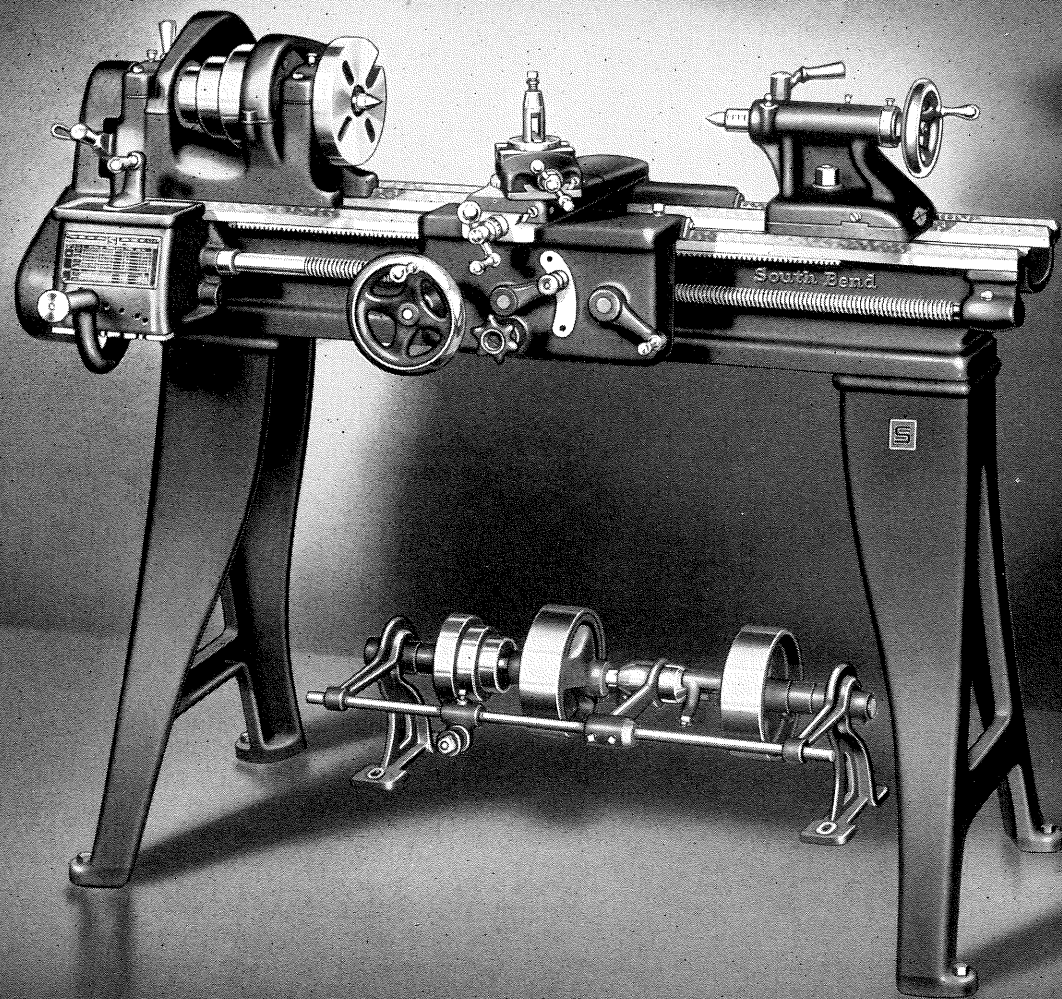
Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of 1/3 H.P. instant reversing motor, reversing switch, wiring, V-belt, flat leather belt, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

9-inch Standard Change Gear Pedestal Motor Driven Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers.....	16 3/8-in.	21 3/8-in.	27 3/8-in.	34 3/8-in.
Catalog Number.....	907-Y	907-Z	907-A	907-R
Shipping Weight of Lathe.....	665 lbs.	690 lbs.	715 lbs.	740 lbs.
Code Word.....	Birol	Bitol	Bivil	Biwar

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



9-inch Quick Change Gear Precision Lathe—Series "T" Countershaft Driven Type

The 9-inch Quick Change Gear Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is an appealing feature of this lathe and accounts for its popularity for use in large industrial plants.

The 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. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

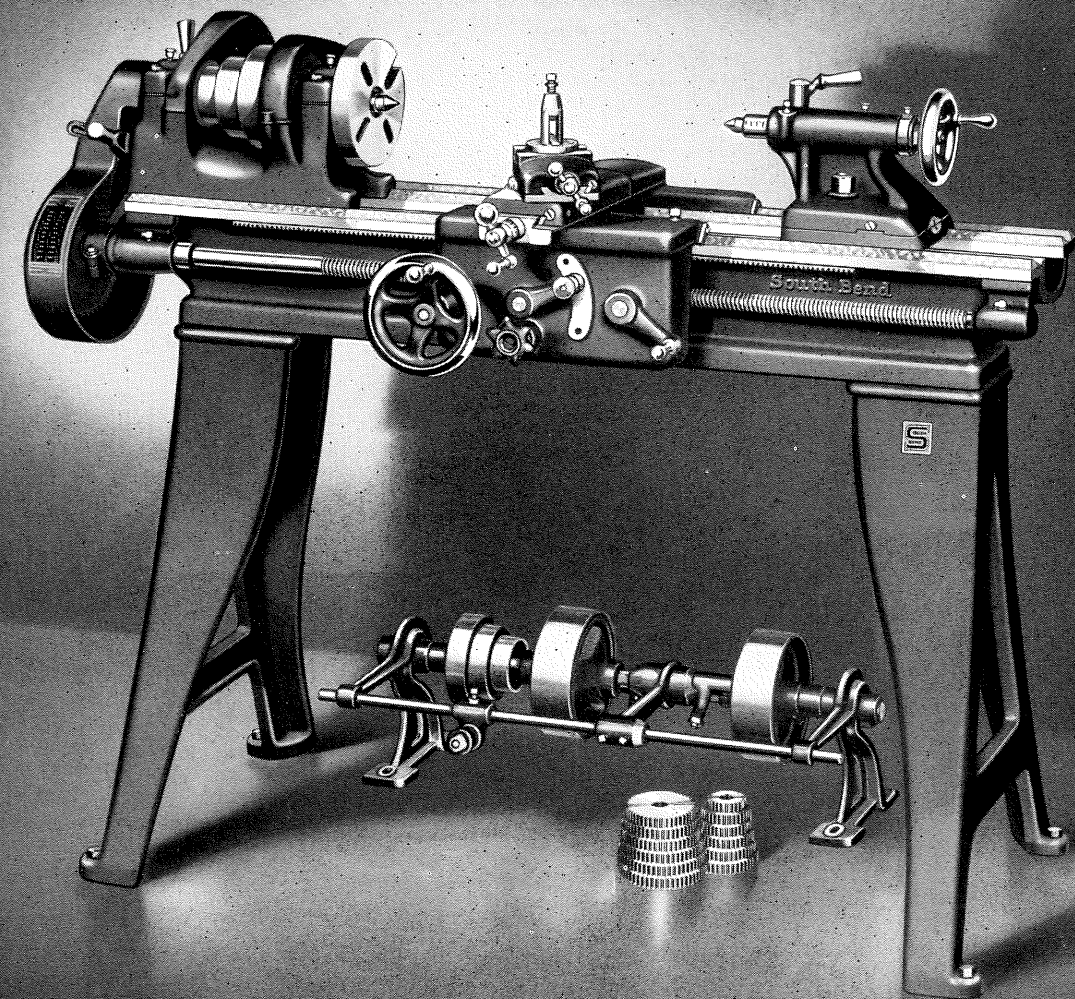
pages 7 to 11 for additional features, and page 54 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe."

9-inch Quick Change Gear Countershaft Driven Lathes				
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	9-Y	9-Z	9-A	9-R
Shipping Weight of Lathe.....	495 lbs.	520 lbs.	545 lbs.	570 lbs.
Code Word.....	Alzor	Amalt	Ambel	Ambon

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



9-inch Standard Change Gear Precision Lathe—Series "T" Countershaft Driven Type

The 9-inch Standard Change Gear Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for both production operations and general machine work.

The 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. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See

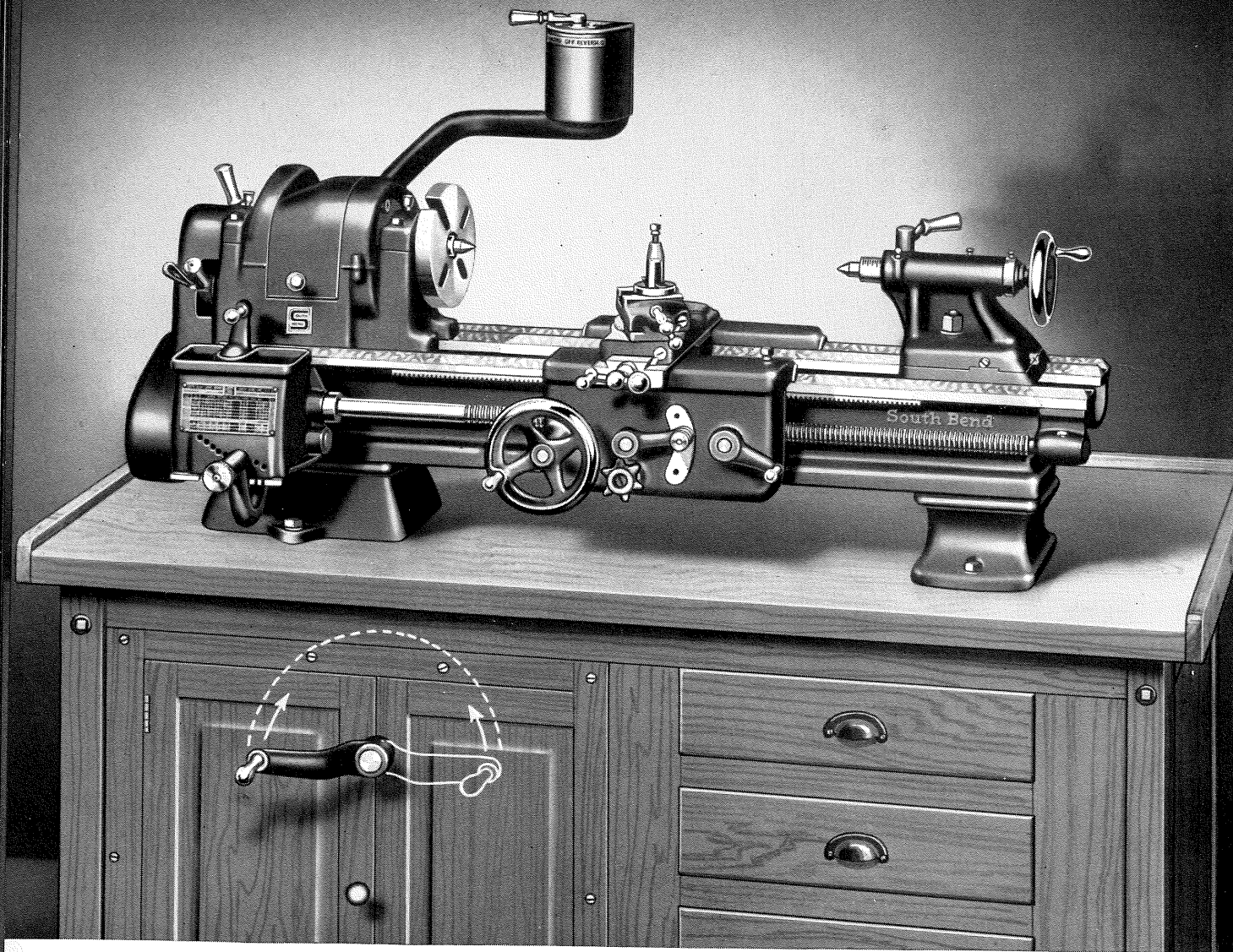
pages 6 to 11 for additional features, and page 54 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two friction clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan, and book "How to Run a Lathe."

9-inch Standard Change Gear Countershaft Driven Lathes				
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers.....	16¾-in.	21¾-in.	27¾-in.	34¾-in.
Catalog Number.....	7-Y	7-Z	7-A	7-R
Shipping Weight of Lathe.....	485 lbs.	510 lbs.	535 lbs.	560 lbs.
Code Word.....	Arfeb	Argab	Argof	Arjig

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



9-inch Underneath Motor Driven Precision Bench Lathe Quick Change Gear and Standard Change Gear Types—Series "T"

The 9-inch Bench Lathe with underneath belt motor drive is popular for industrial use as it is unusually substantial and powerful. This lathe is made in Quick Change Gear type as illustrated, also in Standard Change Gear type, as listed below. See page 54 for specifications of lathe.

The Underneath Motor Drive is unusually compact and is the same as the underneath motor drive for floor leg lathes as illustrated on page 4, except that it is mounted underneath the bench top.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price consists of 1/3 H.P. instant reversing ball bearing motor, reversing switch, wiring, V-belt, flat leather belt, large

and small face plates, forged steel heat treated tool post, thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan and book "How to Run a Lathe." Bench is not included.

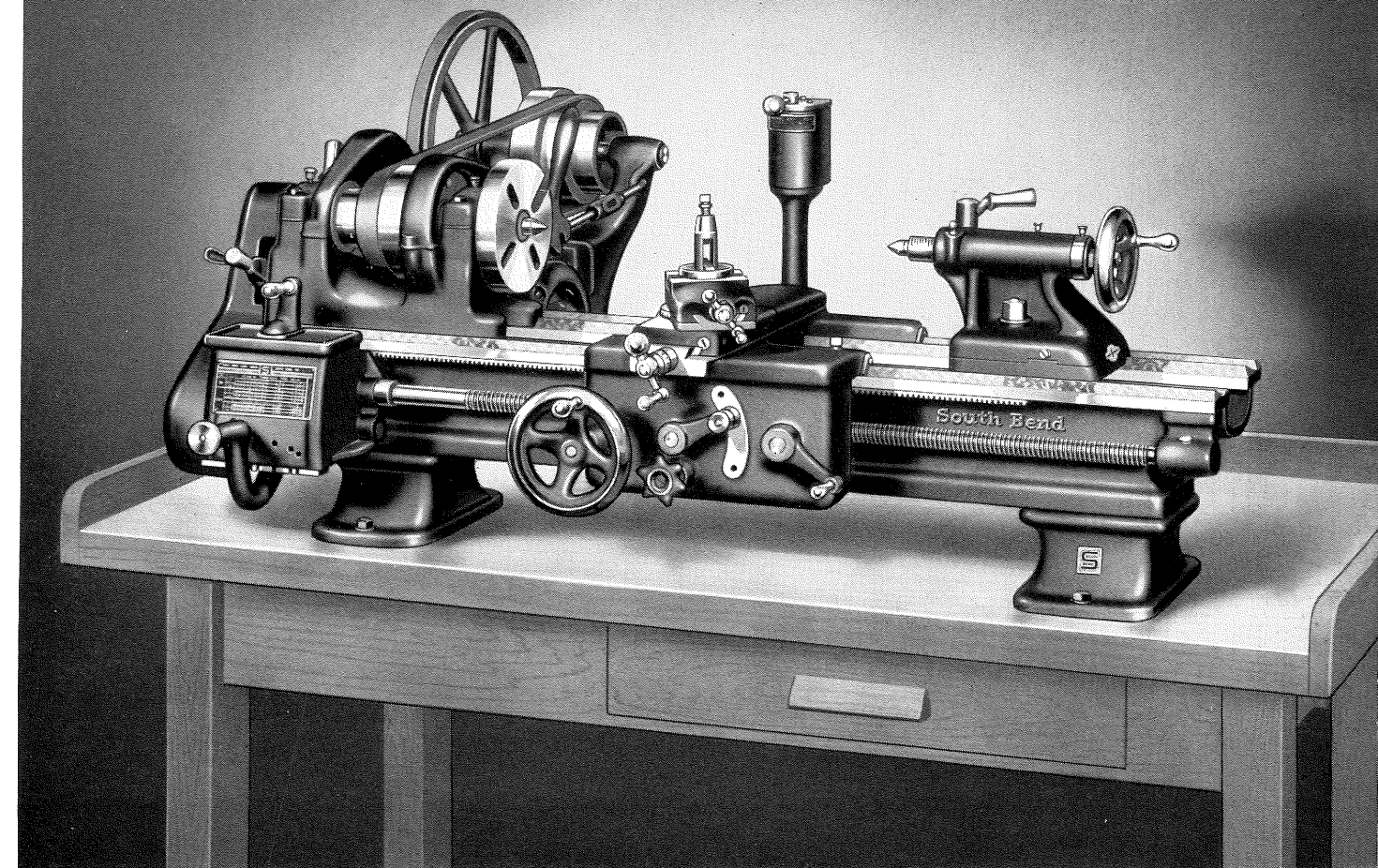
Quick Change Gear

9-inch Underneath Belt Motor Driven Bench Lathes				
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers....	16 3/8-in.	21 3/8-in.	27 3/8-in.	34 3/8-in.
Catalog Number.....	109-YB	109-ZB	109-AB	109-RB
Shipping Weight of Lathe....	615 lbs.	640 lbs.	665 lbs.	690 lbs.
Code Word.....	Cegop	Cehes	Cerex	Cesip

Standard Change Gear

9-inch Underneath Belt Motor Driven Bench Lathes				
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers....	16 3/8-in.	21 3/8-in.	27 3/8-in.	34 3/8-in.
Catalog Number.....	107-YB	107-ZB	107-AB	107-RB
Shipping Weight of Lathe....	605 lbs.	630 lbs.	655 lbs.	680 lbs.
Code Word.....	Cafiz	Cahog	Cecon	Cedam

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



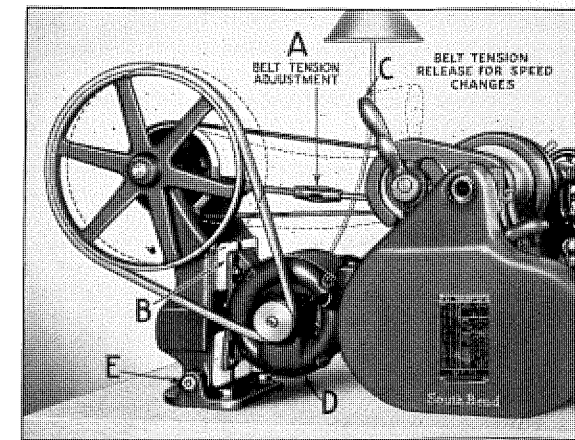
9-inch Horizontal Motor Driven Precision Bench Lathe Quick Change Gear and Standard Change Gear Types—Series "T"

The 9-inch Lathe with horizontal motor drive is very attractively priced. This lathe is made in the Quick Change Gear Type as illustrated, also in Standard Change Gear Type as listed below.

The Horizontal Motor Drive is convenient and efficient. It permits easy shifting of the cone pulley belt, providing an unusually wide range of spindle speeds. Precision belt tension adjustment is provided. The belt drive to the spindle is silent in operation and develops a smooth, steady pull.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe.

Regular Equipment included in price of this lathe consists of 1/3 H.P. instant reversing motor, reversing switch, wiring, V-belt, leather belt, large and small face plates, tool post, thread cutting stop, centers for headstock and tailstock spindles, spindle sleeve, wrenches, quick change gear box or set of independent change gears, installation plan, and book "How to Run a Lathe." Bench not included. See page 54 for specifications of lathe.



End View of Lathe Showing Adjustable Horizontal Motor Drive

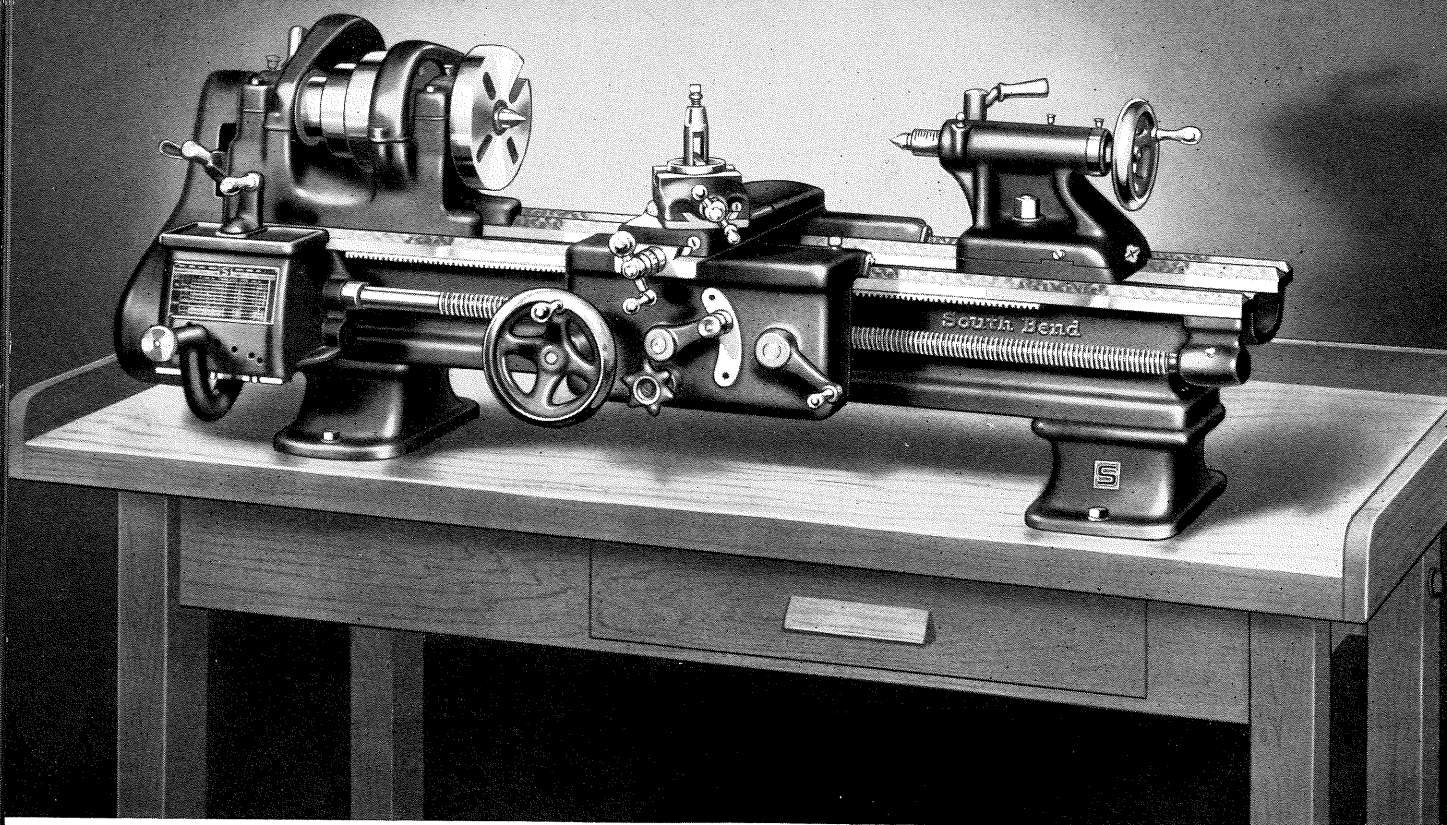
Standard Change Gear

9-inch Horizontal Motor Driven Bench Lathes				
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers....	16 3/8-in.	21 3/8-in.	27 3/8-in.	34 3/8-in.
Catalog Number.....	407-Y	407-Z	407-A	407-R
Shipping Weight of Lathe....	481 lbs.	506 lbs.	531 lbs.	556 lbs.
Code Word.....	Lefaw	Lefok	Lefug	Legok

Quick Change Gear

9-inch Horizontal Motor Driven Bench Lathes				
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers....	16 3/8-in.	21 3/8-in.	27 3/8-in.	34 3/8-in.
Catalog Number.....	409-Y	409-Z	409-A	409-R
Shipping Weight of Lathe....	491 lbs.	516 lbs.	541 lbs.	566 lbs.
Code Word.....	Kefan	Kefup	Kehaw	Kehok

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



9-inch Quick Change Gear Precision Bench Lathe—Series "T" Overhead Countershaft Driven Type

The 9-inch Quick Change Gear Bench Lathe with countershaft drive represents the maximum lathe value per dollar of cost for the shop that is equipped with a lineshaft for power. Economy of operation is another appealing feature of this lathe.

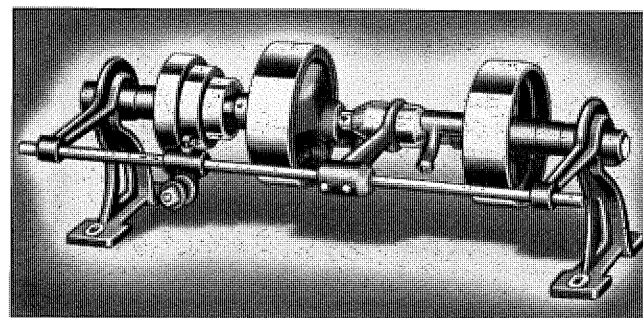
The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See pages 7 to 11 for additional features, and page 54 for specifications of this lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two fric-

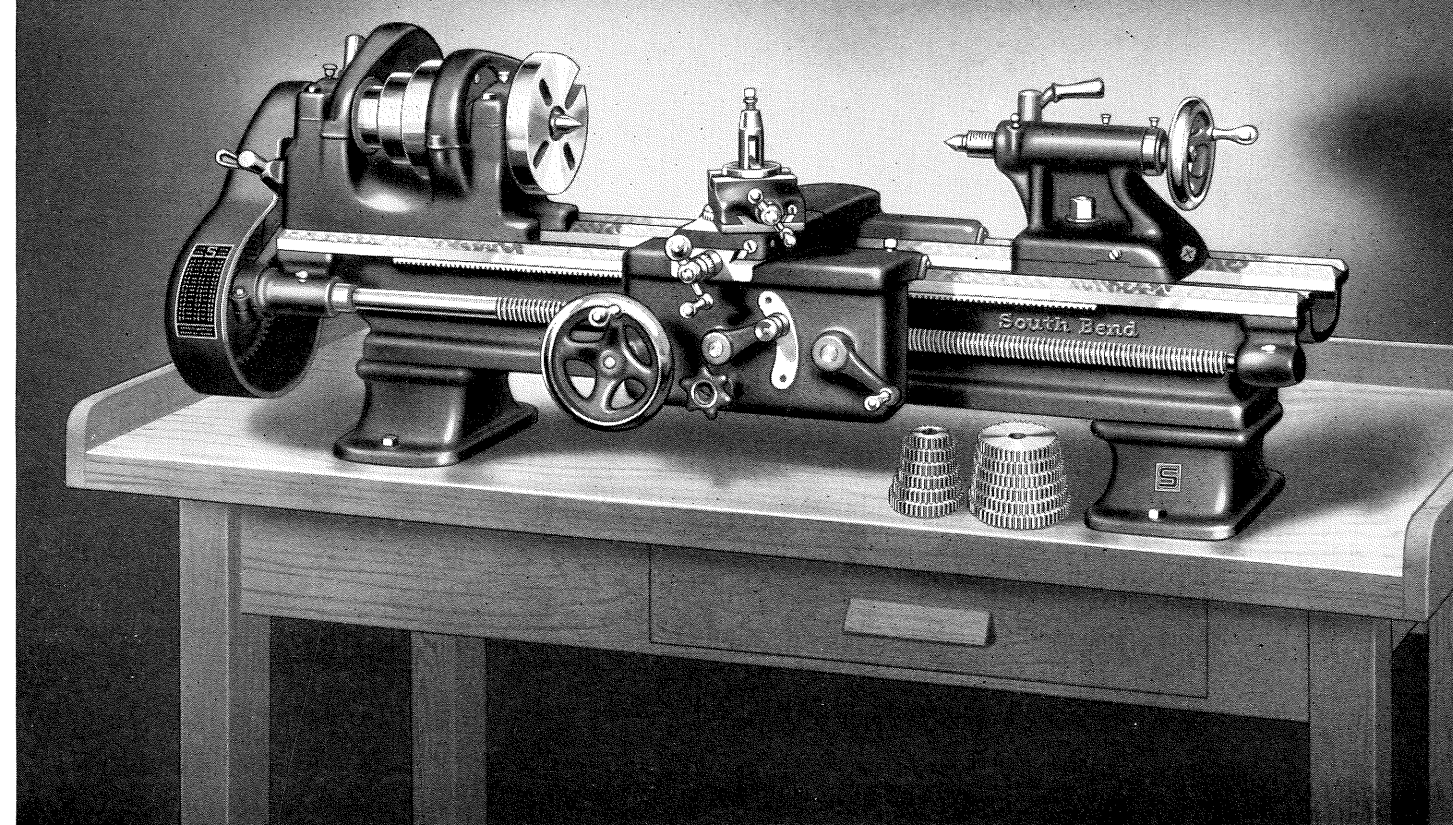
tion clutch pulleys, large and small face plates, forged steel heat treated tool post, thread cutting stop, tool steel centers for headstock and tailstock spindles, spindle sleeve, wrenches, gear box, installation plan, and book "How to Run a Lathe." Bench not included.



Double Friction Countershaft for Lathes

9-inch Quick Change Gear Countershaft Driven Bench Lathes				
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	16 ¾-in.	21 ¾-in.	27 ¾-in.	34 ¾-in.
Catalog Number.....	9-YB	9-ZB	9-AB	9-RB
Shipping Weight of Lathe....	430 lbs.	455 lbs.	480 lbs.	505 lbs.
Code Word.....	Abafe	Abalk	Abapo	Abats

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



9-inch Standard Change Gear Precision Bench Lathe—Series "T" Overhead Countershaft Driven Type

The 9-inch Standard Change Gear Bench Lathe with countershaft drive is recommended to those who need a lathe of unquestionable accuracy, yet prefer to keep both the first cost and the cost of operation at a minimum. This lathe is practical for production operations and general machine work.

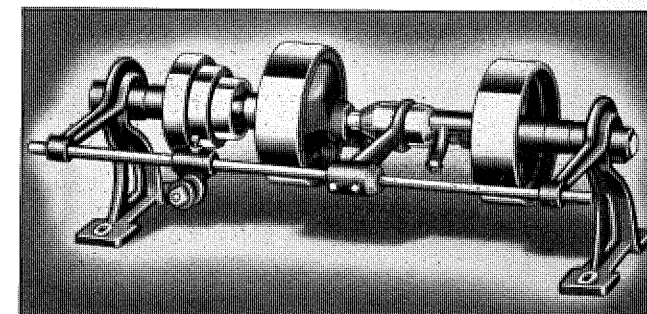
The Countershaft has two friction clutch pulleys, one of which may be driven with an open belt and the other with a crossed belt, which permits the lathe to be operated forward and in reverse. Six spindle speeds forward and six in reverse are available.

Improved Features of lathe include alloy steel headstock spindle, carburized, hardened and ground; double wall apron with all gears of steel and multiple disc friction clutch for operating automatic cross feeds and automatic longitudinal feeds; easy reading micrometer graduated collars, and semi-steel lathe bed. See pages 6 to 11 for additional features, and page 54 for specifications of lathe.

Attachments, Chucks and Tools for this lathe are listed on pages 90 to 111. This complete line of attachments and accessories greatly increases the usefulness of the lathe. Most of the attachments may be purchased either with the lathe or later.

Regular Equipment included in price of this lathe consists of reversing countershaft with two fric-

tion clutch pulleys, large and small face plates, forged steel heat treated tool post, adjustable thread cutting stop, tool steel centers for headstock and tailstock spindles, headstock spindle sleeve, wrenches, set of independent change gears, installation plan and book "How to Run a Lathe." Bench not included.



Double Friction Countershaft for Lathes

9-inch Standard Change Gear Countershaft Driven Bench Lathes				
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	16 ¾-in.	21 ¾-in.	27 ¾-in.	34 ¾-in.
Catalog Number.....	7-YB	7-ZB	7-AB	7-RB
Shipping Weight of Lathe....	420 lbs.	445 lbs.	470 lbs.	495 lbs.
Code Word.....	Abede	Abeno	Abers	Abetu

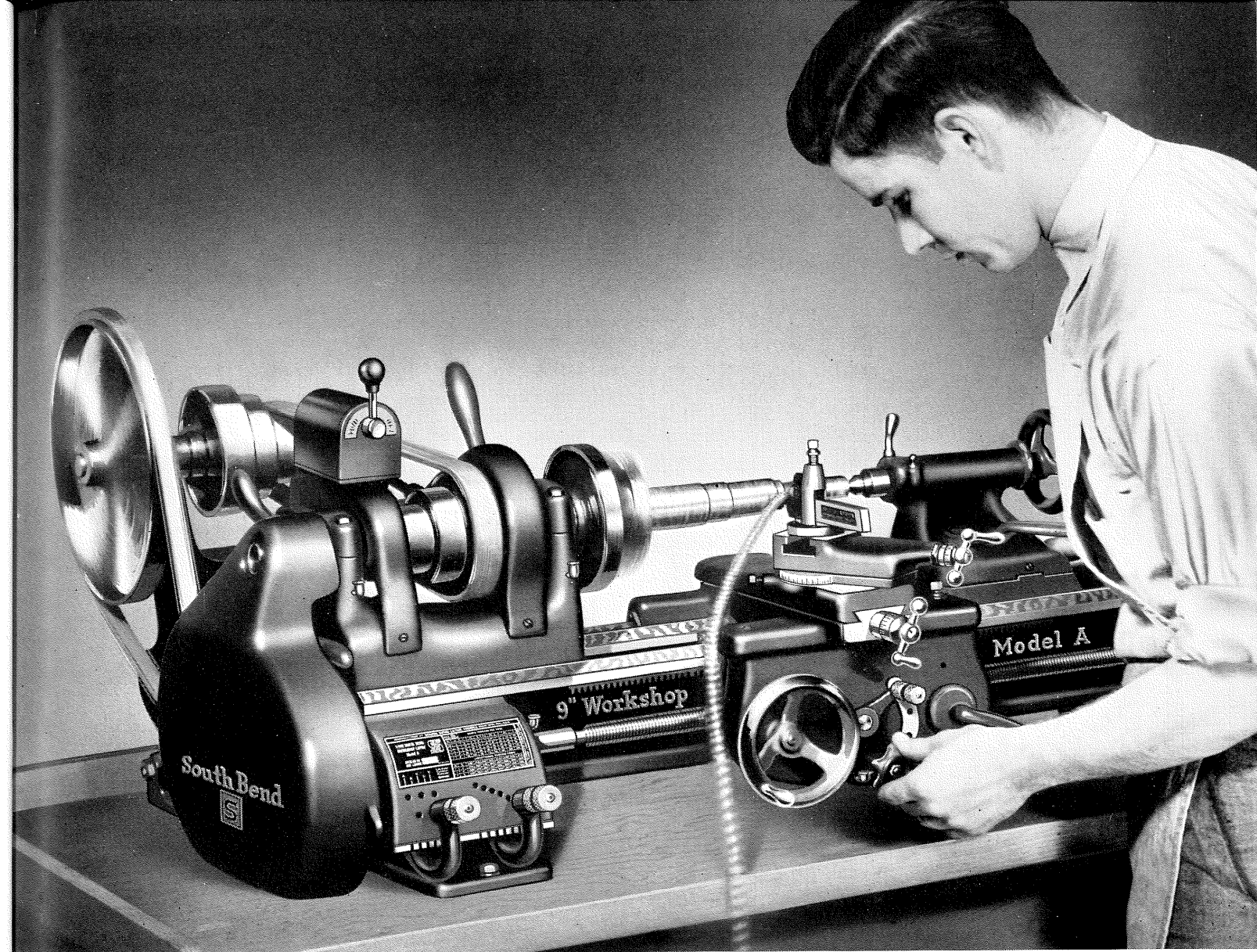
*NOTE—The 3½' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.

Specifications of Model A, Model B, and Model C 9-inch "Workshop" Precision Lathes

Applying to all 9-inch "Workshop" Lathes Shown on Pages 70 to 79

Capacity of Lathe	
Swing over bed and saddle wings.....	9 1/4"
Swing over saddle cross slide.....	5 1/2"
Threads and Feeds	
Model A Lathe—Quick Change Gear and Automatic Apron	
Threads—48 selections R.H. or L.H.....	4 to 224 per inch
Longitudinal Feeds—friction clutch—32 selections R.H. or L.H.....	.0015" to .0213"
Cross Feeds—friction clutch—32 selections R.H. or L.H.....	.0004" to .0063"
Model B Lathe—Automatic Apron—Independent Change Gears	
Threads—45 selections R.H. or L.H.....	4 to 160 per inch
Longitudinal Feeds—friction clutch—26 selections R.H. or L.H.....	.0021" to .0155"
Cross Feeds—friction clutch—23 selections.....	.001" to .0046"
Model C Lathe—Plain Apron and Independent Change Gears	
Threads—45 selections R.H. or L.H.....	4 to 160 per inch
Longitudinal Feeds—through half-nuts and lead screw—14 feeds R.H. or L.H.....	.0021" to .0156"
Cross Feeds.....	Hand operated
Size of Lead Screw, diameter, and threads per inch.....	3/4"-8
Headstock	
Hole through spindle.....	3/4"
Maximum collet capacity.....	1/2"
Size of Center, Morse taper.....	No. 2
Spindle nose diameter and threads per inch.....	1 1/2"-8
Width of cone pulley step for belt.....	1"
Face plate diameter.....	5 1/8"
Standard Spindle Speeds	
R.P.M. of spindle, back gears engaged.....	41, 72, 127
R.P.M. of spindle, direct belt driven.....	212, 370, 658
High Spindle Speeds in addition to standard spindle speeds (Regular equipment on 12-Speed Lathes, optional on other models at extra cost)	
R.P.M. of spindle, back gears engaged.....	79, 138, 246
R.P.M. of spindle, direct belt driven.....	408, 716, 1270
Compound Rest	
Cross slide will travel.....	5 7/8"
Angular hand feed of compound rest top slide.....	2 1/4"
Tool Post	
Size of opening for tool holder shank.....	3/8" x 3/4"
Size of cutter bits tool holder takes.....	1/4" sq.
Tailstock	
Size of Morse taper centers.....	No. 2
Spindle travel.....	2 1/8"
Each graduation on tailstock spindle advances spindle.....	1/16"
Tailstock top will set over for taper turning.....	1 1/16"
Motor	
Horsepower of standard motor used on 9-inch "Workshop" motor driven lathes.....	1/4
Horsepower of motor used on 9-inch "Workshop" 12-speed motor driven lathes.....	1/2
R.P.M. of standard motor.....	1725
Number of V-belts used.....	1
Countershaft	
Speed in R.P.M. of shaft.....	300
Size of pulleys.....	6 7/8" x 2 3/16"
Taper Attachment (plain type)	
Maximum length turned in one setting.....	7"
Maximum taper per foot.....	3"
Metric Lathe Specifications	
Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.	
Quick change gear Model A Lathe cuts 46 threads R.H. or L.H.....	7.5 mm to 0.2 mm
Standard change gear Model B Lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Standard change gear Model C Lathe cuts 35 threads R.H. or L.H.....	7.0 mm to 0.2 mm
Lead screw pitch.....	3.0 mm
Cross feed screw pitch.....	2.5 mm
Compound rest feed screw pitch.....	2.5 mm
Each graduation on cross feed micrometer collar advances tool.....	0.02 mm
Each graduation on compound rest micrometer collar advances tool.....	0.02 mm
Each graduation on tailstock spindle advances spindle.....	1.0 mm

For description of lathe features see pages 67 to 69



The New Model A and Model B South Bend 9-inch "Workshop" Precision Lathes

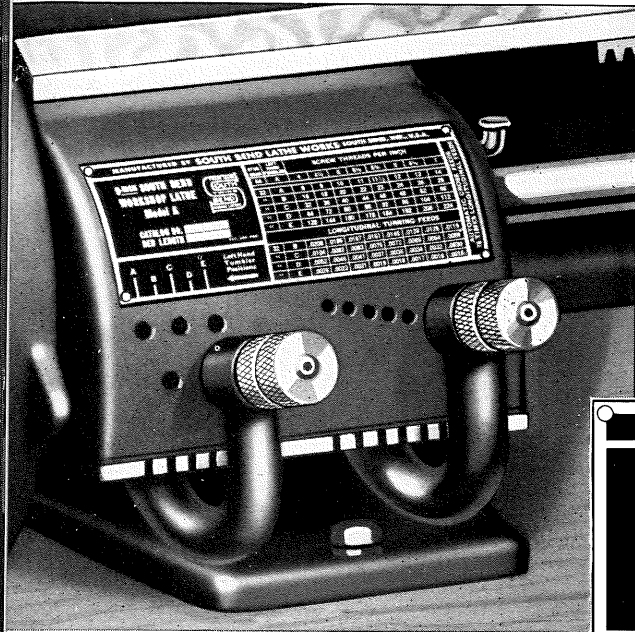
To meet the requirements of every type of shop, two new models have been added to the 9-inch "Workshop" line of South Bend Lathes. The new Model A 9-inch "Workshop" Lathes and the Model B 9-inch "Workshop" Lathes are illustrated and described on pages 70 to 79 inclusive. The popular priced Model C 9-inch "Workshop" Lathes are listed on pages 72 to 79 inclusive. All three models are the same except for the design of the apron and the change gear equipment.

The Model A "Workshop" Lathe illustrated above has full quick change gear mechanism, as described on page 68, making all threads and feeds instantly available. This model also has an automatic apron with a friction clutch for operating the power cross feed and power longitudinal feed.

The Model B "Workshop" Lathe is the same as the Model A "Workshop" Lathe except that it has a set of independent change gears for threads and feeds instead of the quick change gear box. This model also has an automatic apron with friction clutch for operating the power cross feed and power longitudinal feed.

South Bend 9-inch "Workshop" Lathes are built to the most exacting machine tool specifications and are intended for use in shops where the finest type of back-geared, screw cutting precision lathe is required. We especially recommend these lathes for precision tool work and for manufacturing parts for typewriters, adding machines, electrical instruments, radios and similar articles requiring extreme accuracy.

Quick Change Gear Box for Model A 9-inch "Workshop" Lathes



Above—Quick Change Gear Box
Right—Index Chart Showing Threads and Feeds on Quick Change Gear Lathe

Cuts Screw Threads 4 to 224 Per Inch Power Feed Range .0015" to .0213"

The full quick change gear box for the Model A 9-inch "Workshop" Lathe provides 48 changes for cutting right and left hand screw threads from 4 to 224 per inch, as listed on the index chart below. Power longitudinal feeds .0015" to .0213" and power cross feeds .0004" to .0063" are also obtained through the gear box. All gears in the gear box are made of steel.

This gear box is designed for cutting all English and American standard screw threads. For those desiring metric system screw threads, we can supply metric transposing gears, or a metric lead screw and quick change gear box. See pages 108 to 110.

MANUFACTURED BY SOUTH BEND LATHE WORKS SOUTH BEND, IND., U.S.A.		SCREW THREADS PER INCH										
9-INCH SOUTH BEND WORKSHOP LATHE Model A	TRADE MARK SOUTH BEND ENGINE LATHES	STUD GEAR	LEFT HAND TUMBLER									
		A	4	4½	5	5½	5¾	6	6½	7		
CATALOG NO. _____ BED LENGTH _____	TRADE MARK SOUTH BEND ENGINE LATHES	20	A	8	9	10	11	11½	12	13	14	
		"	B	16	18	20	22	23	24	26	28	
		"	C	32	36	40	44	46	48	52	56	
		"	D	64	72	80	88	92	96	104	112	
		"	E	128	144	160	176	184	192	208	224	
		LONGITUDINAL TURNING FEEDS										
A B C D E Left Hand Tumbler Positions	AUTOMATIC CROSS FEEDS 3 TIMES LONGITUDINAL FEEDS	20	B	.0213	.0190	.0171	.0155	.0148	.0142	.0131	.0122	
		"	C	.0107	.0095	.0085	.0078	.0074	.0071	.0066	.0061	
		"	D	.0053	.0047	.0043	.0039	.0037	.0036	.0033	.0030	
		"	E	.0027	.0024	.0021	.0019	.0019	.0018	.0016	.0015	
		"										

Change Gear Equipment for 9-inch "Workshop" Model B and Model C Lathes

CHART FOR THREADS AND FEEDS 9-INCH WORKSHOP MODEL B LATHE										
THREADS PER INCH	STUD GEAR	IDLER GEARS	SCREW GEAR	CROSS FEEDS	LONG. FEEDS					
4	24	FIG. 1	48							
4½	24	FIG. 1	54							
5	16	FIG. 1	40							
5½	16	FIG. 1	44							
6	16	FIG. 1	48							
6½	16	FIG. 1	52							
7	16	FIG. 1	56							
7½	16	FIG. 1	60							
8	32	FIG. 2	32							
9	32	FIG. 2	36							
10	32	FIG. 2	40							
11	32	FIG. 2	44							
11½	32	FIG. 2	46							
12	32	FIG. 2	48							
13	32	FIG. 2	52							
14	32	FIG. 2	56							
16	24	FIG. 2	48							
18	24	FIG. 2	54							
20	16	FIG. 2	40							
22	16	FIG. 2	44	.0046	.0155					
24	16	FIG. 2	48	.0042	.0142					
26	16	FIG. 2	52	.0039	.0131					
27	16	FIG. 2	54	.0037	.0126					
30	16	FIG. 3	60	.0034	.0114					
32	32	FIG. 3	32	.0031	.0107					
36	32	FIG. 3	36	.0028	.0095					
40	32	FIG. 3	40	.0025	.0085					
44	32	FIG. 3	44	.0023	.0078					
46	32	FIG. 3	46	.0022	.0074					
48	32	FIG. 3	48	.0021	.0071					
52	32	FIG. 3	52	.0019	.0066					
54	32	FIG. 3	54	.0019	.0063					
56	32	FIG. 3	56	.0018	.0061					
60	32	FIG. 3	60	.0017	.0057					
64	16	FIG. 3	32	.0016	.0053					
72	16	FIG. 3	36	.0014	.0047					
80	16	FIG. 3	40	.0013	.0043					
88	16	FIG. 3	44	.0011	.0039					
92	16	FIG. 3	46	.0011	.0037					
96	16	FIG. 3	48	.0010	.0036					
104	16	FIG. 3	52	.0010	.0033					
112	16	FIG. 3	56	.0010	.0030					
120	16	FIG. 3	60	.0008	.0028					
160	16	FIG. 4	80	.0002	.0021					

Index Chart Showing Threads and Feeds on "Workshop" Model B Lathe

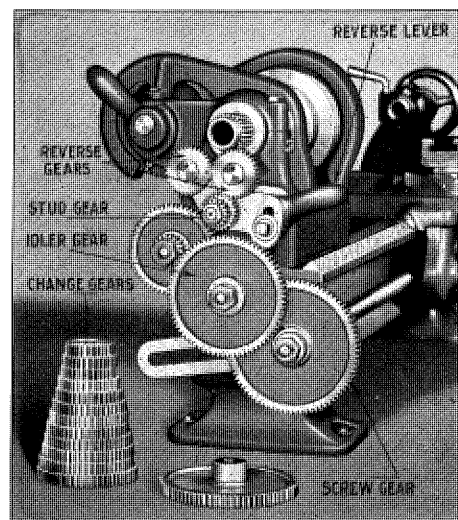
All 9-inch "Workshop" Model B and Model C Lathes are equipped with a set of independent change gears, which provide a wide range of screw thread feeds. Model B Lathes have an automatic apron (as described on page 69) providing instantaneous power longitudinal feeds or power cross feeds. On Model C Lathes the power longitudinal feeds are obtained by engaging the half-nut and lead screw. Cross feed is hand operated on the Model C Lathes.

An index chart attached to the lathe shows the arrangement of the change gears for the various screw threads, and power longitudinal feeds. Power cross feeds are shown on Model B index chart.

Screw threads cut on the Model B and Model C "Workshop" Lathes range from 4 to 160 per inch right or left hand, including 11½ and 27 pipe threads, as listed on the index chart.

The automatic power longitudinal turning feeds available on the "Workshop" Model B and Model C Lathes range from .0021" to .0155".

The automatic power cross feeds available on the Model B 9-inch "Workshop" Lathes range from .001" to .0046".



Gear Guard Removed to Show Plain Change Gear Equipment For All "Workshop" Model B and Model C Lathes

SOUTH BEND LATHE WORKS

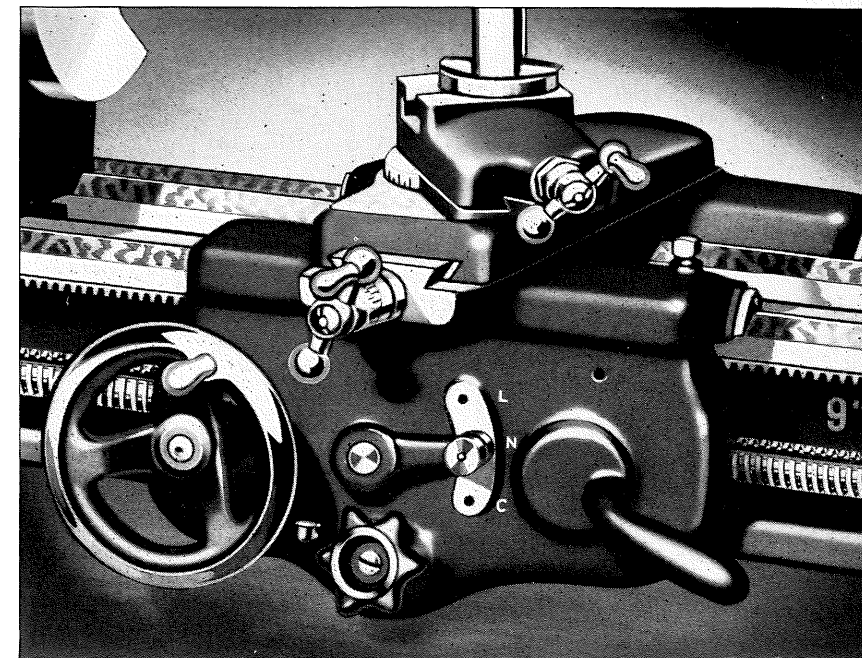
Automatic Apron for Models A and B 9-inch "Workshop" Lathes

Friction Clutch Drive for Power Cross Feeds and Power Longitudinal Feeds

The full automatic apron supplied with all Model A Quick Change Gear Type, and Model B Plain Change Gear Type South Bend 9-inch "Workshop" Lathes is equipped with a powerful friction clutch drive for operating both the automatic power cross feeds and the automatic power longitudinal feeds. The friction clutch drive permits engaging or disengaging instantly either the power cross feed or power longitudinal feed.

The feed change knob on the front of the apron has three positions: top for the automatic power longitudinal feeds; center for a neutral position, and bottom for the automatic power cross feeds. It is impossible to engage both feeds at the same time.

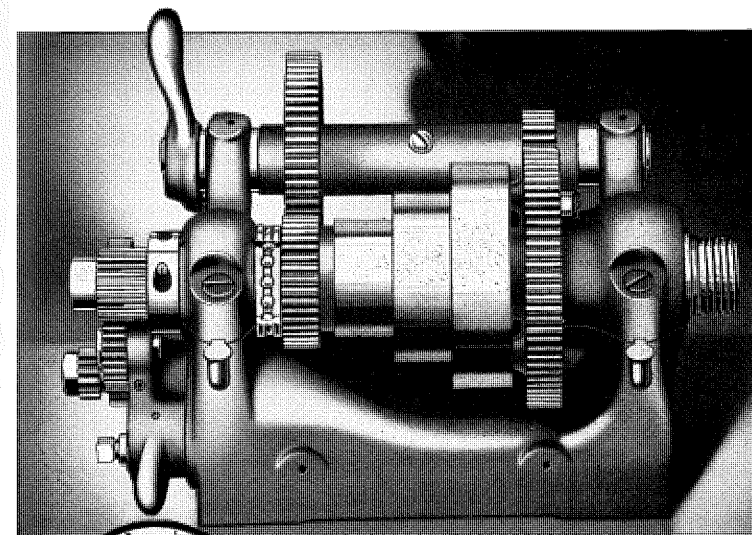
The power cross feeds and power longitudinal feeds are both operated by a worm which is driven by a spline in the lead screw. The threads of the lead screw and the half-nuts are used only when cutting screw threads. An automatic safety interlock prevents engaging the power carriage feeds while the half-nuts are in use.



Full Automatic Apron for 9-inch "Workshop" Lathes

Back-Geared Headstock Has Heat Treated Spindle

Improved Capillary Oiling System Assures Long Life

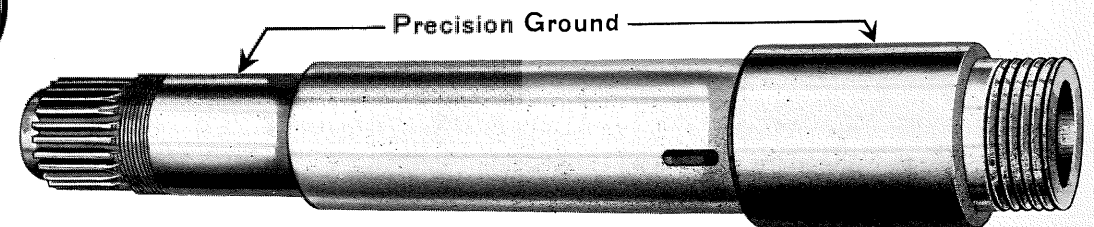


Above. Back-Geared Headstock for 9" "Workshop" Lathe, Guards Removed
Left. Ball Thrust Bearing for Spindle

All 9-inch "Workshop" Lathe headstocks are back-geared and have heat treated alloy steel spindles with precision ground bearing surfaces having a hardness of 40 to 45 on Rockwell C scale. The spindle runs in integral cast iron bearings that are equipped with an improved capillary oiling system and are adjustable for wear. The ball thrust bearing and the threaded take-up nut eliminate end play.

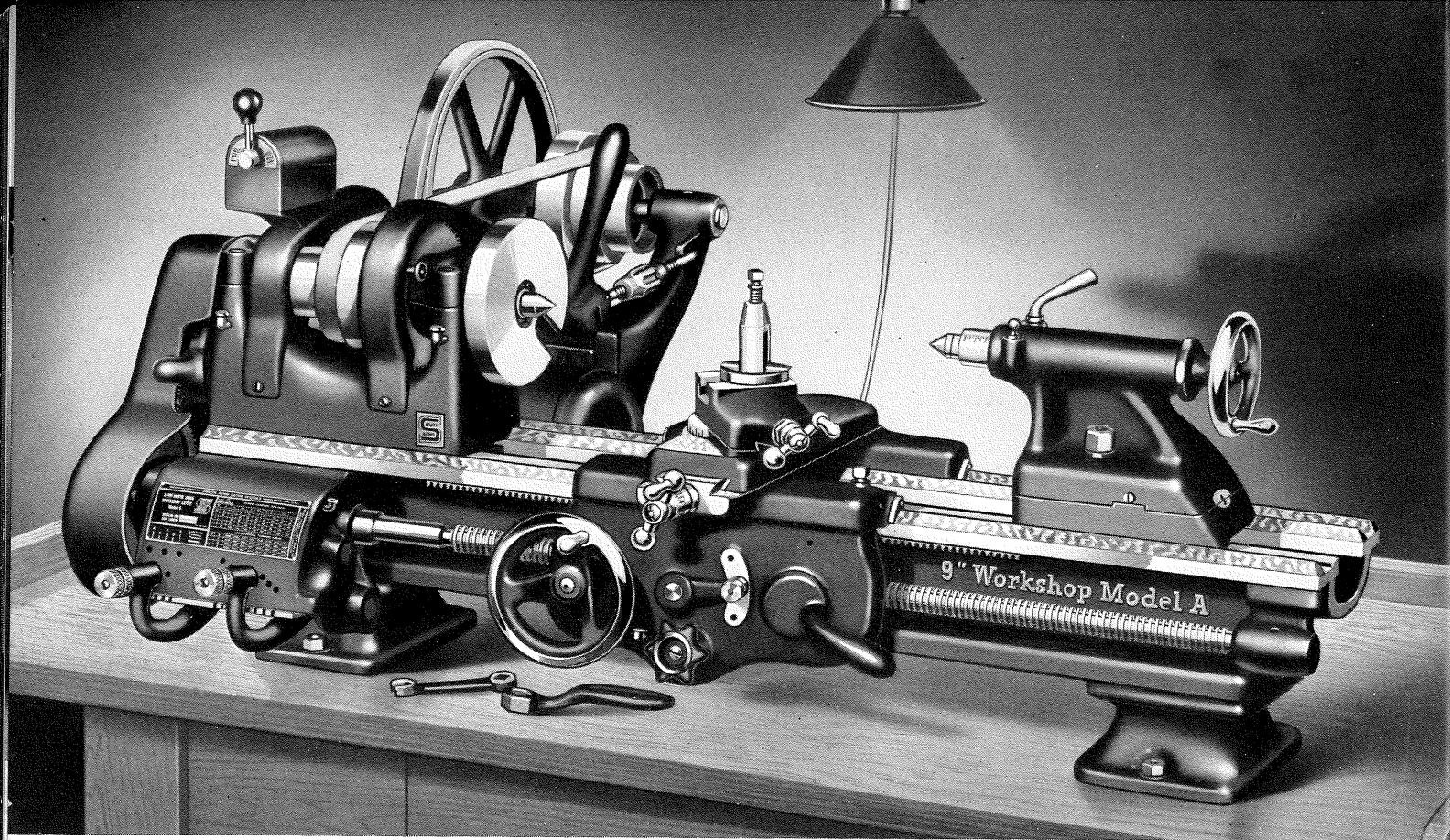
Quiet running machine-cut semi-steel back gears and balanced cone pulley assure smooth operation at all spindle speeds. A quick acting wrenchless bull gear lock permits engaging or disengaging the back gears without using a wrench.

The headstock is reinforced and webbed giving it strength and rigidity. The headstock base is carefully hand-scraped and fitted to the lathe bed to assure precision alignment of the spindle with the V-ways. A reverse lever for threads and feeds is conveniently located on the left end of the headstock. Close fitting guards enclose all gears.



Heat Treated Alloy Steel Headstock Spindle with Precision Ground Bearing Surfaces Supplied as Standard Equipment on All Model A, Model B, and Model C 9-inch "Workshop" South Bend Lathes

SOUTH BEND, INDIANA, U.S.A.



9-inch "Workshop" Model A Horizontal Motor Driven Precision Bench Lathe With Quick Change Gear Box and Automatic Apron

The 9-inch "Workshop" Model A Lathe has a full quick change gear box and a full automatic friction feed apron which are described on pages 68 and 69. This is a high quality precision lathe built to most exacting machine tool specifications. It is a practical lathe for manufacturing parts for typewriters, adding machines, radios, electric appliances and similar articles requiring extreme accuracy. See specifications on page 66.

The Quick Change Gear Box provides 48 changes for cutting right and left hand screw threads from 4 to 224 per inch. Power longitudinal feeds .0015" to .0213" and power cross feeds .0004" to .0063" are also obtained through the gear box. See page 68 for description of gear box.

This Lathe is also made with a twelve-speed drive, V-belt drive, countershaft drive and pedestal motor drive, as listed on pages 73 to 79.

Equipment included in price of lathe consists of: a full automatic apron; quick change gear box; heat treated alloy steel headstock spindle; horizontal motor drive; 1/4 H.P. 1725 R.P.M. A.C., 1-phase, 110-volt, 60-cycle start-stop reversing motor; reversing switch; 6-wire cable for connecting motor and switch; 6-ft. extension cable and plug; V-belt; flat leather belt and lacing; graduated compound rest;

STUD GEAR	LEFT HAND TUMBLER	SCREW THREADS PER INCH							
		4	4 1/2	5	5 1/2	5 3/4	6	6 1/2	7
20	A	8	9	10	11	11 1/2	12	13	14
"	B	16	18	20	22	23	24	26	28
"	C	32	36	40	44	46	48	52	56
"	D	64	72	80	88	92	96	104	112
"	E	128	144	160	176	184	192	208	224
LONGITUDINAL TURNING FEEDS									
20	B	.0213	.0190	.0171	.0155	.0148	.0142	.0131	.0122
"	C	.0107	.0095	.0085	.0078	.0074	.0071	.0066	.0061
"	D	.0053	.0047	.0043	.0039	.0037	.0036	.0033	.0030
"	E	.0027	.0024	.0021	.0019	.0019	.0018	.0016	.0015

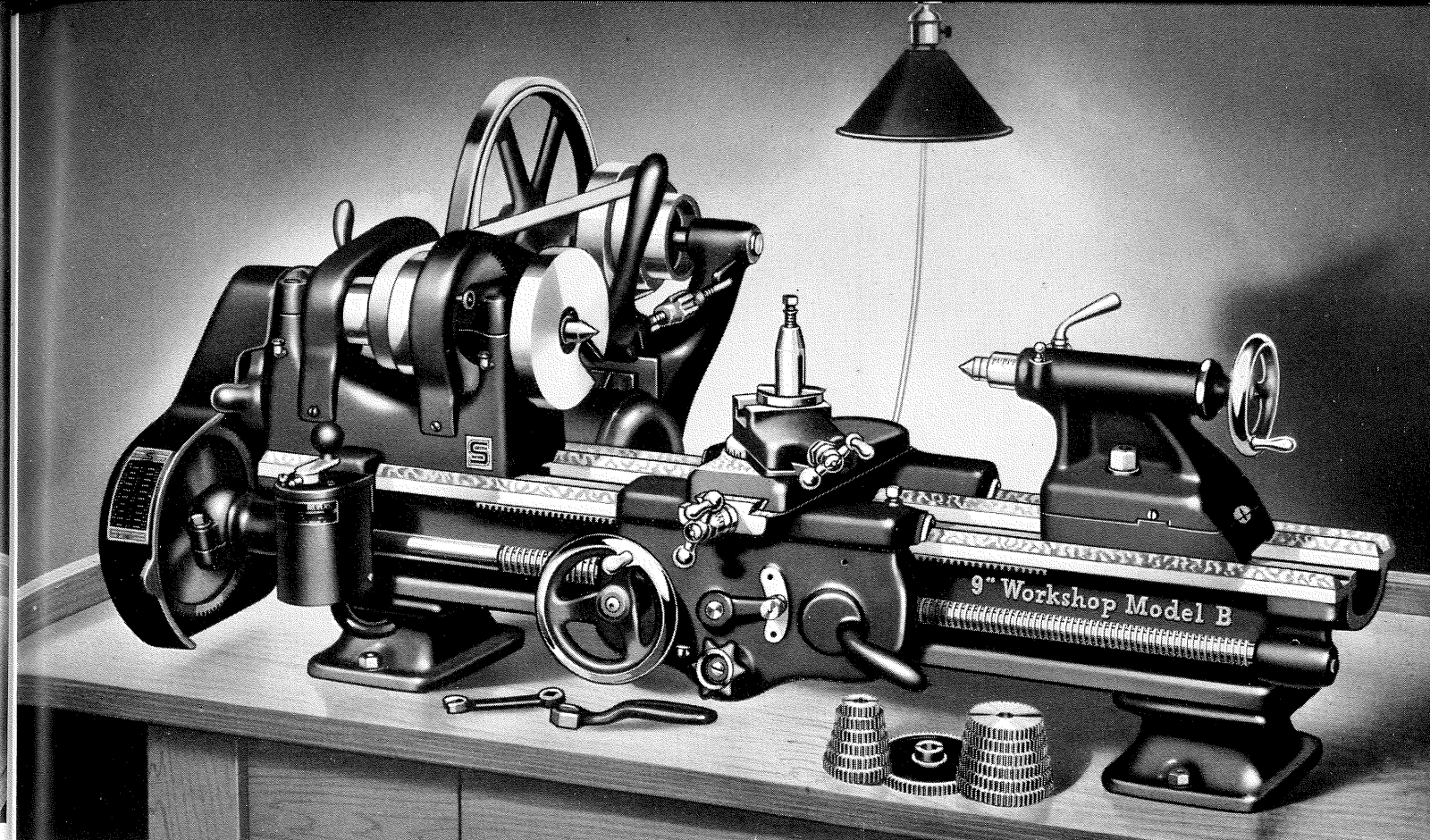
Index Chart Showing Threads and Feeds on 9-inch "Workshop" Model A Lathe.

face plate; tool post; two 60-degree centers; spindle sleeve; wrenches; installation plan, and book "How to Run a Lathe." Bench not included in price of lathe.

9-inch "Workshop" Model A Horizontal Motor Driven Bench Lathes					
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.	
Distance Between Centers	17-in.	23-in.	29-in.	35-in.	
Catalog Number	444-Y	444-Z	444-A	444-R	
Shipping Weight of Lathe	340 lbs.	365 lbs.	390 lbs.	415 lbs.	
Code Word	Nuyaf	Nuyej	Nuyin	Nuyot	

*NOTE—The 3 1/2" and 4" bed lengths, because of the greater distance between centers, are recommended for general machine work.

SOUTH BEND LATHE WORKS



9-inch "Workshop" Model B Horizontal Motor Driven Precision Bench Lathe With Plain Change Gear Equipment and Automatic Apron

The 9-inch "Workshop" Model B Lathe is equipped with a full automatic friction feed apron which is described on page 69. Change gears are supplied with the lathe for cutting right and left hand screw threads from 4 to 160 per inch, as listed on the index chart at right, and also for power cross feeds .001" to .0046" and power longitudinal feeds .0021" to .0155" per revolution of spindle. See page 66 for specifications of lathe.

This Lathe is also made with a twelve-speed drive, V-belt drive, underneath motor drive, countershaft drive, and pedestal motor drive, as listed on pages 73 and 79.

Equipment included in price of lathe consists of: a full automatic apron; heat treated alloy steel headstock spindle; set of change gears; adjustable horizontal motor drive; 1/4 H.P. 1725 R.P.M. A.C., 1-phase, 110-volt, 60-cycle start-stop reversing motor; reversing switch; 6-wire cable for connecting motor and switch; 6-ft. extension cable and plug; V-belt; flat leather belt and lacing; 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 extra.

9-inch "Workshop" Model B Horizontal Motor Driven Bench Lathes					
Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.	
Distance Between Centers	17-in.	23-in.	29-in.	35-in.	
Catalog Number	477-Y	477-Z	477-A	477-R	
Shipping Weight of Lathe	330 lbs.	355 lbs.	380 lbs.	405 lbs.	
Code Word	Matem	Matuc	Mavaj	Mavud	

*NOTE—The 3 1/2" and 4" bed lengths, because of the greater distance between centers, are recommended for general machine work.

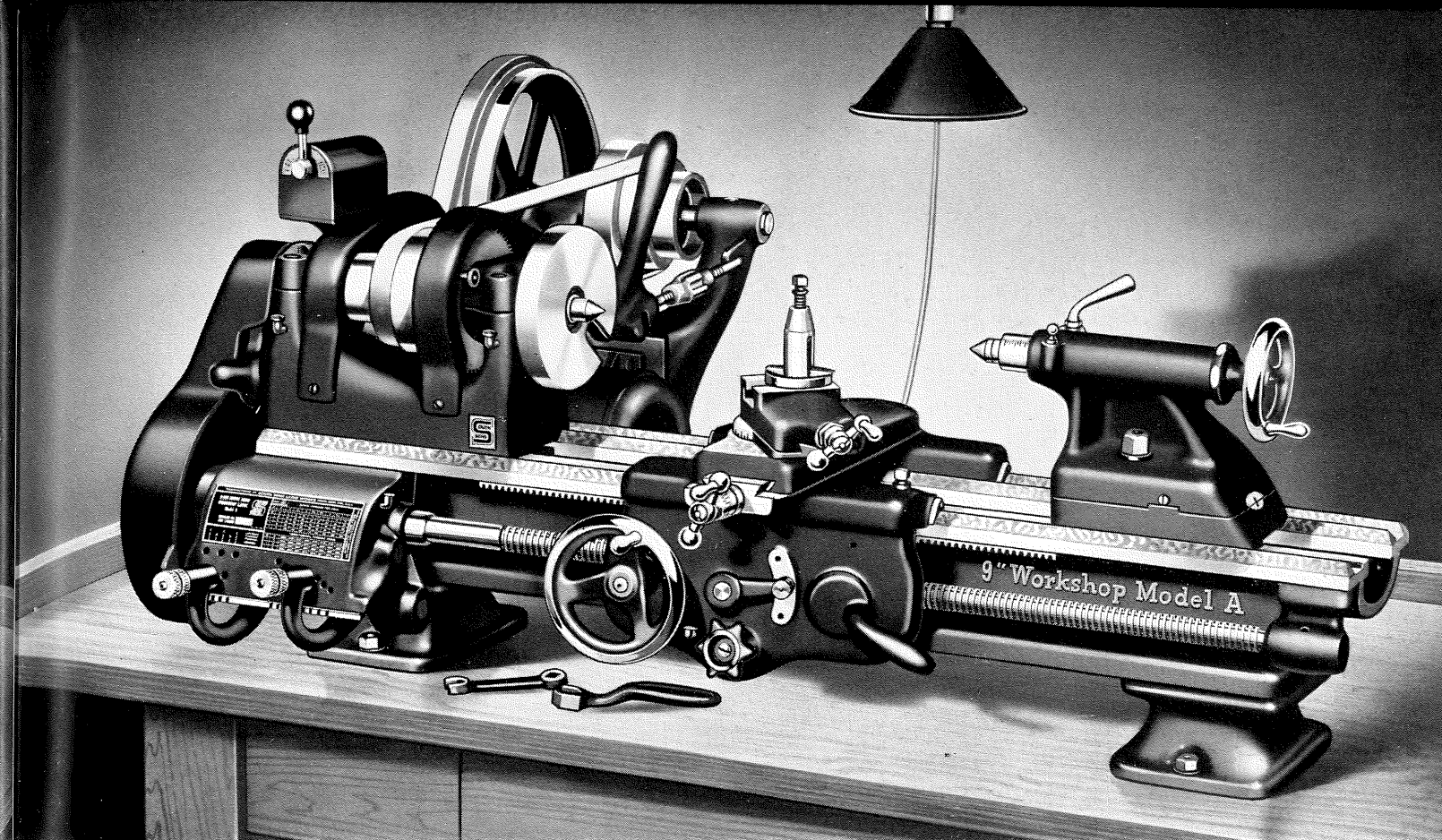
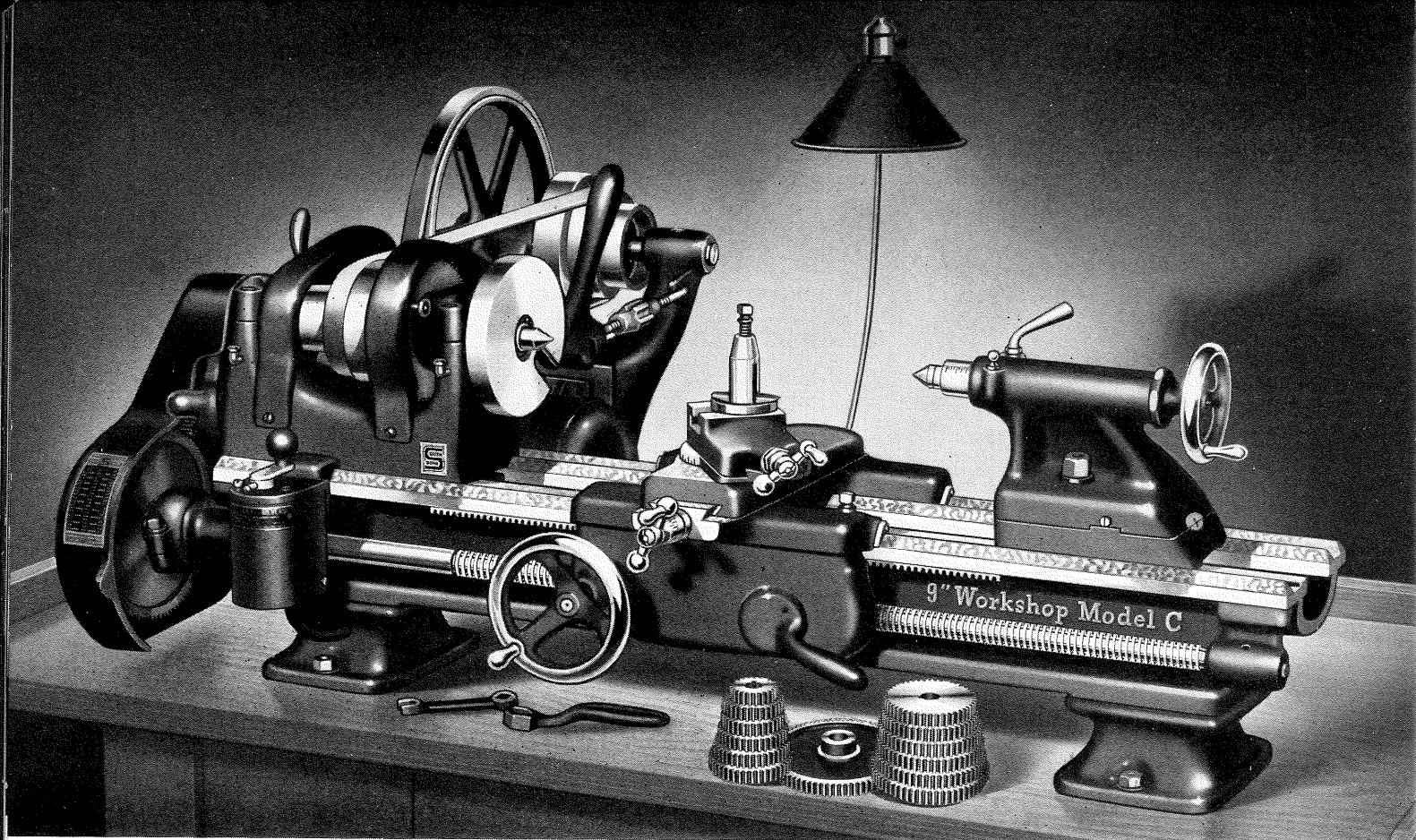
SOUTH BEND, INDIANA, U.S.A.

CHART FOR THREADS AND FEEDS 9-INCH WORKSHOP MODEL B LATHE									
THREADS PER INCH	STUD GEAR	IDLER GEARS	SCREW GEAR	CROSS FEEDS	LONG FEEDS	STUD GEAR	SCREW GEAR	STUD GEAR	SCREW GEAR
4	24	FIG. 1	48			721	FIG. 1	181	
4 1/2	24	FIG. 1	54						
5	16	FIG. 1	40						
5 1/2	16	FIG. 1	44						
6	16	FIG. 1	48						
6 1/2	16	FIG. 1	52						
7	16	FIG. 1	56						
7 1/2	16	FIG. 1	60						
8	32	FIG. 2	32	.0046	.0155				
9	32	FIG. 2	36						
10	32	FIG. 2	40						
11	32	FIG. 2	44						
11 1/2	32	FIG. 2	46						
12	32	FIG. 2	48						
13	32	FIG. 2	52						
14	32	FIG. 2	56						
16	24	FIG. 2	48						
18	24	FIG. 2	54						
20	16	FIG. 2	40						
22	16	FIG. 2	44						
24	16	FIG. 2	48						
26	16	FIG. 2	52						
27	16	FIG. 2	54						
30	16	FIG. 3	60	.0034	.0114				
32	32	FIG. 3	32	.0031	.0107				
36	32	FIG. 3	36	.0028	.0095				
40	32	FIG. 3	40	.0025	.0085				
44	32	FIG. 3	44	.0023	.0078				
46	32	FIG. 3	46	.0022	.0074				
48	32	FIG. 3	48	.0021	.0071				
52	32	FIG. 3	52	.0019	.0066				
54	32	FIG. 3	54	.0019	.0063				
56	32	FIG. 3	56	.0018	.0061				
60	32	FIG. 3	60	.0017	.0057				
64	16	FIG. 3	32	.0016	.0053				
72	16	FIG. 3	36	.0014	.0047				
80	16	FIG. 3	40	.0013	.0043				
88	16	FIG. 3	44	.0011	.0039				
92	16	FIG. 3	46	.0011	.0037				
96	16	FIG. 3	48	.0010	.0035				
104	16	FIG. 3	52	.0010	.0033				
112	16	FIG. 3	56	.0009	.0030				
120	16	FIG. 3	60	.0008	.0028				
160	16	FIG. 4	80	.0021					

Index Chart Showing Threads and Feeds on 9-inch "Workshop" Model B Lathe

9" W/SHOP LATHES

9" W/SHOP LATHES



9-inch "Workshop" Model C Horizontal Motor Driven Precision Bench Lathe With Plain Change Gears and Geared Screw Feed Apron

The 9-inch "Workshop" Model C Bench Lathe with Horizontal Motor Drive is recommended for use in shops requiring the finest type of back-gearred, screw cutting precision lathe. This lathe has hand-operated cross feed, and power longitudinal feeds obtained by engaging the half-nuts with the lead screw. Change gears are supplied with the lathe for cutting right and left hand screw threads from 4 to 160 per inch and for power longitudinal feeds .0021" to .0156" per revolution of spindle. See page 66.

Motor Drive Equipment included in price of lathe consists of: Adjustable Horizontal Motor Drive Countershaft; 1/4 H.P. Start-Stop Reversing Motor, 1725 R.P.M. 1-phase, 60-cycle, A.C. 110-volt; 6-wire cable for connecting motor and switch; 6-ft. extension cable and plug; V-groove pulley for motor; reversing switch; bracket for attaching switch to lathe; V-belt, motor to drive unit; flat leather belt and lacing.

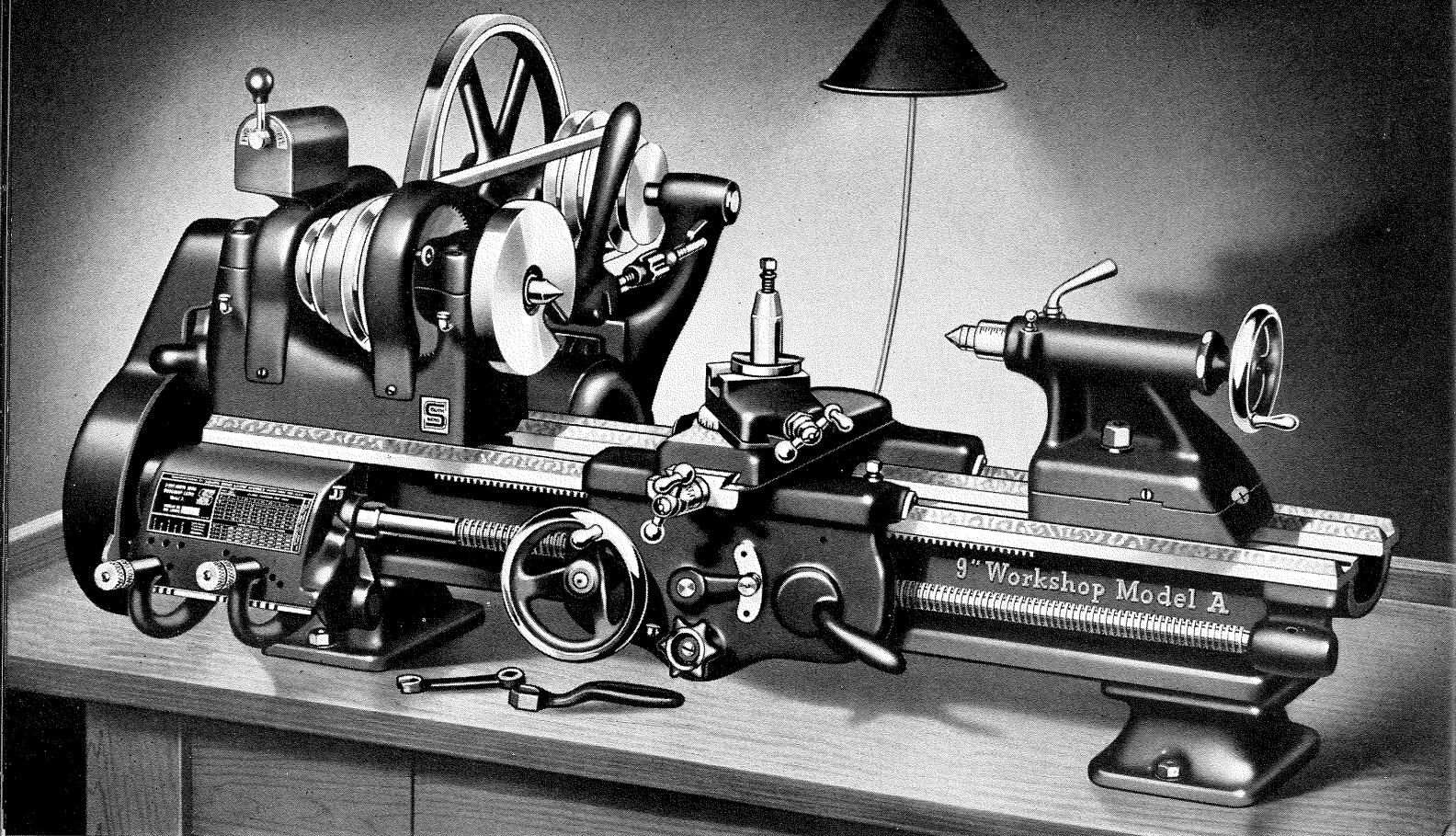
Equipment included in price of lathe consists of plain apron; heat treated alloy steel headstock spindle; compound rest; face plate; tool post; centers; sleeve; wrenches; installation plan, and book "How to Run a Lathe." Bench is not included in equipment.

Model C 9-inch "Workshop" Horizontal Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers.....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	415-YC	415-ZC	415-AC	415-RC
Shipping Weight of Lathe.....	320 lbs.	345 lbs.	370 lbs.	395 lbs.
Code Word.....	Kefav	Kefez	Kefid	Kefoj

*NOTE—The 3 1/2' and 4' bed lengths, because of greater distance between centers, are recommended for general machine work.

CHART FOR THREADS AND FEEDS 9-INCH WORKSHOP MODEL C LATHE			
THREADS PER INCH	STUD GEAR	IDLER GEARS	SCREW GEAR
4	24	FIG. 1	48
4 1/2	24	FIG. 1	54
5	16	FIG. 1	80
5 1/2	16	FIG. 1	44
6	16	FIG. 1	48
6 1/2	16	FIG. 1	52
7	16	FIG. 1	56
7 1/2	16	FIG. 1	60
8	32	FIG. 2	32
8 1/2	32	FIG. 2	36
9	32	FIG. 2	40
9 1/2	32	FIG. 2	44
10	32	FIG. 2	48
10 1/2	32	FIG. 2	52
11	32	FIG. 2	56
11 1/2	32	FIG. 2	60
12	32	FIG. 2	64
12 1/2	32	FIG. 2	68
13	32	FIG. 2	72
13 1/2	32	FIG. 2	76
14	32	FIG. 2	80
14 1/2	32	FIG. 2	84
15	32	FIG. 2	88
15 1/2	32	FIG. 2	92
16	32	FIG. 2	96
16 1/2	32	FIG. 2	100
17	32	FIG. 2	104
17 1/2	32	FIG. 2	108
18	32	FIG. 2	112
18 1/2	32	FIG. 2	116
19	32	FIG. 2	120
19 1/2	32	FIG. 2	124
20	32	FIG. 2	128
20 1/2	32	FIG. 2	132
21	32	FIG. 2	136
21 1/2	32	FIG. 2	140
22	32	FIG. 2	144
22 1/2	32	FIG. 2	148
23	32	FIG. 2	152
23 1/2	32	FIG. 2	156
24	32	FIG. 2	160
24 1/2	32	FIG. 2	164
25	32	FIG. 2	168
25 1/2	32	FIG. 2	172
26	32	FIG. 2	176
26 1/2	32	FIG. 2	180
27	32	FIG. 2	184
27 1/2	32	FIG. 2	188
28	32	FIG. 2	192
28 1/2	32	FIG. 2	196
29	32	FIG. 2	200
29 1/2	32	FIG. 2	204
30	32	FIG. 2	208
30 1/2	32	FIG. 2	212
31	32	FIG. 2	216
31 1/2	32	FIG. 2	220
32	32	FIG. 3	32
36	32	FIG. 3	36
40	32	FIG. 3	40
44	32	FIG. 3	44
48	32	FIG. 3	48
52	32	FIG. 3	52
56	32	FIG. 3	56
60	32	FIG. 3	60
64	16	FIG. 3	32
72	16	FIG. 3	36
80	16	FIG. 3	40
88	16	FIG. 3	44
92	16	FIG. 3	48
96	16	FIG. 3	52
104	16	FIG. 3	56
112	16	FIG. 3	60
120	16	FIG. 3	64
128	16	FIG. 3	68
136	16	FIG. 3	72
144	16	FIG. 3	76
152	16	FIG. 3	80
160	16	FIG. 3	84
168	16	FIG. 3	88
172	16	FIG. 3	92
176	16	FIG. 3	96
180	16	FIG. 3	100
184	16	FIG. 3	104
188	16	FIG. 3	108
192	16	FIG. 3	112
196	16	FIG. 3	116
200	16	FIG. 3	120
204	16	FIG. 3	124
208	16	FIG. 3	128
212	16	FIG. 3	132
216	16	FIG. 3	136
220	16	FIG. 3	140
224	16	FIG. 3	144
228	16	FIG. 3	148
232	16	FIG. 3	152
236	16	FIG. 3	156
240	16	FIG. 3	160
244	16	FIG. 3	164
248	16	FIG. 3	168
252	16	FIG. 3	172
256	16	FIG. 3	176
260	16	FIG. 3	180
264	16	FIG. 3	184
268	16	FIG. 3	188
272	16	FIG. 3	192
276	16	FIG. 3	196
280	16	FIG. 3	200
284	16	FIG. 3	204
288	16	FIG. 3	208
292	16	FIG. 3	212
296	16	FIG. 3	216
300	16	FIG. 3	220
304	16	FIG. 3	224
308	16	FIG. 3	228
312	16	FIG. 3	232
316	16	FIG. 3	236
320	16	FIG. 3	240
324	16	FIG. 3	244
328	16	FIG. 3	248
332	16	FIG. 3	252
336	16	FIG. 3	256
340	16	FIG. 3	260
344	16	FIG. 3	264
348	16	FIG. 3	268
352	16	FIG. 3	272
356	16	FIG. 3	276
360	16	FIG. 3	280
364	16	FIG. 3	284
368	16	FIG. 3	288
372	16	FIG. 3	292
376	16	FIG. 3	296
380	16	FIG. 3	300
384	16	FIG. 3	304
388	16	FIG. 3	308
392	16	FIG. 3	312
396	16	FIG. 3	316
400	16	FIG. 3	320
404	16	FIG. 3	324
408	16	FIG. 3	328
412	16	FIG. 3	332
416	16	FIG. 3	336
420	16	FIG. 3	340
424	16	FIG. 3	344
428	16	FIG. 3	348
432	16	FIG. 3	352
436	16	FIG. 3	356
440	16	FIG. 3	360
444	16	FIG. 3	364
448	16	FIG. 3	368
452	16	FIG. 3	372
456	16	FIG. 3	376
460	16	FIG. 3	380
464	16	FIG. 3	384
468	16	FIG. 3	388
472	16	FIG. 3	392
476	16	FIG. 3	396
480	16	FIG. 3	400
484	16	FIG. 3	404
488	16	FIG. 3	408
492	16	FIG. 3	412
496	16	FIG. 3	416
500	16	FIG. 3	420
504	16	FIG. 3	424
508	16	FIG. 3	428
512	16	FIG. 3	432
516	16	FIG. 3	436
520	16	FIG. 3	440
524	16	FIG. 3	444
528	16	FIG. 3	448
532	16	FIG. 3	452
536	16	FIG. 3	456
540	16	FIG. 3	460
544	16	FIG. 3	464
548	16	FIG. 3	468
552	16	FIG. 3	472
556	16	FIG. 3	476
560	16	FIG. 3	480
564	16	FIG. 3	484
568	16	FIG. 3	488
572	16	FIG. 3	492
576	16	FIG. 3	496
580	16	FIG. 3	500
584	16	FIG. 3	504
588	16	FIG. 3	508
592	16	FIG. 3	512
596	16	FIG. 3	516
600	16	FIG. 3	520
604	16	FIG. 3	524
608	16	FIG. 3	528
612	16	FIG. 3	532
616	16	FIG. 3	536
620	16	FIG. 3	540
624	16	FIG. 3	544
628	16	FIG. 3	548
632	16	FIG. 3	552
636	16	FIG. 3	556
640	16	FIG. 3	560
644	16	FIG. 3	564
648	16	FIG. 3	568
652	16	FIG. 3	572
656	16	FIG. 3	576
660	16	FIG. 3	580
664	16	FIG. 3	584
668	16	FIG. 3	588
672	16	FIG. 3	592
676	16	FIG. 3	596
680	16	FIG. 3	600
684	16	FIG. 3	604
688	16	FIG. 3	608
692	16	FIG. 3	612
696	16	FIG. 3	616
700	16	FIG. 3	620
704	16	FIG. 3	624
708	16	FIG. 3	628
712	16	FIG. 3	632
716	16	FIG. 3	636
720	16	FIG. 3	640
724	16	FIG. 3	644
728	16	FIG. 3	648
732	16	FIG. 3	652
736	16	FIG. 3	656
740	16	FIG. 3	660
744	16	FIG. 3	664
748	16	FIG. 3	668
752	16	FIG. 3	672
756	16	FIG. 3	676
760	16	FIG. 3	680
764	16	FIG. 3	684
768	16	FIG. 3	688
772	16	FIG. 3	692
776	16	FIG. 3	696
780	16	FIG. 3	700
784	16	FIG. 3	704
788	16	FIG. 3	708
792	16	FIG. 3	712
796	16	FIG. 3	716
800	16	FIG. 3	720
804	16	FIG. 3	724
808	16	FIG. 3	728
812	16	FIG. 3	732
816	16	FIG. 3	736
820	16	FIG. 3	740
824	16	FIG. 3	744
828	16	FIG. 3	748
832	16	FIG. 3	752
836	16	FIG. 3	756
840	16	FIG. 3	760
844	16	FIG. 3	764
848	16	FIG. 3	768
852	16	FIG. 3	772
856	16	FIG. 3	776
860	16	FIG. 3	780
864	16	FIG. 3	784
868	16	FIG. 3	788
872	16	FIG. 3	792
876	16	FIG. 3	796
880	16	FIG. 3	800
884	16	FIG. 3	804
888	16	FIG. 3	808
892	16	FIG. 3	812
896	16	FIG. 3	816
900	16	FIG. 3	820
904	16	FIG. 3	824
908	16	FIG. 3	828
912	16	FIG. 3	832
916	16	FIG. 3	836
920	16	FIG. 3	840
924	16	FIG. 3	844
928	16	FIG. 3	848
932	16	FIG. 3	852
936	16	FIG. 3	856
940	16	FIG. 3	860
944	16	FIG. 3	864
948	16	FIG. 3	868
952	16	FIG. 3	872
956	16	FIG. 3	876
960	16	FIG. 3	880
964	16	FIG. 3	884
968	16	FIG. 3	888
972	16	FIG. 3	892
976	16	FIG. 3	896
980	16	FIG. 3	900
984	16	FIG. 3	904
988	16	FIG. 3	908
992	16	FIG. 3	912
996	16	FIG. 3	916
1000	16	FIG. 3	920
1004	16	FIG. 3	924
1008	16	FIG. 3	928
1012	16	FIG. 3	932
1016	16	FIG. 3	936
1020	16	FIG. 3	940
1024	16	FIG. 3	944
1028	16	FIG. 3	948
1032	16	FIG. 3	952
1036	16	FIG. 3	956
1040	16	FIG. 3	960
1044	16	FIG. 3	964
1048	16	FIG. 3	968
1052	16	FIG. 3	972
1056	16	FIG.	



9-inch "Workshop" Model A, Model B, and Model C V-Belt Horizontal Motor Driven Precision Bench Lathes

The 9-inch "Workshop" Model A V-Belt Horizontal Motor Driven Lathe is illustrated above. Model B and Model C Lathes are also made with this drive. These lathes have heat treated alloy steel headstock spindle, and are identical with the lathes shown on pages 70, 71, and 72, except for the drive. See page 66 for lathe specifications.

The V-Belt Drive consists of a set of V-belt cone pulleys for the lathe headstock and countershaft. Eight spindle speeds are provided as follows: 46, 63, 85, 117, 239, 326, 442 and 609 R.P.M.

Electrical Equipment consists of 1/4 H.P. 1725 R.P.M. A.C. 1-phase, 110-volt, 60-cycle, start-stop type reversing motor; 6-wire cable for connecting motor and switch; reversing switch, and 6-ft. extension cable and plug. Lathe equipment supplied is

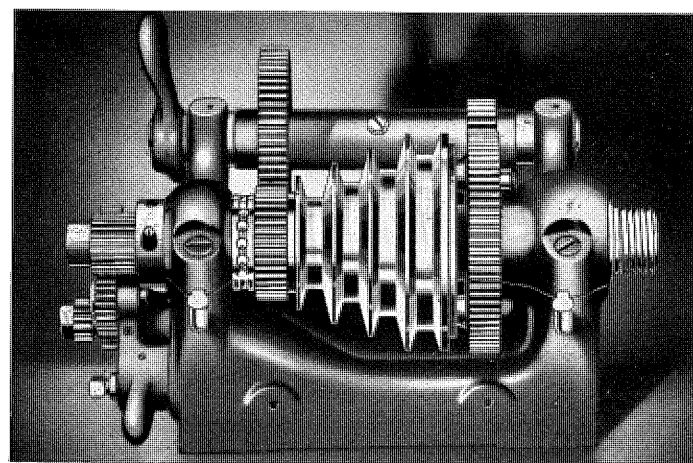
Model A 9-inch "Workshop" V-Belt Horizontal Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	544-Y	544-Z	544-A	544-R
Shipping Weight of Lathe	340 lbs.	365 lbs.	390 lbs.	415 lbs.
Code Word	Paqol	Paqur	Parak	Pasus

Model B 9-inch "Workshop" V-Belt Horizontal Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	577-Y	577-Z	577-A	577-R
Shipping Weight of Lathe	330 lbs.	355 lbs.	380 lbs.	405 lbs.
Code Word	Patal	Patap	Patit	Patoz

the same as for the corresponding model as listed on pages 70, 71 and 72 respectively.

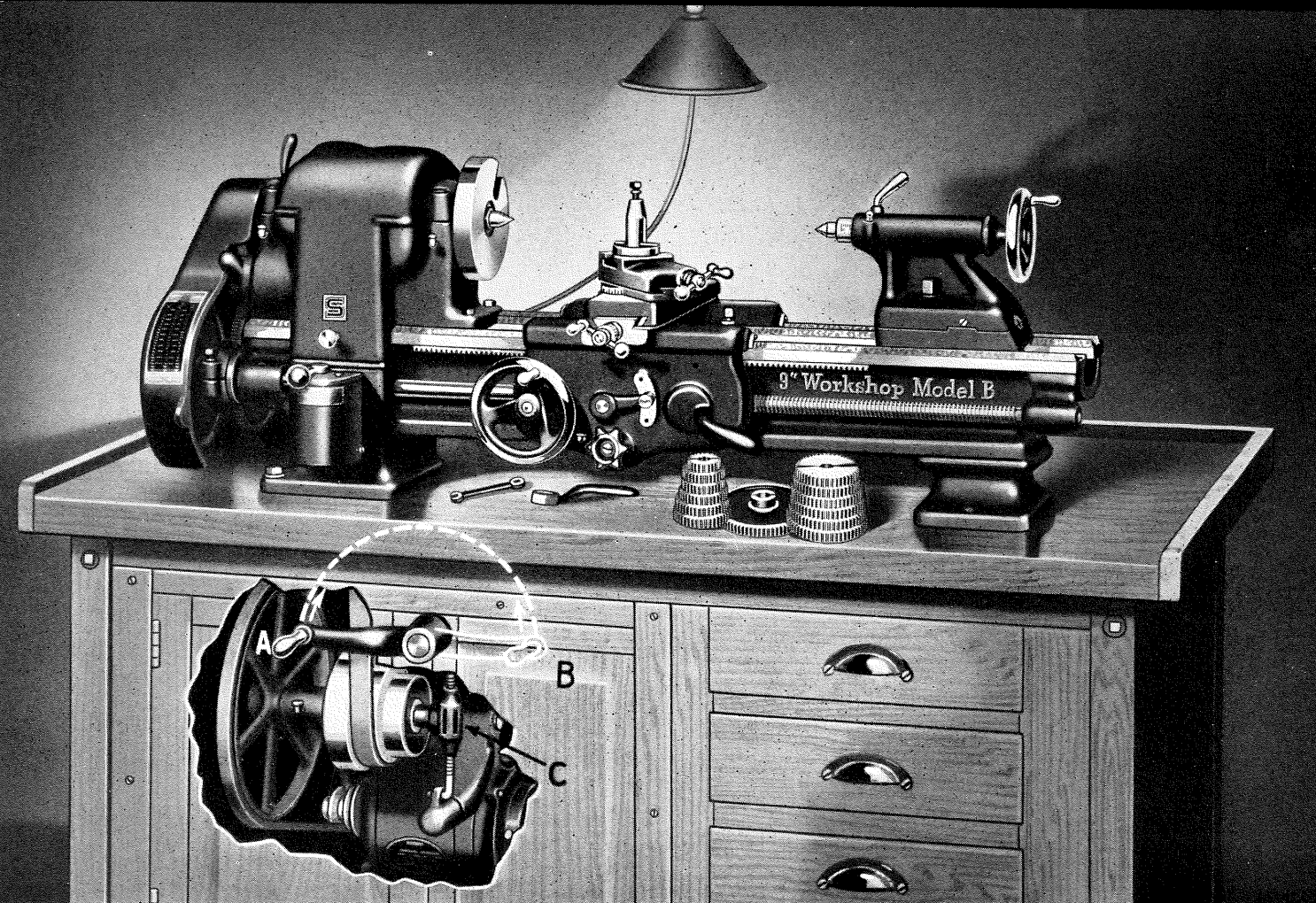


Headstock of 9-inch "Workshop" Lathe
(with Gear Guards Removed) Showing
4-Step Cone Pulley for V-Belt Drive

Model C 9-inch "Workshop" V-Belt Horizontal Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*	4 1/2-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	515-YC	515-ZC	515-AC	515-RC
Shipping Weight of Lathe	320 lbs.	345 lbs.	370 lbs.	395 lbs.
Code Word	Lihat	Lihex	Lihib	Lihoh

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.



9-inch "Workshop" Model B and Model C Underneath Motor Driven Precision Bench Lathes

The 9-inch "Workshop" Model B Lathe with underneath motor drive is illustrated above. The 9-inch "Workshop" Model C Lathe is also made with this drive. These lathes are the same as the lathes shown on pages 71 and 72 respectively, except for the necessary alterations in the headstock and bed to accommodate the underneath motor drive. The Model A 9-inch "Workshop" Lathe is not made with this drive. See page 66 for specifications of lathe.

The Motor Drive Unit is bolted underneath the bench top. The cone pulley belt tension is released by moving crank handle "A" to position "B," and the hinged cone pulley cover may be raised for shifting cone pulley belt. Any desired belt tension can be obtained by adjusting turnbuckle "C." The motor operates from a lamp socket.

Improved Features include back-gear headstock, automatic apron, ball thrust bearing for spindle, precision lead screw, improved capillary oiling system, and graduated compound rest. Heat treated alloy steel headstock spindle is included as standard equipment on both Model B Lathes and Model C Lathes. The bed and legs are cast integral. Heavy box braces are cast in at short intervals to reinforce the bed, and give added strength and rigidity.

Electrical Equipment included in price consists of: underneath motor drive complete with 1/4 H.P. 1725 R.P.M., 1-phase, 60-cycle, A.C., 110-volt, start-stop reversing motor; 6-wire cable to connect motor and switch; 6-ft. extension cable and plug; reversing switch; motor pulley and belting.

Regular Equipment included in price of lathe consists of: automatic apron (on Model B only); graduated compound rest; face plate; forged steel tool post; two 60-degree tool steel lathe centers, No. 2 Morse taper; headstock spindle sleeve; wrenches; set of independent change gears; installation plan and book "How to Run a Lathe." Bench is not included.

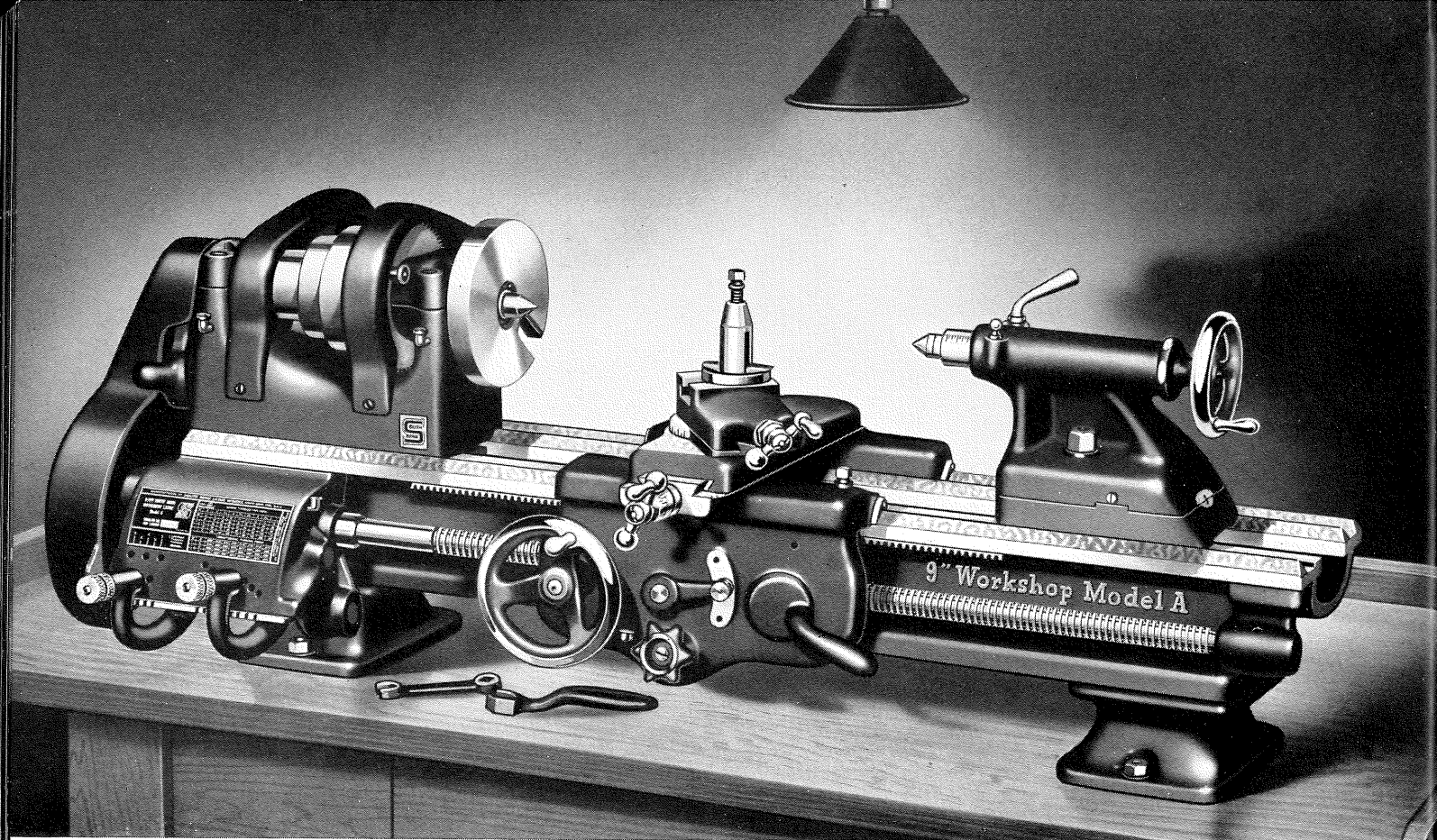
Model B 9-inch "Workshop" Underneath Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*
Distance Between Centers	17-in.	23-in.	29-in.
Catalog Number	177-YB	177-ZB	177-AB
Shipping Weight of Lathe	380 lbs.	405 lbs.	430 lbs.
Code Word	Paqax	Paqeb	Paqit

Model C 9-inch "Workshop" Underneath Motor Driven Bench Lathes

Bed Length	3-ft.	3 1/2-ft.*	4-ft.*
Distance Between Centers	17-in.	23-in.	29-in.
Catalog Number	115-YBC	115-ZBC	115-ABC
Shipping Weight of Lathe	370 lbs.	395 lbs.	420 lbs.
Code Word	Pecam	Pecaq	Pecug

*NOTE—The 3 1/2' and 4' bed lengths, because of the greater distance between centers, are recommended for general machine work.

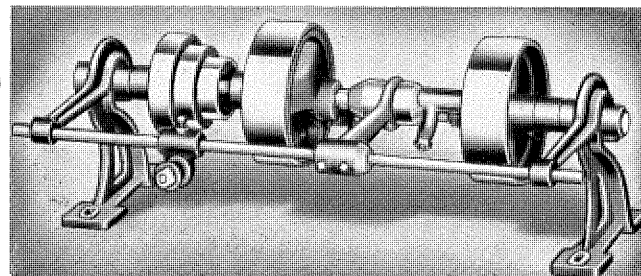


9-inch "Workshop" Model A, Model B, and Model C Countershaft Driven Precision Bench Lathes

The 9-inch "Workshop" Model A Lathe with countershaft drive is illustrated above. The 9-inch "Workshop" Model B and Model C Lathes are also made with this drive. These lathes are the same as the lathes shown on pages 70, 71 and 72 respectively, except for the type of drive. See lathe specifications on page 66.

The 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. The countershaft drive permits operating the lathe and several other machines from a lineshaft driven by a single motor and is the most economical type of drive for the large shop where a number of machines are operated simultaneously.

Improved Features include back-geared headstock, automatic apron, ball thrust bearing for spindle,



Double Friction Countershaft for Lathe

precision lead screw, improved capillary oiling system, and graduated compound rest.

Equipment included in price of Model A, Model B and Model C Lathes is the same as listed on pages 70, 71 and 72 respectively, with the exception that a double friction countershaft is supplied instead of the motor drive unit.

Model A 9-inch "Workshop" Countershaft Driven Bench Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	44-YB	44-ZB	44-AB	44-RB
Shipping Weight of Lathe	320 lbs.	345 lbs.	370 lbs.	395 lbs.
Code Word	Laxud	Layax	Layeb	Layif

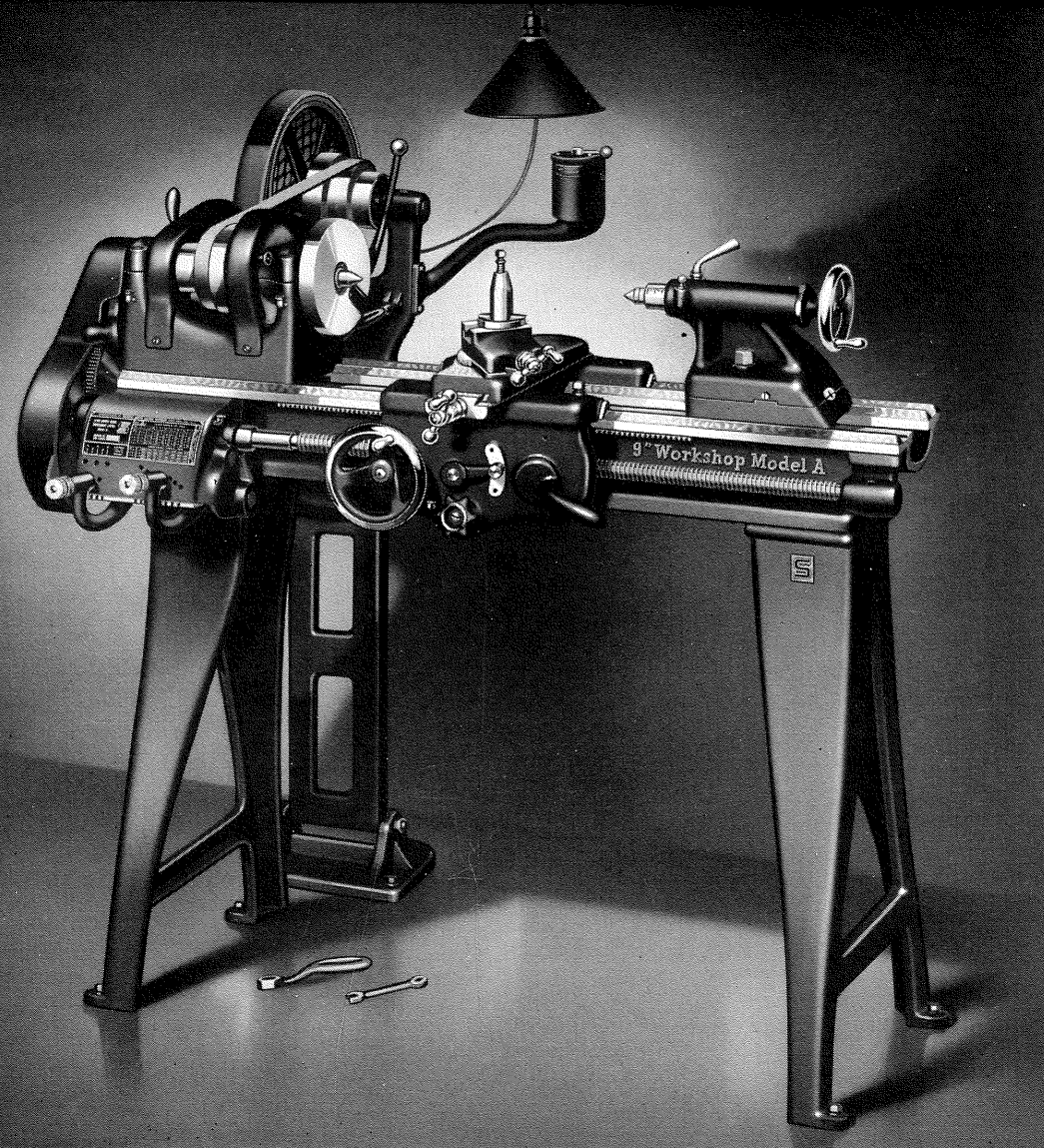
Model B 9-inch "Workshop" Countershaft Driven Bench Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	77-YB	77-ZB	77-AB	77-RB
Shipping Weight of Lathe	310 lbs.	335 lbs.	360 lbs.	385 lbs.
Code Word	Layol	Layur	Lazak	Lazis

Model C 9-inch "Workshop" Countershaft Driven Bench Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	15-YBC	15-ZBC	15-ABC	15-RBC
Shipping Weight of Lathe	300 lbs.	325 lbs.	350 lbs.	375 lbs.
Code Word	Leheb	Lehif	Lehol	Lehur

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



(Patented)

Above—End View of
Pedestal Motor
Driven Lathe

Left—Front View of
Pedestal Motor
Driven Lathe

9-inch "Workshop" Model A, Model B, and Model C Pedestal Motor Driven Precision Lathes

The 9-inch "Workshop" Model A Lathe with pedestal motor drive is illustrated above. The 9-inch "Workshop" Model B and Model C Lathes are also made with this drive. These lathes are the same as the lathes shown on pages 70, 71, and 72 respectively, except for the floor legs and the drive. See lathe specifications on page 66.

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.

Electrical Equipment included in price of lathe consists of: pedestal motor drive complete with ¼ H.P. 1725 R.P.M. 110-volt A.C. start-stop type reversing motor; 6-wire cable to connect motor and switch; 6-ft. extension cable and plug; reversing switch; motor pulley and belting. Lathe equipment is the same as for the corresponding models listed on pages 70, 71, and 72.

Model A 9-inch "Workshop" Pedestal Motor Driven Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	944-Y	944-Z	944-A	944-R
Shipping Weight of Lathe	580 lbs.	605 lbs.	630 lbs.	655 lbs.
Code Word	Hezac	Hezeg	Hezik	Hezoq

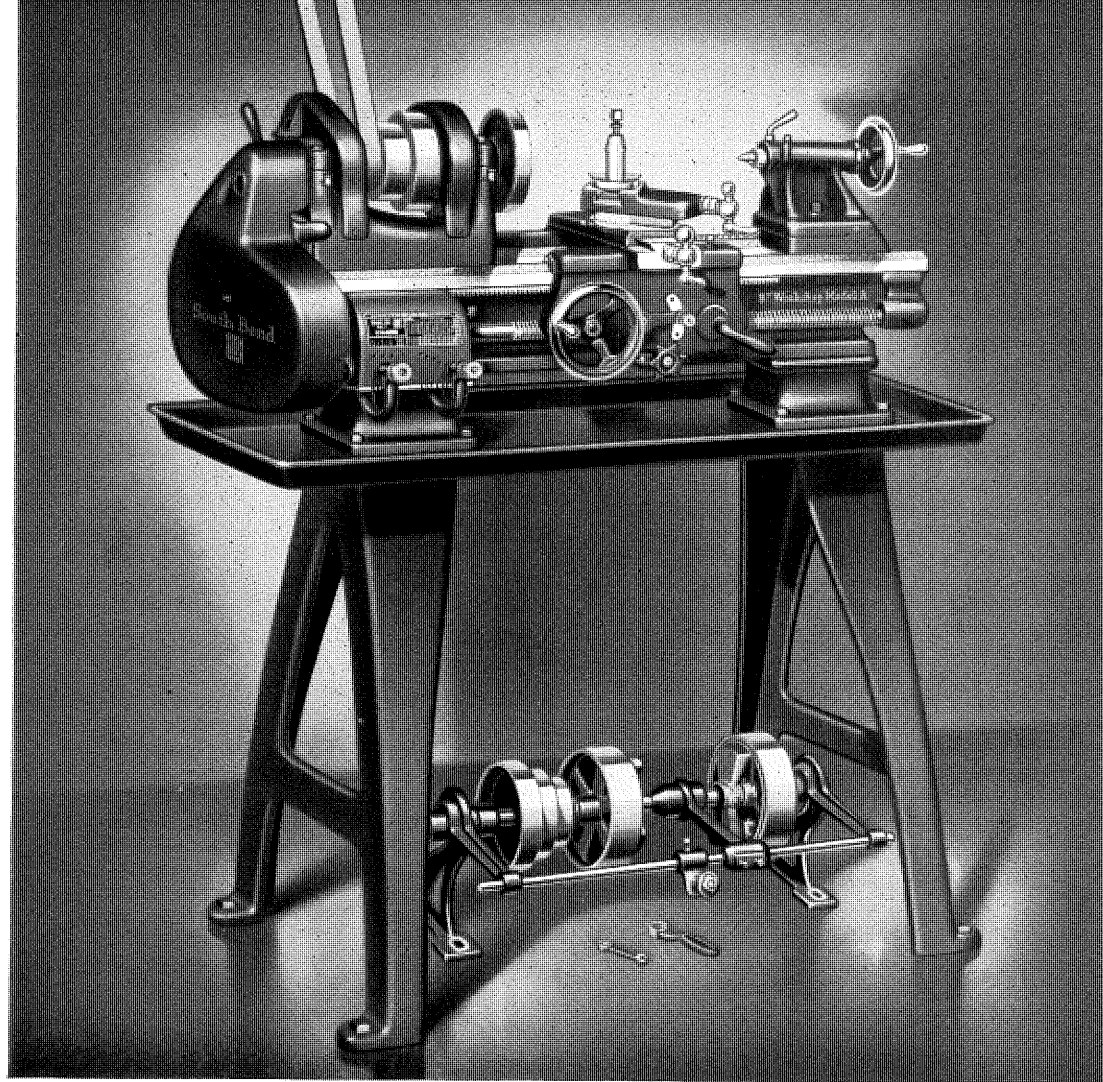
Model B 9-inch "Workshop" Pedestal Motor Driven Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	977-Y	977-Z	977-A	977-R
Shipping Weight of Lathe	570 lbs.	595 lbs.	620 lbs.	645 lbs.
Code Word	Hisem	Hisiq	Hisow	Hisuc

Model C 9-inch "Workshop" Pedestal Motor Driven Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers	17-in.	23-in.	29-in.	35-in.
Catalog Number	915-YC	915-ZC	915-AC	915-RC
Shipping Weight of Lathe	560 lbs.	585 lbs.	610 lbs.	635 lbs.
Code Word	Peges	Pegiw	Pegob	Peguh

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



9-inch "Workshop" Model A, Model B, and Model C Countershaft Driven Precision Lathes—with Chip Pan

The 9-inch "Workshop" Model A Lathe with chip pan and Countershaft Drive is illustrated above. The 9-inch "Workshop" Model B and Model C Lathes are also made with chip pan and Countershaft Drive. These lathes are the same as the lathes shown on pages 70, 71, and 72 respectively, except for the chip pan, floor legs, and type of drive. See lathe specifications on page 66.

The 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. The countershaft permits operating the lathe and several other machines from a lineshaft driven by a single motor, and is the most economical type of drive for the large shop where a number of machines are operated simultaneously.

Improved Features include back-gear headstock, automatic apron, ball thrust bearing for spindle, precision lead screw, improved capillary oiling system, and graduated compound rest.

Equipment supplied for Model A, Model B, and Model C Lathes is the same as for corresponding

models on pages 70, 71, and 72, except for chip pan, floor legs, and type of drive.

Model A 9-inch "Workshop" Countershaft Driven Lathe—with Chip Pan

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	244-Y	244-Z	244-A	244-R
Shipping Weight of Lathe....	455 lbs.	480 lbs.	505 lbs.	530 lbs.
Code Word.....	Mebup	Mecaj	Mefeb	Mefur

Model B 9-inch "Workshop" Countershaft Driven Lathe—with Chip Pan

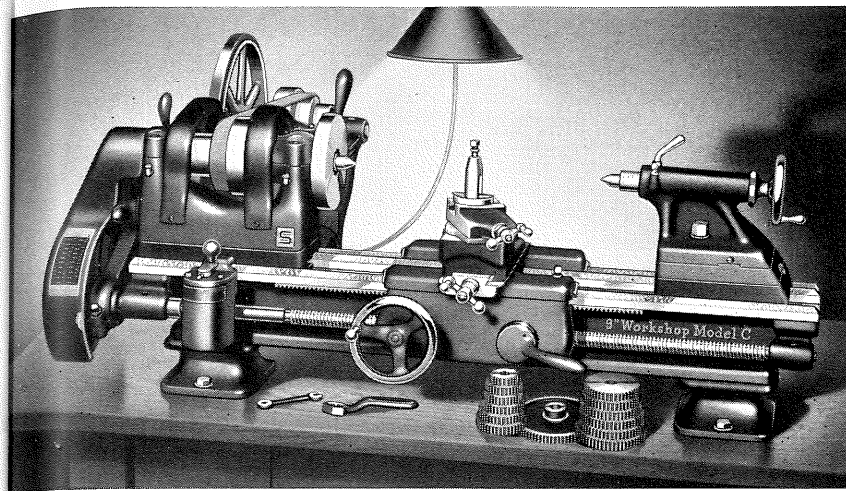
Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	277-Y	277-Z	277-A	277-R
Shipping Weight of Lathe....	445 lbs.	470 lbs.	495 lbs.	520 lbs.
Code Word.....	Mezip	Mezob	Mezub	Molap

Model C 9-inch "Workshop" Countershaft Driven Lathe—with Chip Pan

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	215-YC	215-ZC	215-AC	215-RC
Shipping Weight of Lathe....	435 lbs.	460 lbs.	485 lbs.	510 lbs.
Code Word.....	Lecow	Lecuc	Ledav	Leder

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

9-inch "Workshop" Model A, Model B, and Model C Horizontal Motor Driven Bench Lathes—with Raising Blocks



11¼-inch Swing Over Lathe Bed

"Workshop" Lathes with raising blocks will take work up to 11¼" in diameter over the bed and up to 7¼" in diameter over the tool rest.

Model A, Model B and Model C 9-inch "Workshop" Lathes with adjustable horizontal motor drive equipment and raising blocks are listed in the tabulation below. "Workshop" Lathes with other types of drives can also be supplied with raising blocks. See page 85.

Equipment included in price of 9-inch "Workshop" Lathes with raising blocks is the same as the equipment supplied for the corresponding model and drive without the raising blocks. See pages 70, 71, and 72.

9-inch "Workshop" Lathes with Raising Blocks—Bench Not Included

Swing Over Bed Inches (with Raising Blocks)	Length of Bed Feet	Swing Over Carriage Inches	Approximate Ship. Weight for Crated Adjustable Hor. Drive Lathe Pounds	Model A 9-inch "Workshop" Horizontal Motor Driven Raising Block Bench Lathe		Model B 9-inch "Workshop" Horizontal Motor Driven Raising Block Bench Lathe		Model C 9-inch "Workshop" Horizontal Motor Driven Raising Block Bench Lathe	
				Cat. No.	Code	Cat. No.	Code	Cat. No.	Code
11¼	3	7¼	360	6444-Y	Jasas	6477-Y	Jemal	6415-YC	Keyos
11¼	3½*	7¼	385	6444-Z	Jasew	6477-Z	Jemep	6415-ZC	Keyew
11¼	4*	7¼	410	6444-A	Jasog	6477-A	Jemit	6415-AC	Keyog
11¼	4½	7¼	435	6444-R	Jasum	6477-R	Jemoz	6415-RC	Keyum

9-inch "Workshop" Model A, Model B, and Model C Lathes Countershaft Driven Precision Lathes

The 9-inch "Workshop" Model A Lathe with countershaft drive, illustrated at right is also made in Model B and Model C. These lathes are the same as the lathes shown on pages 70, 71, and 72 respectively except for the floor legs, and type of drive supplied.

Equipment supplied is the same as for corresponding models on pages 70, 71, and 72, except for floor legs and type of drive.

Model A 9-inch "Workshop" Countershaft Driven Floor Leg Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	44-Y	44-Z	44-A	44-R
Shipping Weight of Lathe....	420 lbs.	445 lbs.	470 lbs.	495 lbs.
Code Word.....	Hetaz	Heted	Hetih	Heton

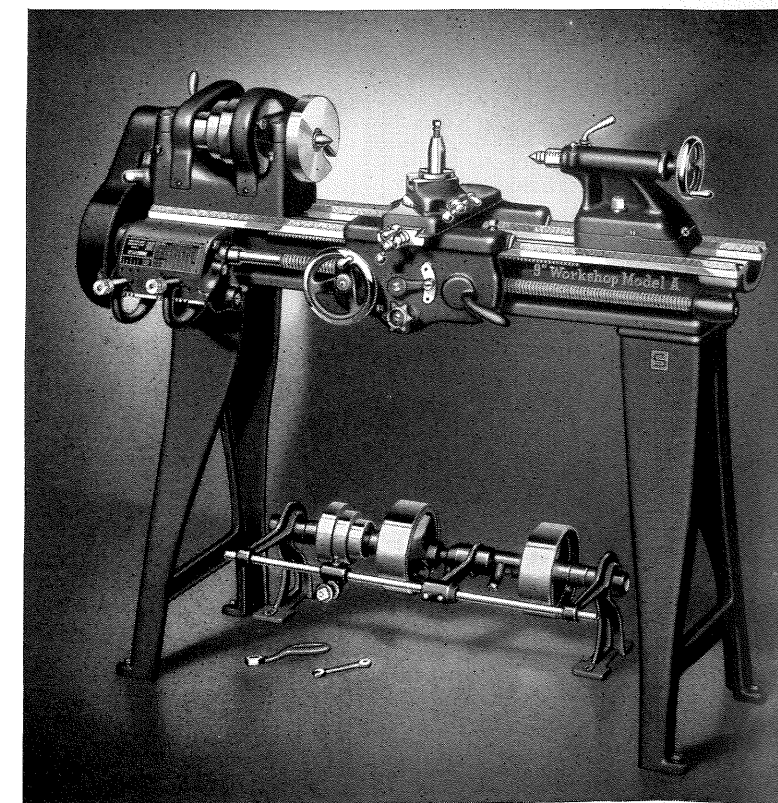
Model B 9-inch "Workshop" Countershaft Driven Floor Leg Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	77-Y	77-Z	77-A	77-R
Shipping Weight of Lathe....	410 lbs.	435 lbs.	460 lbs.	485 lbs.
Code Word.....	Marov	Mayec	Moyuj	Mevor

Model C 9-inch "Workshop" Countershaft Driven Floor Leg Lathes

Bed Length	3-ft.	3½-ft.*	4-ft.*	4½-ft.
Distance Between Centers....	17-in.	23-in.	29-in.	35-in.
Catalog Number.....	15-YC	15-ZC	15-AC	15-RC
Shipping Weight of Lathe....	400 lbs.	425 lbs.	450 lbs.	475 lbs.
Code Word.....	Hepax	Hepeb	Hepif	Hepol

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



Specifications of 16-24-inch General Purpose Lathes

Applying to all 16-24-inch Lathes Shown on Pages 81 to 83

All types of 16-24-inch swing lathes shown in this catalog are identical in workmanship, material and quality, having similar headstock, tailstock, carriage and bed. The only difference between the various models of lathes is in the type of drive and the equipment supplied.

Capacity of Lathe

Swing over bed and saddle wings	24 1/4"
Swing over saddle with chip guard removed	19 3/4"
Swing over saddle with chip guard	19"

Threads and Feeds

Thread cutting range	
Quick change gear lathe—48 threads R.H. or L.H.	2 to 112 per inch
Standard change gear lathe—47 threads R.H. or L.H.	2 to 112 per inch
Longitudinal feeds through friction clutch	
Quick change gear lathe—24 feeds R.H. or L.H.	.003" to .0208"
Standard change gear lathe—29 feeds R.H. or L.H.	.0021" to .021"
Cross feeds through friction clutch	
Quick change gear lathe—24 feeds	.0011" to .0078"
Standard change gear lathe—29 feeds	.0008" to .0078"
Size of lead screw, diameter and threads per inch	1 1/8"-6

Headstock

Hole through spindle	1 3/8"
Maximum collet capacity	7/8"
Size of Center, Morse taper	No. 3
Spindle nose diameter and threads per inch	2 3/8"-6
Width of cone pulley step for belt	2 1/4"
R.P.M. of spindle, back gears engaged	12, 21, 35, 60
R.P.M. of spindle, direct belt driven	112, 185, 294, 488
Large face plate diameter	13 1/4"
Small face plate diameter	8 1/16"

Compound Rest

Cross slide will travel	10 1/2"
Angular hand feed of compound rest top slide	3 3/4"

Tool Post

Size of opening for tool holder shank	5/8" x 1 3/8"
Size of cutter bits tool holder takes	3/8" sq.

Tailstock

Size of Morse taper centers	No. 3
Spindle travel	5 3/4"
Each graduation on tailstock spindle advances spindle	1/16"
Tailstock top will set over for taper turning	1"

Motor

Horsepower of standard motor used on 16-24-inch motor driven lathes	1
R.P.M. of standard motor for underneath motor driven lathe	1150
R.P.M. of standard motor for pedestal motor driven lathe	1725
Number of V-belts used	3

Countershaft

Speed in R.P.M. of shaft	180
Size of pulleys	10" x 3 5/8"

Taper Attachment (telescopic type)

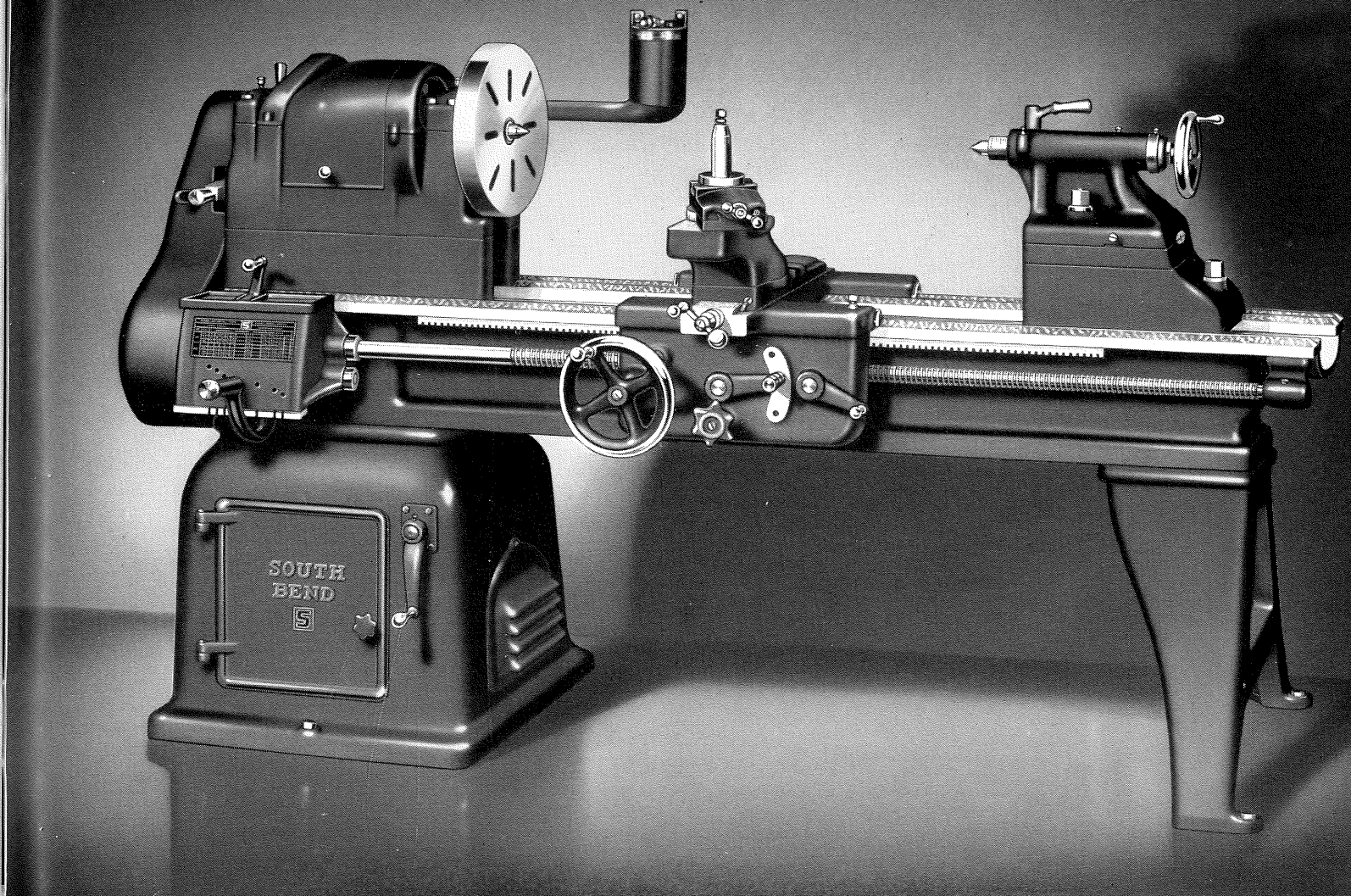
Maximum length turned in one setting	11 1/2"
Maximum taper per foot	3"

Metric Lathe Specifications

Applying only to lathes with metric lead screw and metric graduations. See pages 108 to 110.

Quick change gear lathe cuts 46 threads R.H. or L.H.	7.5 mm to 0.2 mm
Standard change gear lathe cuts 35 threads R.H. or L.H.	7.0 mm to 0.2 mm
Lead screw pitch	4.0 mm
Cross feed screw pitch	3.0 mm
Compound rest feed screw pitch	3.0 mm
Each graduation on cross feed micrometer collar advances tool	0.02 mm
Each graduation on compound rest micrometer collar advances tool	0.02 mm
Each graduation on tailstock spindle advances spindle	1.0 mm

For description of lathe features see pages 6 to 11



16-24-inch General Purpose Lathe—Series "T" Underneath Belt Motor Driven Type

The 16-24-inch General Purpose Lathe is a practical tool for machining large diameter work that is not excessively heavy. This lathe is the same as the 16-inch shown on page 15, except that the height of the centers is increased by the use of raising blocks, making the swing of the lathe 24 1/4" in diameter over the bed and 19" in diameter over the saddle bridge. See specifications of lathe on page 80.

ing motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box or set of independent change gears; installation plan, and book "How to Run a Lathe."

The Large Capacity of this lathe makes it a valuable tool for the shop requiring a general purpose precision lathe for large diameter jobs, such as boring jig plates, turning and boring wheels, machining pulleys and similar work. Although this lathe has ample capacity for large, awkward jobs, it is not too heavy and cumbersome for efficient operation on small parts.

Regular Equipment included in price consists of: 1 H.P. instant reversing ball bear-

SOUTH BEND, INDIANA, U.S.A.

Quick Change Gear

16-24-inch Underneath Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers	30-in.	42-in.	54-in.	78-in.	102-in.
Catalog Number	198-C	198-D	198-E	198-G	198-H
Shipping Weight of Lathe	2480 lbs.	2560 lbs.	2640 lbs.	2800 lbs.	3030 lbs.
Code Word	Beluj	Bemux	Benaq	Beniy	Benuk

Standard Change Gear

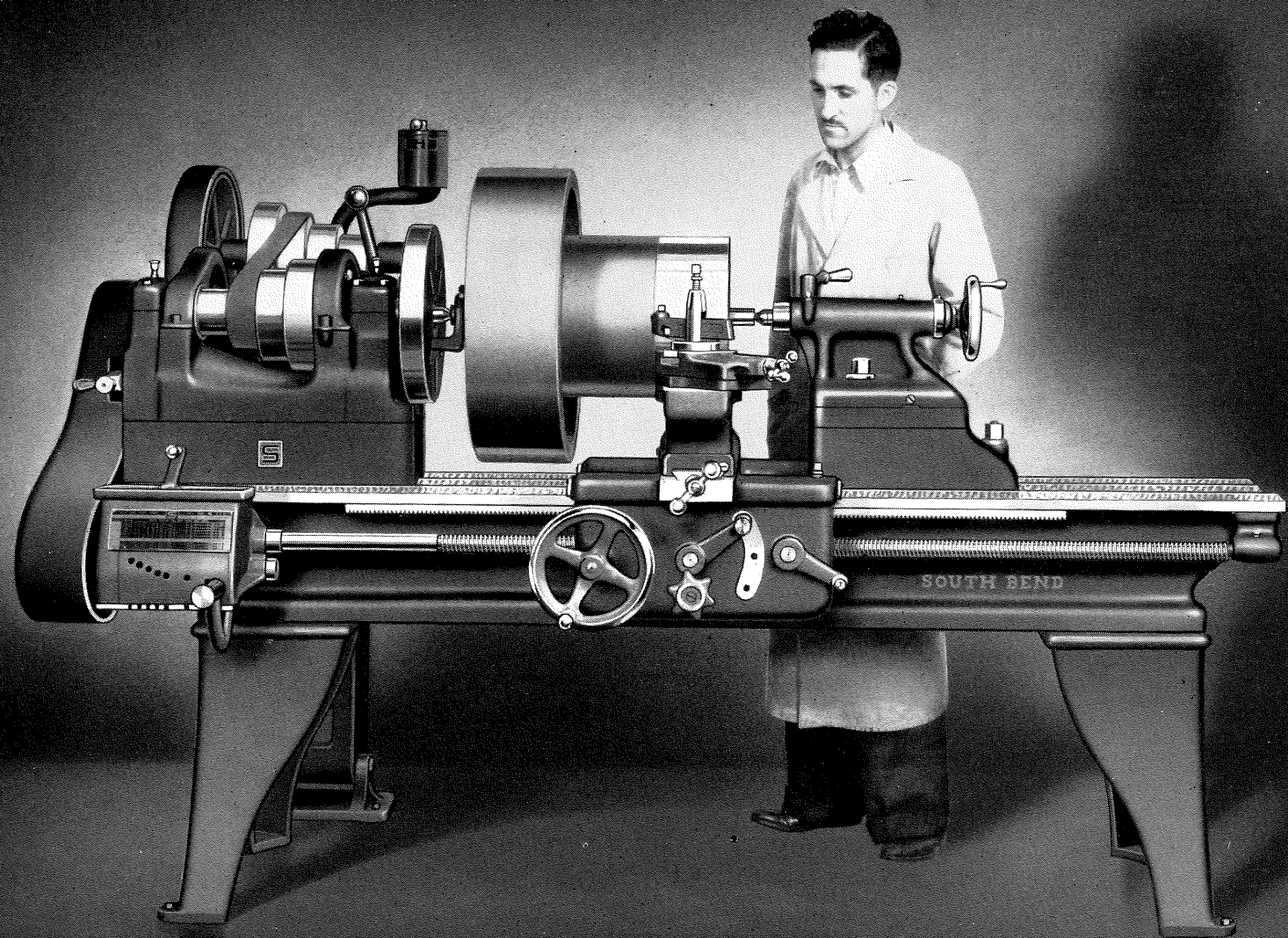
16-24-inch Underneath Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers	30-in.	42-in.	54-in.	78-in.	102-in.
Catalog Number	157-C	157-D	157-E	157-G	157-H
Shipping Weight of Lathe	2445 lbs.	2525 lbs.	2605 lbs.	2765 lbs.	2995 lbs.
Code Word	Bipan	Biper	Bisac	Biseg	Bisog

81

16-24"
LATHES

16-24"
LATHES



16-24-inch General Purpose Lathe—Series "T" Pedestal Motor Driven Type

The 16-24-inch General Purpose Lathe is a practical tool for machining large diameter work that is not excessively heavy and is popular for use in tool and die shops, manufacturing plants, machine shops and general repair shops. This lathe is the same as the 16-inch lathe shown on page 16, except that the height of the center is increased by the use of raising blocks. See specifications on page 80.

This Lathe is popular for use in tool and die shops, manufacturing plants, machine shops and general repair shops. It is especially practical for the small general shop that has only one or two lathes, yet must be equipped to take care of a wide variety of work. The unusual capacity permits machining large diameters, yet the lathe is not too heavy and cumbersome for accurate work on small parts.

Regular Equipment included in price of this lathe consists of: 1 H.P. instant reversing

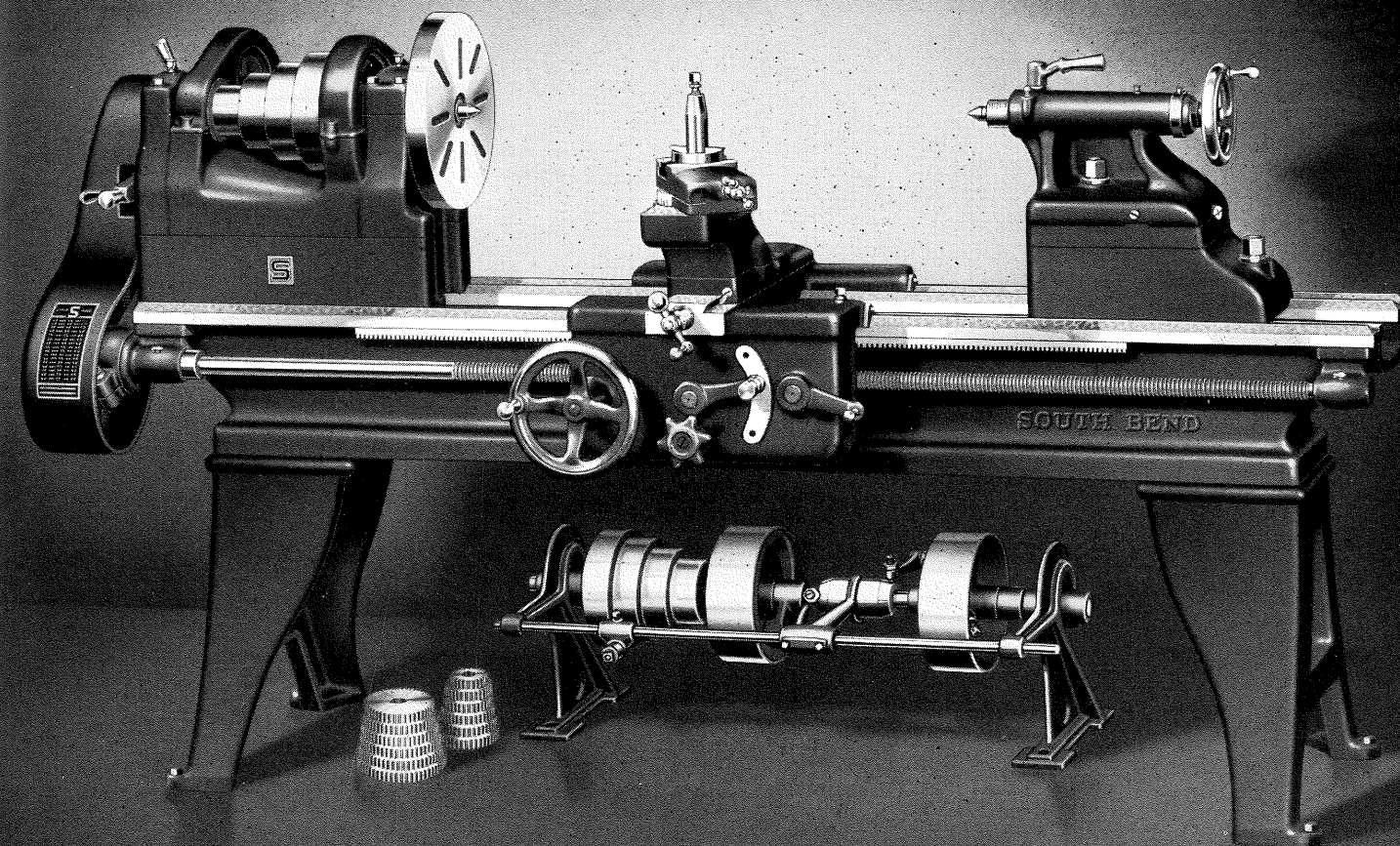
motor; reversing switch; wiring; 3 V-belts; flat leather belt; large and small face plates; forged steel heat treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box or set of independent change gears; installation plan and book "How to Run a Lathe."

Quick Change Gear 16-24-inch Pedestal Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers . . .	30-in.	42-in.	54-in.	78-in.	102-in.
Catalog Number	998-C	998-D	998-E	998-G	998-H
Shipping Weight of Lathe . . .	2325 lbs.	2405 lbs.	2485 lbs.	2645 lbs.	2875 lbs.
Code Word	Likuc	Lilez	Lilid	Lilolj	Lilup

Standard Change Gear 16-24-inch Pedestal Motor Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers . . .	30-in.	42-in.	54-in.	78-in.	102-in.
Catalog Number	957-C	957-D	957-E	957-G	957-H
Shipping Weight of Lathe . . .	2290 lbs.	2370 lbs.	2450 lbs.	2610 lbs.	2840 lbs.
Code Word	Padad	Padeh	Padil	Pador	Padux



16-24-inch General Purpose Lathe—Series "T" Countershaft Driven Type

The 16-24-inch General Purpose Lathe is a practical tool for machining large diameter work that is not excessively heavy and is popular for use in tool and die shops, manufacturing plants, machine shops and general repair shops. This lathe is the same as the 16-inch lathe shown on page 19, except that the height of the center is increased by the use of raising blocks. See specifications on page 80.

This Lathe is popular for the small general shop that must be equipped to take care of a wide variety of work. The increased swing over the lathe bed and carriage permits machining work that would otherwise require a much larger and heavier lathe. The raising blocks are substantially constructed and permit taking cuts as heavy as could be taken on the same lathe without raising blocks.

Regular Equipment included in price of this lathe consists of: reversing countershaft

with two friction clutch pulleys; large and small face plates; forged steel heat treated tool post; adjustable thread cutting stop; tool steel centers for headstock and tailstock spindles; headstock spindle sleeve; wrenches; quick change gear box or set of independent change gears; installation plan and instruction book "How to Run a Lathe."

Quick Change Gear 16-24-inch Countershaft Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers . . .	30-in.	42-in.	54-in.	78-in.	102-in.
Catalog Number	98-C	98-D	98-E	98-G	98-H
Shipping Weight of Lathe . . .	2035 lbs.	2115 lbs.	2195 lbs.	2355 lbs.	2505 lbs.
Code Word	Totab	Totef	Toton	Totop	Totuv

Standard Change Gear 16-24-inch Countershaft Driven Lathes

Bed Length	6-ft.	7-ft.	8-ft.	10-ft.	12-ft.
Distance Between Centers . . .	30-in.	42-in.	54-in.	78-in.	102-in.
Catalog Number	57-C	57-D	57-E	57-G	57-H
Shipping Weight of Lathe . . .	2000 lbs.	2080 lbs.	2160 lbs.	2320 lbs.	2470 lbs.
Code Word	Tonay	Tonec	Tonig	Tonom	Tonus

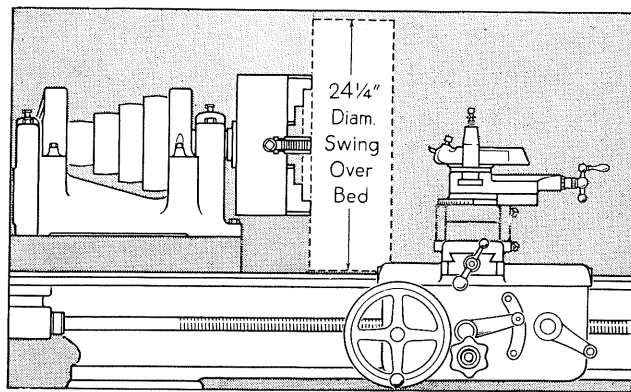


Fig. Q. Lathes with Raising Blocks have increased swing the entire distance between centers.

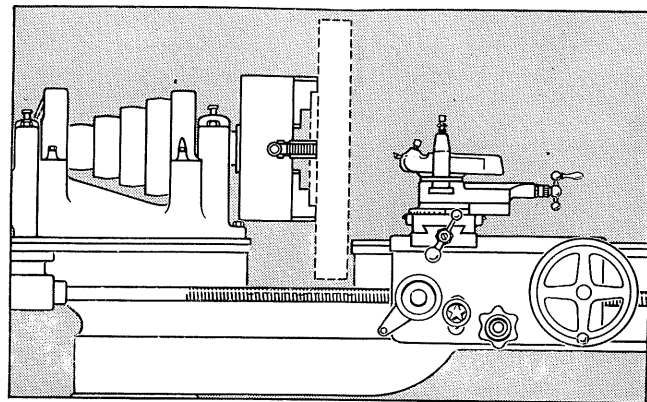


Fig. R. The increased swing of Gap Bed Lathes is limited to the width of the gap in the bed.

Raising Block Equipment for Lathes

The Advantages of Raising Block Lathes over Gap Bed Lathes

For machining large diameter work, raising block construction is preferable to gap bed construction because the increased swing over the lathe bed is available the entire distance between centers. This permits mounting large diameter work of any length (within the capacity of the lathe) in the chuck or between centers.

In Europe the gap bed design has been popular in the past, largely because well designed raising block equipment was not available. The disadvantage of the gap bed construction is obvious. The increased swing is available only for the width of the gap in front of the headstock, and no increased capacity is available over the lathe carriage. See Fig. R, above. This limits the large diameter work that can be done on the gap lathe to narrow jobs that do not extend beyond the width of the gap.

When a heavy chuck must be used, the available width for work is even less, because most of the width of the gap is taken up by the lathe chuck as shown in Fig. R, at top of page.

The improved offset design of the South Bend raising block for the tool rest, shown in Fig. S, below,

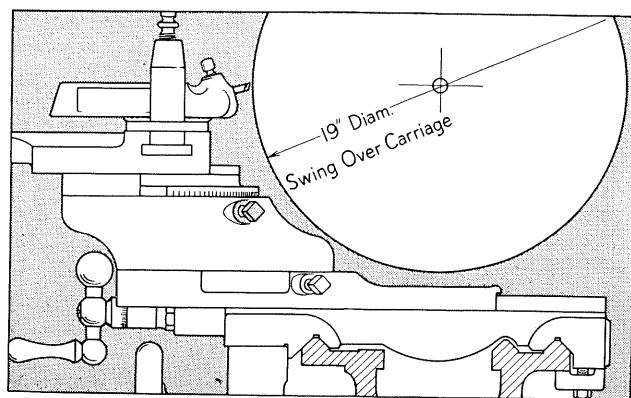


Fig. S. Offset Raising Block for Tool Rest provides increased swing over the lathe carriage.

permits machining large diameter work over the lathe carriage, as well as over the lathe bed.

The standard right hand saddle and apron are used on all South Bend lathes with raising blocks, as shown in Fig. Q, above. Note that the apron hand wheel is on the left and the half-nut lever is on the right side of the apron as on lathes not equipped with raising blocks.

The left hand saddle and apron as used in gap lathe construction (shown in Fig. T) is awkward to the mechanic who is accustomed to standard lathe design. The saddle can overhang the gap, which is objectionable to fine accurate work.

Lathes with raising blocks are practical for the small general shop which has only one or two lathes, yet must be equipped to take care of a wide variety of work. The lathe fitted with raising blocks has unusual capacity for machining large diameters, yet is not too heavy and cumbersome for accurate work on any of the smaller jobs.

The manufacture of gap bed lathes has been discontinued by the South Bend Lathe Works, and in their place lathes with raising blocks are recommended.

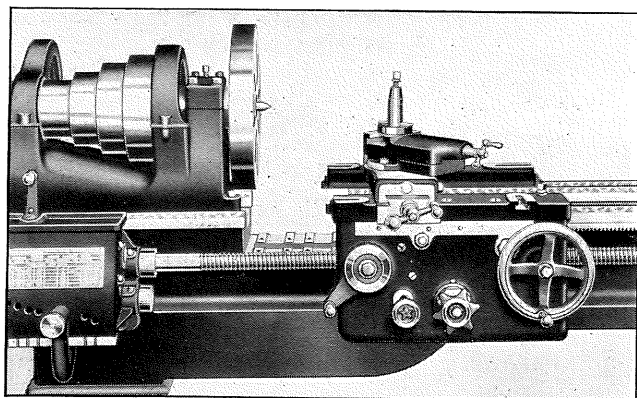
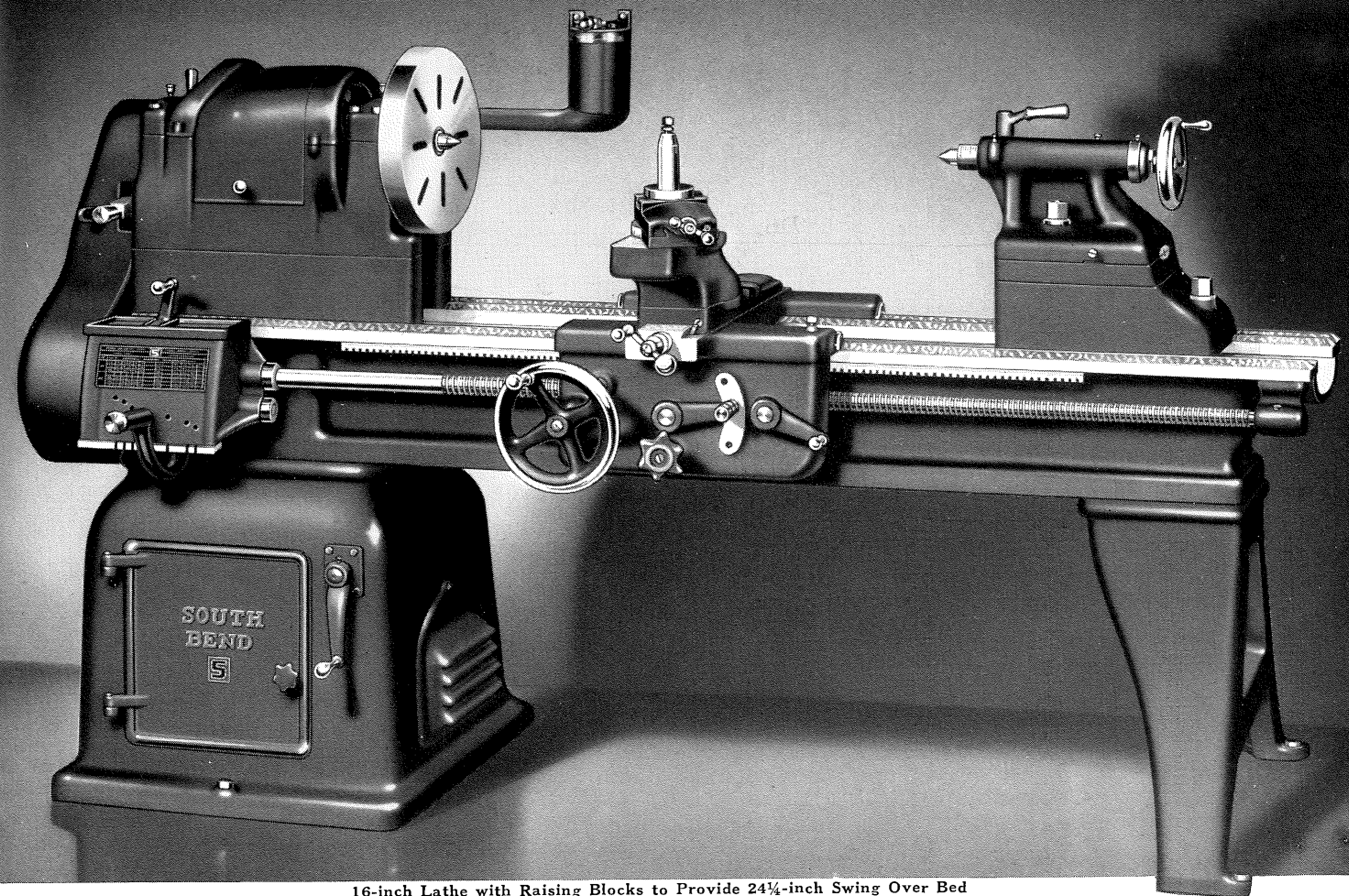


Fig. T. The overhang of the saddle on Gap Bed Lathes leaves saddle unsupported when machining work.



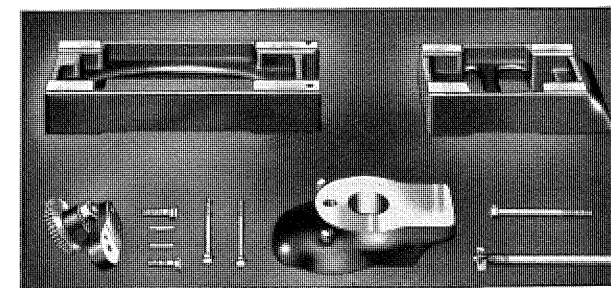
16-inch Lathe with Raising Blocks to Provide 24 1/4-inch Swing Over Bed

Raising Block Equipment for South Bend Lathes

Increased Swing Over Bed and Carriage for All Sizes and Types of Lathes

Raising blocks are used to increase the swing over the lathe bed and carriage for machining light work of large diameter. Raising Blocks are preferable to a Gap Bed because the increased swing is available the entire length of the lathe bed and is not limited to face plate and chuck work.

Raising blocks ordered with the lathe will be fitted and aligned at the factory and should not be removed from the lathe. If it is necessary to remove the raising blocks from the lathe, this must be specified when the lathe is ordered, as an extra charge is made for special fitting and accessories required when the lathe is to be used both with and without the raising blocks.



Raising Block Equipment for Quick Change Gear Lathe

Raising Block Equipment includes gearing to connect lathe spindle and lead screw for cutting all the regular screw threads and for all automatic power feeds provided on lathes without raising blocks.

Raising Block Equipment for Various Sizes and Types of South Bend Lathes

Swing Size of Lathe	Height of Raising Blocks	Swing Over Bed With Raising Blocks	Swing Over Carriage With Raising Blocks*	Approx. Shipping Weight Pounds	For Countershaft or Pedestal Motor Drive Lathes				For Underneath Motor Drive Lathes			
					Standard Change Gear		Quick Change Gear		Standard Change Gear		Quick Change Gear	
					Catalog No.	Code Word	Catalog No.	Code Word	Catalog No.	Code Word	Catalog No.	Code Word
9" W.S.	1"	11 1/4"	7 1/4"	36	1001-W	Jacis	1121-W	Jabuq	1581	Levos	1635	Kesap
9"	1 1/16"	12"	8 1/2"	45	1000	Jadab	1121	Jadur	1582	Levuy	1636	Keset
11"	1 3/4"	14 1/4"	10 1/2"	58	1002	Jafom	1122	Jafec	1583	Lewas	1637	Kesix
13"	2 5/8"	18"	13 1/2"	100	1003	Japux	1123	Jafig	1584	Lewew	1638	Kesod
14 1/2"	2 3/4"	19 3/4"	14 3/4"	125	1009	Jagug	1162	Jaqar	1585	Lewog	1639	Kesuj
16"	2 1/2"	20 7/8"	15 5/8"	170	1005	Japor	1125	Jalop	1587	Lewum	1641	Kerop
16"	4 3/4"	24 1/4"	19 3/4"	200	1039	Jataf	1163	Jelur				

*Swing over carriage with chip guard removed.

SOUTH BEND, INDIANA, U.S.A.

85

Types of Drives for the Lathe

Four Types of Drives

South Bend Lathes are made in four types of drives: Underneath Belt Motor Drive, Pedestal Motor Drive, Adjustable Horizontal Motor Drive, and Overhead Countershaft Drive.

Underneath Belt Motor Drive

The South Bend Underneath Belt Motor Drive shown at right is an efficient and practical direct drive equipment for a modern 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.

Power is transmitted from the motor to the countershaft by V-belts and from the countershaft up through the lathe bed to the headstock cone pulley by a flat leather belt. The pull of the belt is downward against the solid portion of the headstock.

Precision belt tension adjustments "C" and "D" are provided for taking up belt stretch and for obtaining any desired tension on both the motor belt and cone pulley belt. Belt tension release lever "B" conveniently located on the front of the cabinet leg permits the easy shifting of the cone pulley belt.

Pedestal Motor Drive

The pedestal motor drive shown at right is an efficient and economical direct motor drive for the lathe. The motor and countershaft are mounted on the pedestal back of the lathe. Power is transmitted from the motor to the countershaft by V-belts, and from the countershaft to the lathe spindle by a flat leather belt.

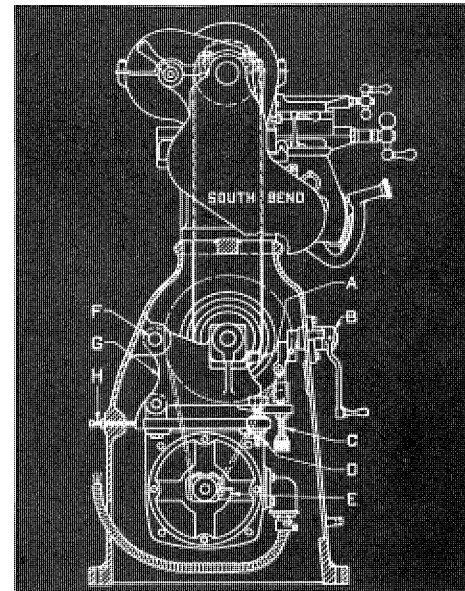
Belt tension adjustments "A" and "D" are provided for adjusting the cone pulley belt tension and the motor belt tension. The pull of the belt is counteracted by an adjustable brace between the lathe headstock and the countershaft in such a way that there is no side pull on the lathe. A belt tension release lever permits easy shifting of the cone pulley belt.

Horizontal Motor Drive for Bench Lathes

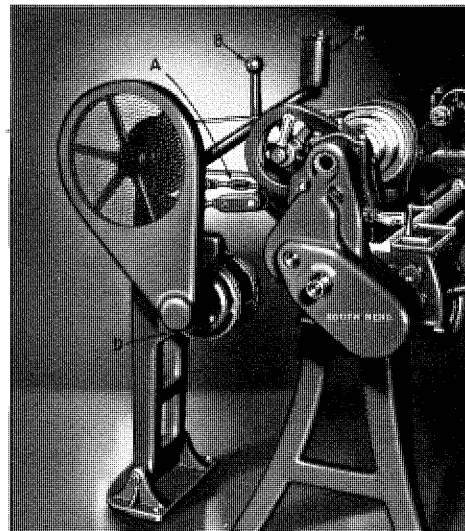
The illustration at right shows a 9-inch swing bench lathe equipped with the adjustable horizontal motor drive. This practical and efficient motor drive has become very popular for use with bench lathes.

Belt tension adjustments "A" and "B" are provided for adjusting the tension of the cone pulley belt and the motor belt. The pull of the belt is neutralized by an adjustable brace between the headstock and the countershaft in such a way that there is no side pull on the lathe.

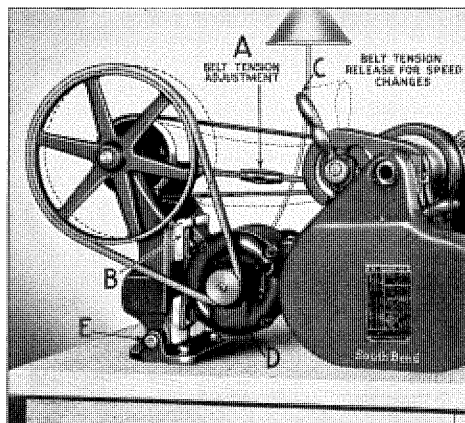
A belt tension release lever "C" permits releasing the cone pulley belt tension so that the belt may easily be shifted from one step of the cone pulley to another. A flat leather belt is usually used between the cone pulleys, and a V-belt is used between the motor pulley and the countershaft pulley.



(Patented) Cross Section End View of Underneath Motor Drive



(Patented) End View of Pedestal Motor Drive



(Patented) Adjustable Horizontal Motor Drive for Bench Lathe

Types of Drives for the Lathe (Continued)

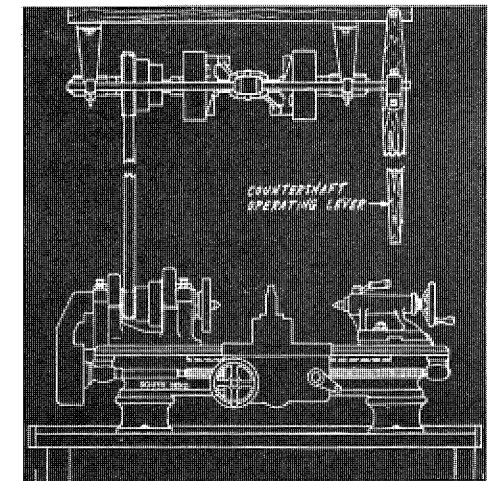
Countershaft Drive

The overhead countershaft drive is used principally in factories where a number of countershaft driven machines are operated from a lineshaft. This is the most economical type of drive for use in shops where a number of machines are operated simultaneously.

Countershaft drive is usually used in localities where electricity is not available and a gasoline engine or other source of power is used to drive a lineshaft from which one or more countershaft driven machines may be operated.

In some shops the individual motor drive is more practical and efficient than a lineshaft drive, because a small motor can be used to drive each machine, and the use of hangers, lineshafting, etc., is eliminated. Power consumption may also be reduced, as when the machine is not being used the motor power may be cut off.

Motor drive is more popular than countershaft drive, about 80% of the purchasers selecting motor drive.



Countershaft Drive Bench Lathe

Change Gear Equipment for Lathe

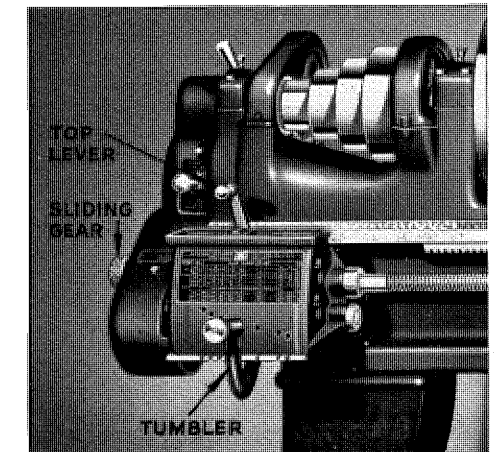
There are two types of change gear equipment for the lathe: the quick change gear box and the standard change gear equipment.

Quick Change Gear Box

The Quick Change Gear Lathe is popular in busy shops where frequent changes of threads and feeds must be made. The quick change feature is preferable for tool and die work, general repair and maintenance, and for some production operations.

A Quick Change Gear Lathe is one in which the gearing between the headstock spindle and the lead screw is so arranged that changes for obtaining various pitches of screw threads may be made through a quick change gear box without removing or replacing a gear.

The gears in the gear box are shifted by levers operated from the front of the lathe. The illustration at the right shows the quick change gear mechanism of a South Bend Lathe. The quick change gear box provides a series of 48 changes for cutting right and left hand screw threads, also a wide range of power feeds for turning, boring and facing.

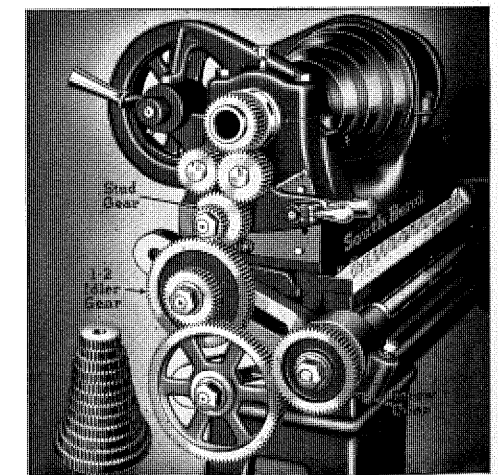


Quick Change Gear Equipment

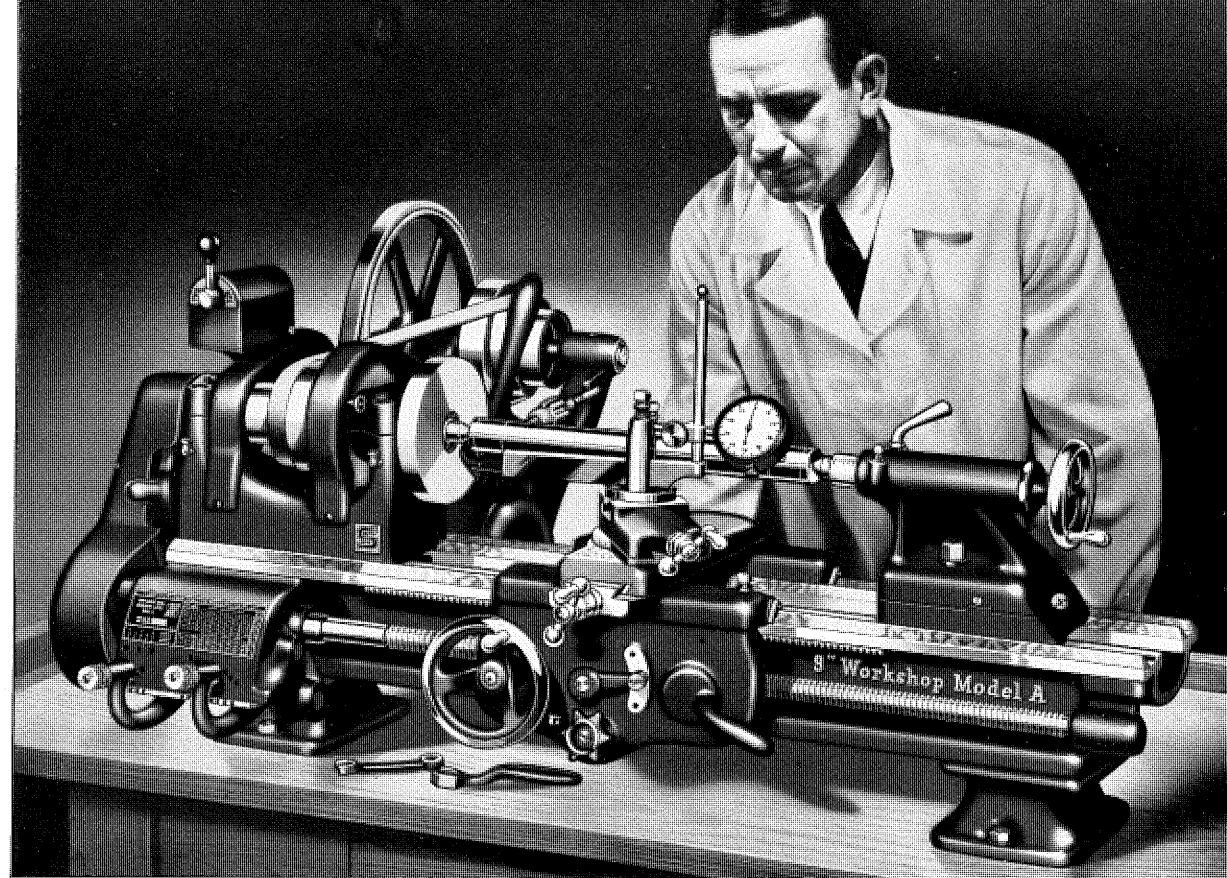
Standard Change Gears

The Standard Change Gear Lathe is popular in the small shop, as it is less expensive than the Quick Change Gear type of lathe. It is also widely used in industrial plants for production operations where few changes of threads and feeds are necessary. For this class of work, the Standard Change Gear Lathe has an advantage in that when set up with the correct feeds for an operation, the adjustments are not as easily tampered with and changed as they are on the Quick Change Gear type of lathe.

The Standard Change Gear Lathe has a set of independent change gears for connecting the headstock spindle of the lathe with the lead screw, as shown in the illustration at the right. These gears may be arranged so that practically any pitch of screw thread may be cut. The change gears are also used for obtaining a wide range of power cross feeds and power longitudinal feeds for turning and facing operations.



Standard Change Gear Equipment

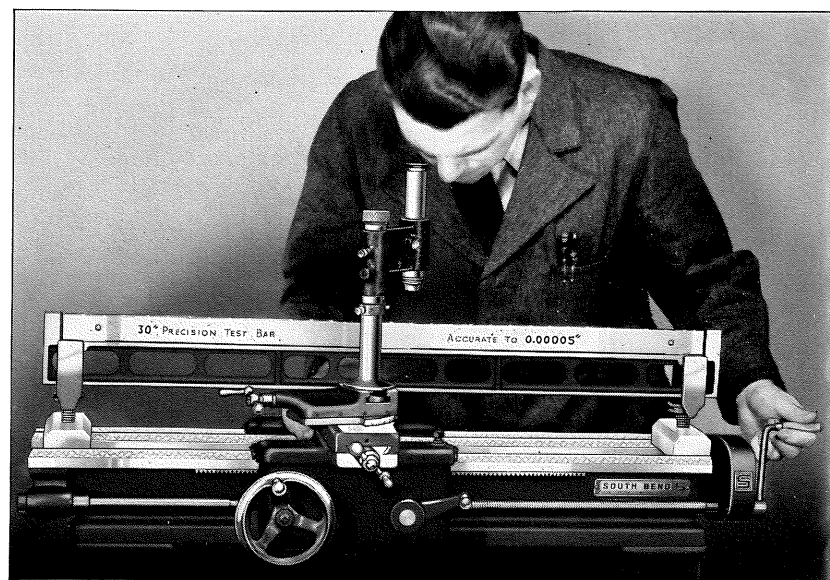


Precision Accuracy Is Built Into South Bend Lathes Best Equipment Available Used for Manufacturing and Testing

A complete equipment of jigs, fixtures, and gauges designed by the best engineering talent in the industry enables us to manufacture parts for South Bend Lathes with utmost accuracy. From the planing of the lathe bed to the final testing of the finished lathe, the highest standards of inspection are maintained.

Special testing equipment developed in our well-equipped research laboratory is used throughout the process of manufacture to check the accuracy of all important lathe units and parts. One of the many efficient pieces of equipment is an optical measuring device of unusual precision which is used for testing the accuracy of the lead screw.

Testing a Saddle Cross Slide Dovetail



Testing a Lead Screw with Special Optical Measuring Equipment

The workmanship on South Bend Lathes is a feature that will appeal to the mechanic. This superior quality of workmanship is made possible by the highly specialized skill of our employees and the excellent mechanical equipment of our shops. An experienced mechanic can see at a glance that only the finest craftsmanship enters into the construction of South Bend Lathes.

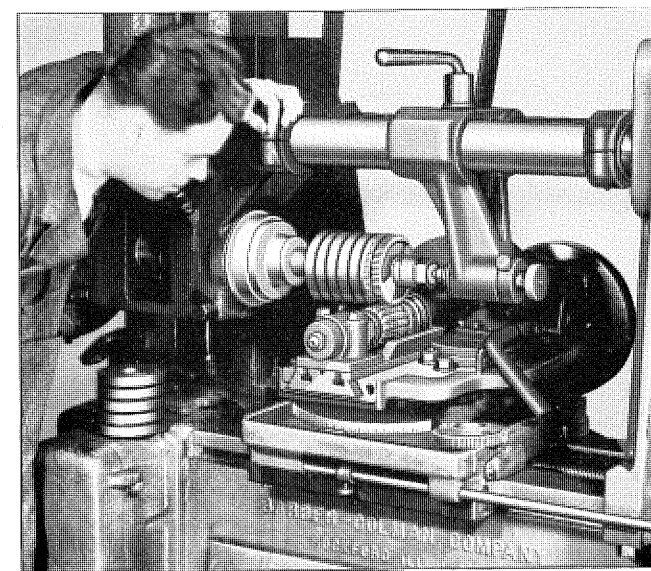
NOTE—See page 112 for additional information on accuracy tests for South Bend Lathes.

Equipment Used for Manufacturing and Testing Gears Used on South Bend Lathes

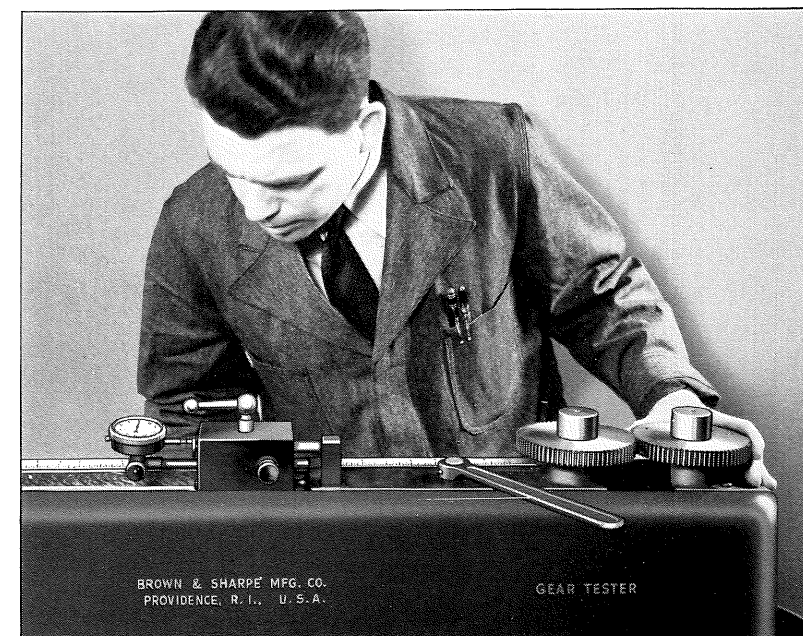
All gears used on South Bend Lathes are made of steel or semi-steel blanks, and the teeth are precision cut from the solid on automatic gear hobbing machines.

Bar steel or steel forgings are used for the apron gears, reverse gears, and all pinions. All gears in the quick change gear box are also made of steel. Each gear is carefully tested to assure precision accuracy and smooth, quiet operation.

The precision testing machine shown in the illustration at right is used for testing gears used on South



Automatic Gear Hobbing Machine

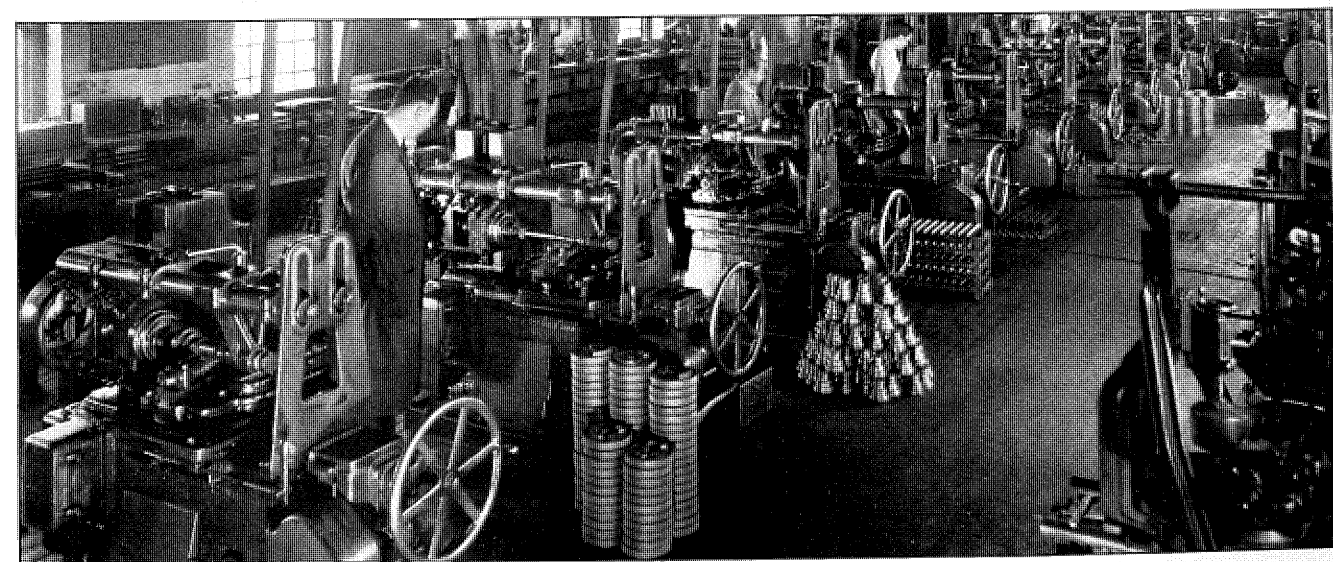


Precision Gear Testing Machine

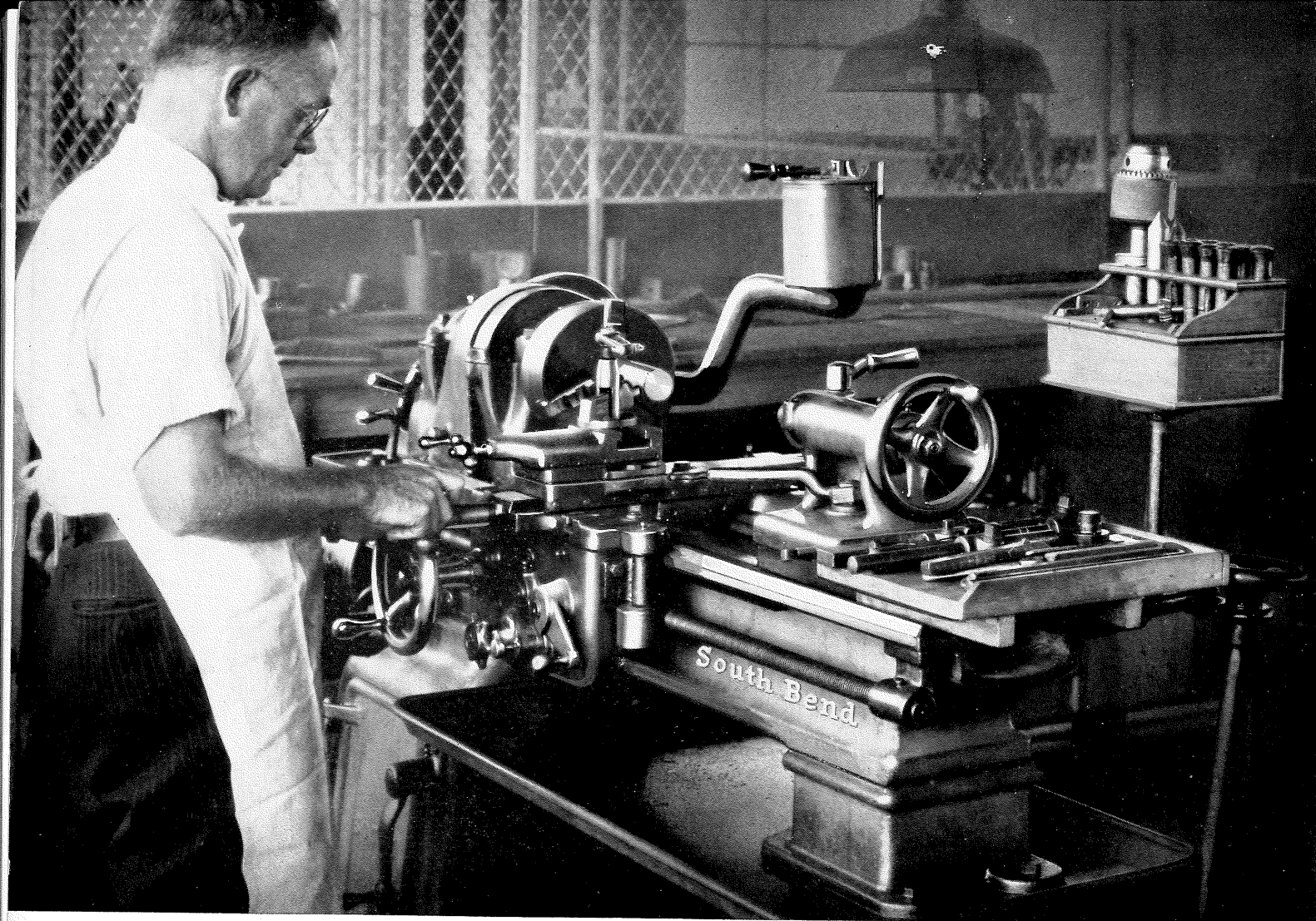
Bend Lathes. This machine is equipped with a vernier scale and sensitive dial indicator which will disclose the slightest error in diameter of pitch circle, eccentricity of pitch diameter or irregularity of tooth form.

The Gear Cutting Department is equipped with 21 automatic gear hobbing machines similar to the one shown in the illustration at left. These machines make possible the economical production of precision gears of uniformly high quality. The saving is naturally reflected in the selling price of the lathe.

NOTE—See page 112 for additional information on accuracy tests for South Bend Lathes



Gear Cutting Department Where All Gears Used on South Bend Lathes are Manufactured
SOUTH BEND, INDIANA, U.S.A.



Attachments, Chucks and Tools for All Sizes and Types of South Bend Lathes

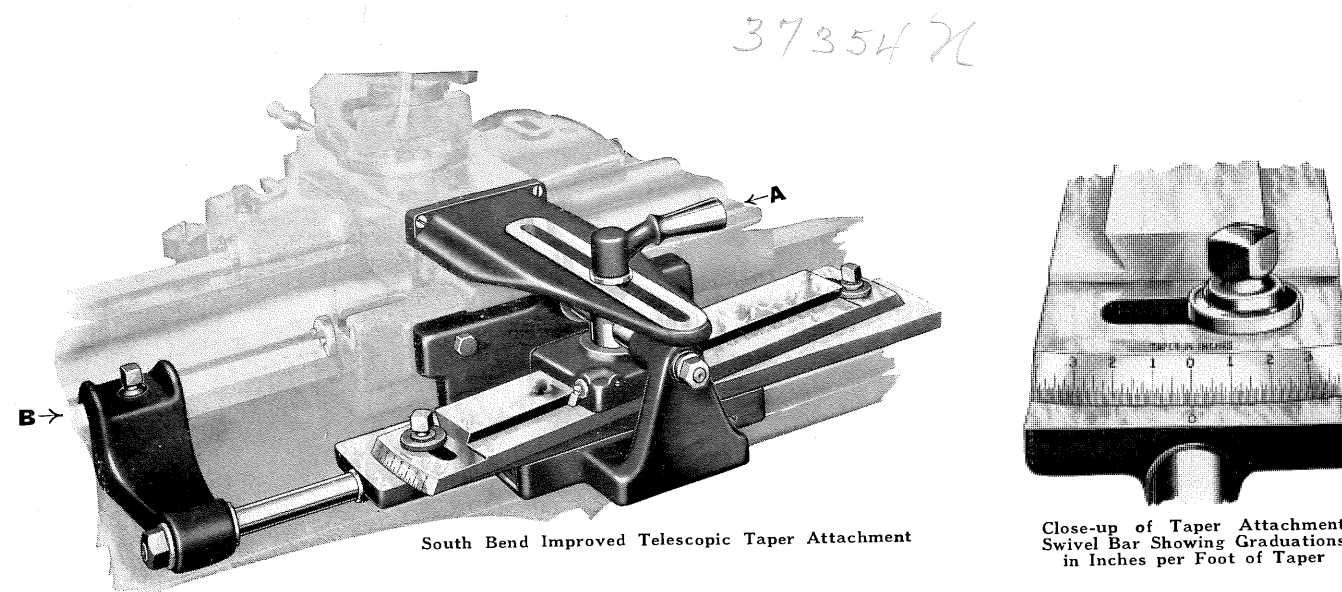
Attachments, Chucks and Tools for all sizes and types of South Bend Lathes are illustrated and described on the following pages. All attachments are in proportion to the size of the lathe for which they are intended. The attachments greatly increase the usefulness of the lathe, and most of them may be purchased either with the lathe or separately.

Attachments for Manufacturing include hand lever type draw-in collet chuck attachment, hand lever tailstock, hand lever double tool slide, oil pan, pump and piping, bed turret attachment and four-way tool post. Many South Bend Lathes fitted with these attachments are in operation in industrial shops throughout the United States and are produc-

ing interchangeable parts in large quantities to unusually close tolerances.

Tool Room Attachments include hand wheel type draw-in collet chuck attachment, telescopic taper attachment, micrometer carriage stop, thread dial indicator and chip pan. All of these attachments are convenient for precision tool and die work and are included as regular equipment on South Bend Tool Room Lathes, although they may be purchased separately if desired.

When ordering attachments for lathes now in service, be sure to specify the serial number which is stamped on top of the lathe bed at the right end between the front V-way and the flat way.



South Bend Improved Telescopic Taper Attachment

Close-up of Taper Attachment Swivel Bar Showing Graduations in Inches per Foot of Taper

Taper Turning Attachment for South Bend Lathes

With Telescopic Cross Feed Screw and Taper Gibs

Taper turning and boring is as easily accomplished as straight turning on lathes equipped with the South Bend Improved Taper Turning Attachment. Accuracy and smooth operation are assured by the practical design and rugged construction of this attachment. A telescopic cross feed screw eliminates the necessity of disconnecting the cross feed nut when the taper attachment is to be used.

The ease with which tapers may be produced on lathes equipped with this taper attachment makes it especially popular for tool room work and for production operations involving taper turning and boring. All tapers up to three inches per foot may be turned and bored.

The attachment is permanently mounted on the lathe carriage and is always ready for use in any position along the entire length of the lathe bed. It does not in any way interfere with straight turning and boring, and only a few seconds are required to change over from straight to taper work.

To set up the lathe for taper turning, the swivel bar, which is graduated in both degrees and taper per foot, is first set to the required angle. The cross feed screw is then used to adjust the lathe tool for the required diameter, and binding screws "A" and

"B" are locked. The lathe is now set for taper turning and either hand or power longitudinal feed may be used. To change back to straight turning it is only necessary to release binding lever "A."

When binding lever "A" is tightened the cross slide of the lathe carriage is rigidly locked to the taper attachment swivel slide, and the thrust is removed from the cross feed screw.

Adjustable Taper Gibs

Both the top and bottom slides of the taper attachment are dovetailed and have adjustable tapered gibs. The dovetails are accurately hand-scraped and fitted. The entire attachment is excellently designed and substantially constructed.

Telescopic Graduated Taper Attachment Must Be Ordered with Lathe

Size of Lathe	Catalog No.	Maximum Taper			Approx. Shipping Weight	Code Word
		At One Setting	Per Foot	In Degrees		
9 in.	377	8½ in.	3 in.	14	40 lbs.	Mereh
11 in.	378	8½ in.	3 in.	14	50 lbs.	Mokad
13 in.	379	9¼ in.	3 in.	14	65 lbs.	Mokil
14½ in.	399	9¼ in.	3 in.	14	80 lbs.	Mokux
16 in.	381	11½ in.	3 in.	14	100 lbs.	Munar
16-24 in.	383	11½ in.	3 in.	14	100 lbs.	Moyix

Taper Attachment for 9-inch "Workshop" Lathes

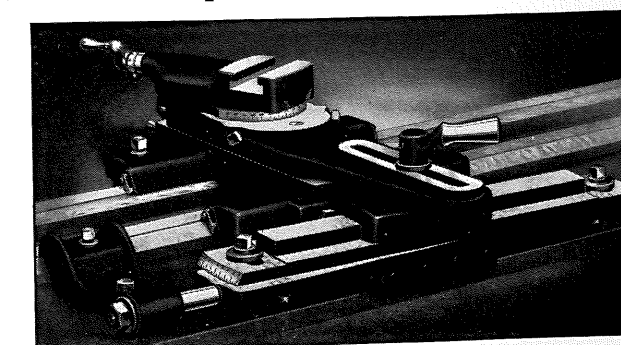
The plain taper attachment shown at right is supplied for turning and boring all classes of taper work on the 9-inch "Workshop" Lathes. The attachment is bolted to the lathe carriage and can be used in any position along lathe bed. Does not interfere with straight turning.

This taper attachment has plain cross feed screw and straight gibs. The cross feed screw and nut must be disconnected before the taper attachment can be engaged for taper turning and boring. Telescopic cross feed screw cannot be supplied.

The swivel bar which controls the taper is graduated and can be set for cutting any taper up to 3" per foot and up to 7" in length at one setting; maximum taper 14 degrees, in either direction. Attachment must be fitted to lathe at factory.

Cat. No. 428-W. Plain Taper Attachment for 9-in. "Workshop" Lathes. W't 35 lbs. Code, "Hapwo."

SOUTH BEND, INDIANA, U.S.A.



Taper Attachment for 9" "Workshop" Lathe

ATTACHMENTS

ATTACHMENTS

Hand Wheel Type Draw-in Collet Chuck Attachment

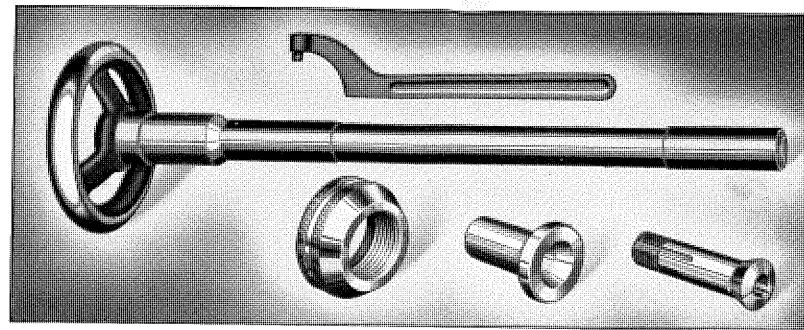
For Accurately Chucking
Small Diameter Work

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. The collets are made for round, square and other shapes, as shown on page 93.

The hollow draw bar extending through the lathe spindle is threaded on the right end to fit the collet. When the hand wheel on the left end of the draw bar is turned, the spring collet is drawn into the taper closing sleeve, causing it to tighten on the work.

Equipment Included in Price

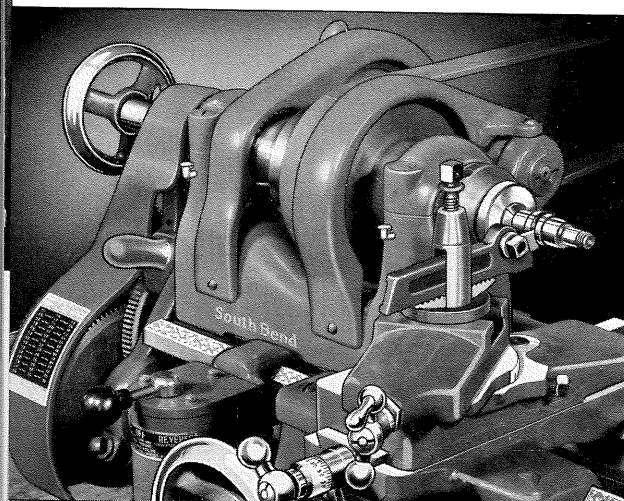
The price of the Hand Wheel Draw-in Collet Chuck Attachment includes hand wheel and hollow draw bar, spindle nose cap, spanner wrench for nose cap, tapered steel closing sleeve, and one round, split collet of any standard diameter. The tapered closing sleeve is made of tool steel, hardened and ground, to minimize wear and to insure accuracy.



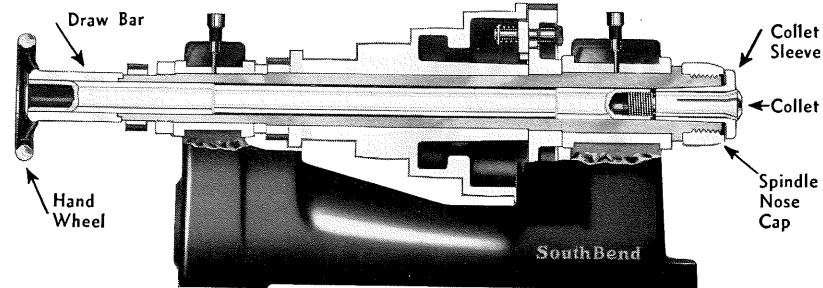
Hand Wheel Type Draw-in Collet Chuck Attachment and Equipment

Hand Wheel Draw-in Collet Chuck with One Round Split Collet

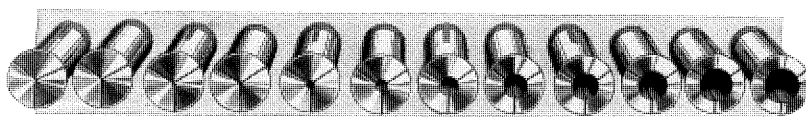
Size of Lathe	Catalog No.	Hole in Lathe Spindle	Collet Capacity in Sixty-fourths (for Round Work)	Code Word
9 in. "Workshop"	4306-W	3/4 in.	1/8 in. up to 1/2 in.	Acrut
9 in.	4309	3/4 in.	1/8 in. up to 1/2 in.	Aaron
9 in. (1" collet lathe)	2609	1 1/8 in.	1/8 in. up to 1 in.	Cinas
11 in.	4311	1 in.	1/8 in. up to 1 1/2 in.	Abode
13 in.	4313	1 1/8 in.	1/8 in. up to 1 3/4 in.	About
14 1/2 in.	4314	1 1/2 in.	1/8 in. up to 2 in.	Cilam
16 in.	4316	1 3/4 in.	1/8 in. up to 2 1/4 in.	Adore
16-24 in.	4317	1 3/4 in.	1/8 in. up to 2 3/4 in.	Cileq



Lathe Equipped with Hand Wheel Type Draw-in Collet Chuck Attachment



Cross Section of Headstock Showing Construction of Hand Wheel Type Draw-in Collet Chuck Attachment



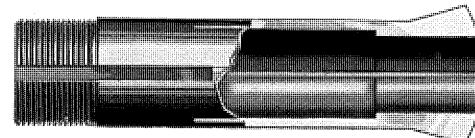
Set of Round Split Collets for Draw-in Collet Chuck Attachment

Collets for Round Work

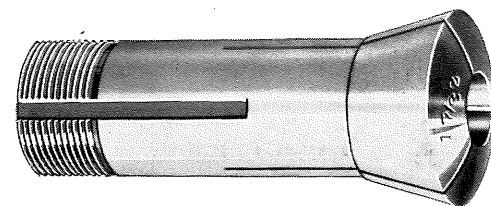
Used with Draw-in Collet Chuck Attachment

Collets for round work, illustrated at right, are for use with either the hand wheel type draw-in collet chuck attachment described above, or the hand lever type draw-in collet chuck attachment shown on page 93. Collets are made of tool steel, hardened and tempered. They are ground both outside and inside to insure accuracy.

The work held in the collet should not be more than .001 in. smaller or .001 in. larger than the collet size. If the diameter of the work varies more than this, it will impair the accuracy and efficiency of the collet. A separate collet should be used for each diameter of the work.



Cross Section View of Split Collet Showing Its Construction



Collets with Standard Hole Sizes for Round Work

Size of Lathe	Catalog No.	Hole in Spindle	Collet Capacity in Sixty-fourths	Code Word
9 in. "Workshop"	609-W	3/4 in.	1/8 in. up to 1/2 in.	Catra
9 in.	609	3/4 in.	1/8 in. up to 1/2 in.	Cabot
9 in. (1" collet lathe)	1709	1 1/8 in.	1/8 in. up to 1 in.	Cevoj
11 in.	611	1 in.	1/8 in. up to 1 1/2 in.	Cello
13 in.	613	1 1/8 in.	1/8 in. up to 1 3/4 in.	Chose
14 1/2 in.	1713	1 1/2 in.	1/8 in. up to 2 in.	Cepas
16 in.	616	1 3/4 in.	1/8 in. up to 2 1/4 in.	Clear
16-24 in.	1724	1 3/4 in.	1/8 in. up to 2 3/4 in.	Cepew

Special Collets with Metric and Decimal Hole Sizes

Collets for odd diameter round work measured in thousandths of an inch or in millimeters, also collets for diameters less than 1/8-inch and for odd diameter drills and wire gauges, can be supplied to order. See price list.

Hand Lever Type Draw-in Collet Chuck Attachment

For Rapid Production Work

The Hand Lever Type Draw-in Collet Chuck permits releasing and feeding bar stock through the collet, without stopping the lathe. The gripping action of the collet can be set to any desired tension by adjusting the cylinder of the adjustable chuck closer.

The rapid production and accuracy of the Hand Lever Draw-in Collet Chuck Attachment makes it a very economical tool for use in manufacturing small interchangeable parts requiring accuracy and precision.

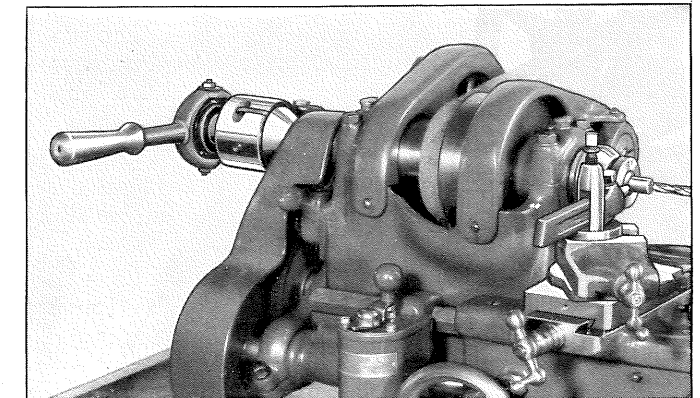
Equipment Included in Price

The price of the Hand Lever Draw-in Collet Chuck Attachment includes adjustable chuck closing mechanism and hollow draw bar, spindle nose cap, spanner wrench for nose cap, tapered steel closing sleeve, and one round split collet of any standard size. The tapered closing sleeve is made of tool steel, hardened and ground to minimize wear and to insure accuracy.

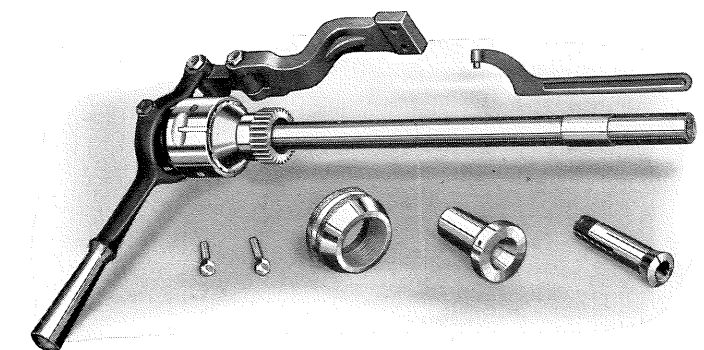
Hand Lever Draw-in Collet Chuck Attachment with One Round Split Collet*

Size of Lathe	Catalog No.	Hole in Lathe Spindle	Collet Capacity in 64ths (for Round Work)	Code Word
9 in. "Workshop"	5206-W	3/4 in.	1/8 in. up to 1/2 in.	Abpat
9 in.	5209	3/4 in.	1/8 in. up to 1/2 in.	Allen
9 in. (1" collet lathe)	3609	1 1/8 in.	1/8 in. up to 1 in.	Cimir
11 in.	5211	1 in.	1/8 in. up to 1 1/2 in.	Among
13 in.	5213	1 1/8 in.	1/8 in. up to 1 3/4 in.	Andes
14 1/2 in.	5214	1 1/2 in.	1/8 in. up to 2 in.	Ciked
16 in.	5216	1 3/4 in.	1/8 in. up to 2 1/4 in.	Aster
16-24 in.	5217	1 3/4 in.	1/8 in. up to 2 3/4 in.	Cikon

*Should be fitted at factory. For prices of extra collets see price list.



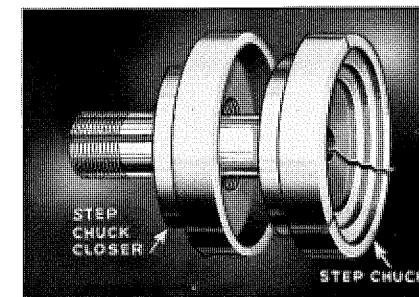
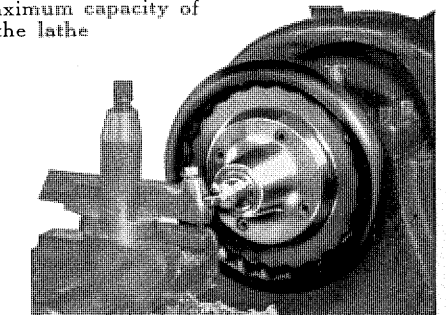
Lathe Equipped with Hand Lever Type Draw-in Collet Chuck Attachment



Hand Lever Type Draw-in Collet Chuck Attachment

Spindle Nose Collet Chuck

With this collet chuck, bar or rod work up to the maximum capacity of the hole through the lathe spindle can be machined. The chuck screws onto the spindle nose of the lathe, and collets are opened and closed by turning the hand wheel. No draw bar is required. Information and prices on request.



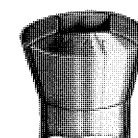
Step Chuck and Closer for Lathe

Step Chucks and Closers For Holding Discs and Gear Blanks

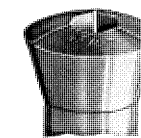
The Step Chuck and Closer are used with either the hand wheel type or the hand lever type draw-in chuck attachment for holding discs and similar round, flat work. The closer screws onto the threaded end of the lathe spindle nose and the step chuck screws into the threaded hole in the draw bar of the draw-in collet chuck attachment.

Step chucks are made to order in various sizes, having a maximum capacity of 2", 3", 4", 5" and 6" respectively. The 2" size does not require a special closer, but all other sizes must be used with a closer of corresponding diameter.

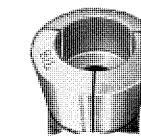
Step chucks can be supplied with steps machined to standard diameters, or with the head blank so that it can be machined by the customer. Prices on request.



Square



Hexagon



Step Collet

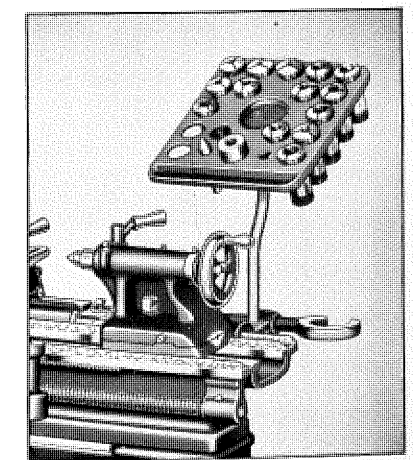
Special Collets

Special collets for holding square, round or hexagonal stock can be supplied to order.

SOUTH BEND, INDIANA, U.S.A.

Collet Rack

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



Collet Rack for Lathe

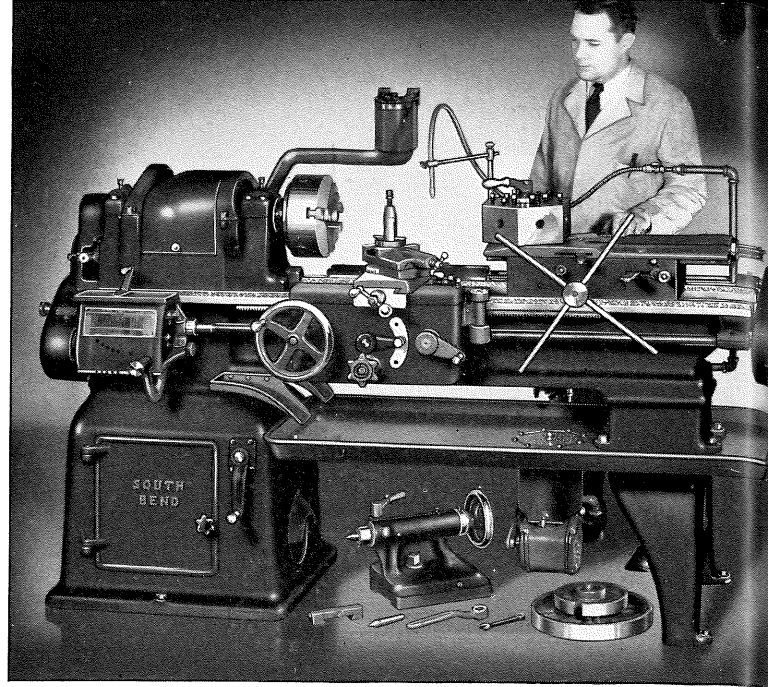
Size of Lathe	Catalog No.	Code Word
9" W.S.	1770-W	Rahah
9 in.	1770	Rabel
9 in. (1" collet lathe)	1770-L	Rahip
11 in.	1771	Rahov
13 in.	1772	Rajen
14 1/2 in.	1791	Rakaw
16 in.	1774	Rajue
16-24 in.	1792	Rakok

Chip Pans, and Oil Pans

Chip pans, and oil pans for South Bend Lathes are made of heavy gauge sheet steel with welded corners and roll rim. Pans should be specified at the time the lathe is ordered and fitted at the factory.

Chip Pans are intended for collecting chips only and are not necessarily oil tight. Chip Pans extend the full length of the lathe bed, except on Underneath Motor Driven Lathes on which they extend from headstock leg to tailstock end of bed as shown.

Oil Pans are intended for collecting both oil and chips and are oil tight. Oil Pans extend full length of the lathe bed, except on Underneath Motor Driven Floor Leg Lathes on which they extend from headstock leg to tailstock end of bed as shown. Prices of oil pans do not include oil reservoir, oil pump or piping, which are listed at bottom of page.



Chip Pans for Floor Leg Lathes

Size Lathe	Cat. No.	LENGTH OF BED										
		3'	3½'	4'	4½'	5'	5½'	6'	7'	8'	10'	12'
Countershaft Driven and Pedestal Motor Driven Lathes												
9" W.S.*	1180-W	Boten	Curad	Delar	Fikac							
9 in.	1180	Botir	Cureh	Delon	Fikeg							
11 in.	1181		Curik	Deluz	Heyix	Johit						
13 in.	1182			Delum	Heyod	Kejaj	Losag					
14½ in.	1183				Heyur	Kejuf	Losek	Memas	Nemap			
16 in.	1184					Kejob	Lotex	Memiw	Nemet	Paxer		
16-24 in.	1185					Kejar	Lotib	Memuh	Nemod	Paxoc		

Underneath Belt Motor Driven Lathes

9 in.	1987	Bizew	Cugit	Dador	Fahez							
11 in.	1988		Cugoz	Dadav	Hewas	Jodir						
13 in.	1989			Dadiz	Hewob	Keah	Lepab	Menab	Nenac			
14½ in.	1990				Hewuh	Keep	Lepif	Menop	Nenac	Pakey		
16 in.	1991					Keoov	Lepop	Menop	Nenac	Pakey		
16-24 in.	1992					Keoob	Leput	Menux	Nenik	Paikic		

Oil Pans for Floor Leg Lathes

Size Lathe	Cat. No.	LENGTH OF BED										
		3'	3½'	4'	4½'	5'	5½'	6'	7'	8'	10'	12'
Countershaft Driven and Pedestal Motor Driven Lathes												
9" W.S.*	1994-W	Bifue	Cudaw	Darec	Fimor							
9 in.	1994	Bigaw	Cudok	Darig	Fimux							
11 in.	1995		Cudem	Darom	Hinas	Johuf						
13 in.	1996			Darus	Hinew	Kowah	Lerac					
14½ in.	1997				Hinog	Kowel	Lerik	Mepac	Neyaz			
16 in.	1998					Kowip	Lerot	Mepik	Neyid	Pazes		
16-24 in.	1999					Kowub	Leruw	Mepur	Nezem	Paziw		

Underneath Belt Motor Driven Lathes

9 in.	2020	Bigok	Cugal	Dafog	Fonak							
11 in.	2021		Cugep	Dafum	Himaf	Jobep						
13 in.	2022			Dafik	Himeg	Kuear	Litaz					
14½ in.	2023				Himuz	Kueen	Lited	Mesar	Nekuh			
16 in.	2024					Kueiz	Liton	Mesiz	Nemix	Penim		
16-24 in.	2025					Kueof	Lituk	Mesok	Nerim	Penuk		

Oil Pump, Reservoir, and Piping for Countershaft and Motor Driven Lathes

The oil pump equipment described below is intended for use with South Bend Lathes equipped with oil pans as described above. The oil pump is self-priming as it is beneath the oil level.

Oil Pump Equipment for Countershaft Driven Lathes include oil pump, piping, reservoir, and a flat pulley for the countershaft to drive the oil pump. Leather belting for use between

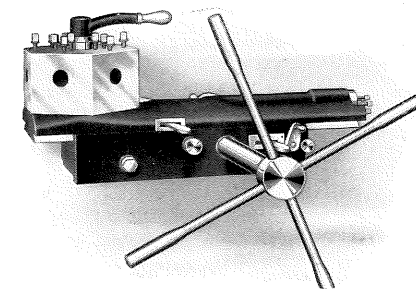
countershaft and pump is not included but can be supplied to order at extra cost.

Oil Pump Equipment for Motor Driven Lathes includes a motor driven oil pump, piping, reservoir, V-belt drive between motor and pump, ¼ H.P. motor (1 ph., 60-cy., 110-V or 220-V A.C.), and switch wired to motor.

Oil Pump, Reservoir, and Piping (Fitted to Lathe at Factory)

Size of Lathe	FLOOR LEG LATHES						BENCH LATHES					
	For Countershaft Driven Floor Leg Lathes		For Pedestal Motor Driven Floor Leg Lathes		For Underneath Motor Driven Floor Leg Lathes		For Countershaft Driven Bench Lathes		For Horizontal Motor Driven Bench Lathes		For Underneath Motor Driven Bench Lathes	
	Cat. No.	Code	Cat. No.	Code	Cat. No.	Code	Cat. No.	Code	Cat. No.	Code	Cat. No.	Code
9 in. W.S.*	1264-W	Hiwak	1664-W	Jupen	Not	Supplied	1681-W	Pihax	1854-W	Rucey	1901-W	Soxax
9 in.	1264	Hiwoy	1664	Jupir	1674	1674	1681	Pihex	1854	Rucec	1901	Soxog
11 in.	1265	Hixas	1665	Jupox	1675	1675	1682	Pihol	1855	Rucig	1902	Soxik
13 in.	1266	Hixeb	1666	Jurak	1676	1676						
14½ in.	1267	Hixol	1667	Juris	1677	1677						
16 in.	1268	Hixur	1668	Jusig	1678	1678						
16-24 in.	1269	Hiyep	1669	Jusom	1679	1679						

Production Equipment for South Bend Lathes



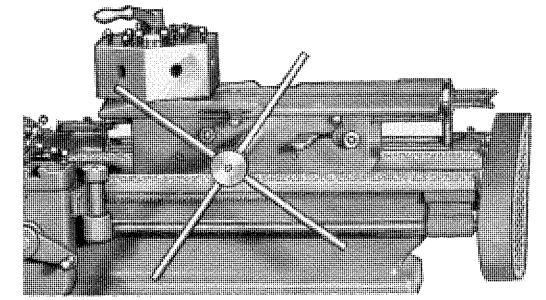
Hand Feed Bed Turret Attachment

With this turret attachment, the lathe can be used as a turret lathe or hand screw machine, with the added advantage of all engine lathe features. The turret slide feed is operated by revolving the turnstile by hand. The turret head indexes automatically one-sixth of a turn on each return stroke of the slide. Adjustable stops for each face of the turret regulate the depth of each tool operation.

Prices include fitting turret to lathe bed and finish boring the six holes in the turret head to the standard diameter. If special hole size is required, specify diameter of tool shanks when ordering.

Hand Feed Turnstile Bed Turret

Size of Lathe	Cat. No.	Standard Hole Diameter	Hole Center to Slide Top	Maximum Feed	Code Word
14½ in.	1405	1 in.	2¼ in.	9 in.	Flwow
16 in.	416	1 in.	2¼ in.	9 in.	Flowm



Power Feed Bed Turret Attachment

This turret has power longitudinal feed with an adjustable automatic release for each face of the turret head. The turret slide must be returned to the starting position by hand. The turret head automatically indexes one-sixth of a turn on each return stroke of the turret slide. The turret also has hand operated feed with individual stop for each face of the turret.

Prices include fitting turret to lathe bed and finish boring the six holes in the turret head to the standard diameter. If special hole size is required, specify diameter of tool shanks when ordering.

Power Feed Turnstile Bed Turret

Size of Lathe	Cat. No.	Standard Hole Diameter	Center of Hole to Slide Top	Maximum Feed	Code Word
14½ in.	1614	1 in.	2¼ in.	9 in.	Powam
16 in.	1616	1 in.	2¼ in.	9 in.	Poweq

Production Equipment

The illustration above shows a 16-inch South Bend Underneath Belt Motor Driven Lathe equipped with a power feed turnstile bed turret attachment, oil pan, and oil pump for production operations in the manufacturing plant. With this equipment, the production capacity of the lathe on duplicate work is greatly increased. Any size of South Bend Lathe can be supplied with similar attachments.

Chip Pans for Bench Lathes

Size Lathe	Cat. No.	LENGTH OF BED				
		3'	3½'	4'	4½'	5'
Countershaft Driven and Horizontal Motor Driven Bench Lathes						
9" W.S.*	1297-W	Boxal	Cupac	Domay		
9 in.	1297	Boxep	Cupeg	Domex	Folen	
11 in.	1298		Cupik	Domig	Jehup	Koged

Underneath Belt Motor Driven Bench Lathes

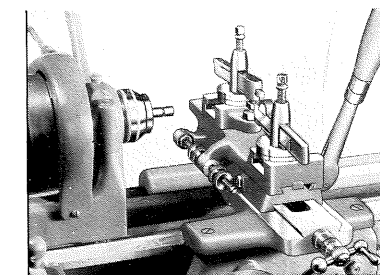
9" W.S.*	1377-W	Buyat	Cusar	Dotal		
9 in.	1377	Buyex	Cusev	Dotep	Fegos	
11 in.	1378		Cusiz	Dotuf	Jipez	Kogih

Oil Pans for Bench Lathes

Size Lathe	Cat. No.	LENGTH OF BED				
		3'	3½'	4'	4½'	5'
Countershaft Driven and Horizontal Motor Driven Bench Lathes						
9" W.S.*	1497-W	Buzag	Cunab	Dopen	Fopal	
9 in.	1497	Buzek	Cunef	Dopir	Foper	
11 in.	1498		Cunop	Dopug	Jiraw	Kohug

Underneath Belt Motor Driven Bench Lathes

9" W.S.*	1597-W	Birok	Cicez	Dosay		
9 in.	1597	Biruh	Cidow	Dosec	Potan	
11 in.	1598		Cidus	Dosig	Jitax	Kogut



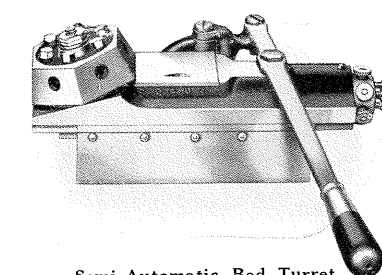
Double Tool Slide

For mounting front and back tools on lathe. May be operated by either hand lever or cross feed screw. Top slide is operated by hand lever and has adjustable stops for both front and back tools. Bottom slide is operated by cross feed screw. Prices include tool post for back tool rest. Front rest takes tool post supplied with lathe.

Double Tool Slide (Cannot be used with Taper Attachment)

Size of Lathe	Clearance Over Slide	Cat. No.	Code Word
9" W.S.	2¼ in.	738-W	Buwew
9 in.	2½ in.	744	Daple
11 in.	3½ in.	745	Debit
13 in.	4½ in.	746	Diced
14½ in.	4¾ in.	772	Dapax
16 in.	4¾ in.	748	Drain

Hand Lever Bed Turret

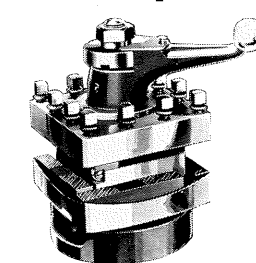


This Turret automatically indexes one-sixth of a turn by the backward movement of the hand lever. Adjustable stops are provided for each of the six faces of the turret for regulating the depth of each tool. The feed of the turret slide is controlled by the hand lever. Power feed cannot be supplied. Price includes fitting turret to lathe bed and finish boring 6 turret holes.

Semi-Automatic Bed Turret

Size of Lathe	Cat. No.	Std. Turret Hole	Length Turret Base	Max. Turret Feed	Code Word
9" W.S.	1509-W	5/8 in.	9½ in.	4¼ in.	Jarim
9 in.	1509	5/8 in.	9½ in.	4¼ in.	Jaber
11 in.	1511	5/8 in.	9½ in.	4¼ in.	Jenks
13 in.	1513	5/8 in.	9½ in.	4¼ in.	Jilts

4-Way Turret Tool Post



May Be Fitted with 4 Tool Holders

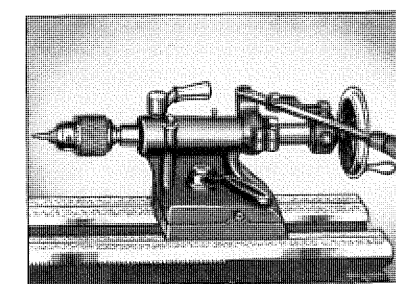
Clamps on the compound rest base of lathe in place of the regular tool post. Takes four tool holders. Turret operates easily and indexes accurately.

Price includes fitting to lathe but does not include extra tool holders.

4-Way Turret Tool Posts

Size of Lathe	Cat. No.	Size Square	Takes Tools	Code Word
9 in.	5228	4¼ in.	¾" x 1½"	Nuzog
11 in.	5229	4½ in.	¾" x 1½"	Nuzew
13 in.	5230	4½ in.	¾" x 1½"	Nudah
14½ in.	5235	5½ in.	¾" x 1½"	Nudel
16 in.	5232	5½ in.	¾" x 1½"	Nudip
16-24 in.	5236	5½ in.	¾" x 1½"	Nudub

Hand Lever Tailstock

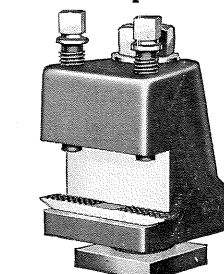


Hand Lever Tailstock in Lieu of Regular Tailstock

Practical for drilling, reaming and centering operations. Spindle may be operated by either hand lever or hand wheel.

Size Lathe	9" W.S.	9 in.	11 in.	13 in.
Length of Feed	2¾"	2½"	2½"	4¾"
Cat. No.	519-W	900	901	902
Code Word	Jibet	Jiden	Jilet	Jebet

Open Side Tool Post



The Open Side Tool Post, sometimes called "European Tool Post," is convenient for working close to the face plate or chuck. Made of malleable iron and equipped with clamping bolt, two heat-treated dog point screws, and drop forged rocker.

Open Side Tool Post

Size of Lathe	In Lieu of Regular Tool Post		In Addition to Regular Tool Post	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1276-W	Poraw	1386-W	Renaf
9 in.	1276	Porok	1386	Renot
11 in.	1277	Poruq	1387	Renuz
13 in.	1278	Posak	1388	Repek
14½ in.	1279	Posis	1391	Repag
16 in.	1280	Potax	1390	Reqic
16-24 in.	1288	Poteb	1392	Rerah

ATTACHMENTS

ATTACHMENTS

*9-inch Workshop Lathes

Attachments for South Bend Lathes

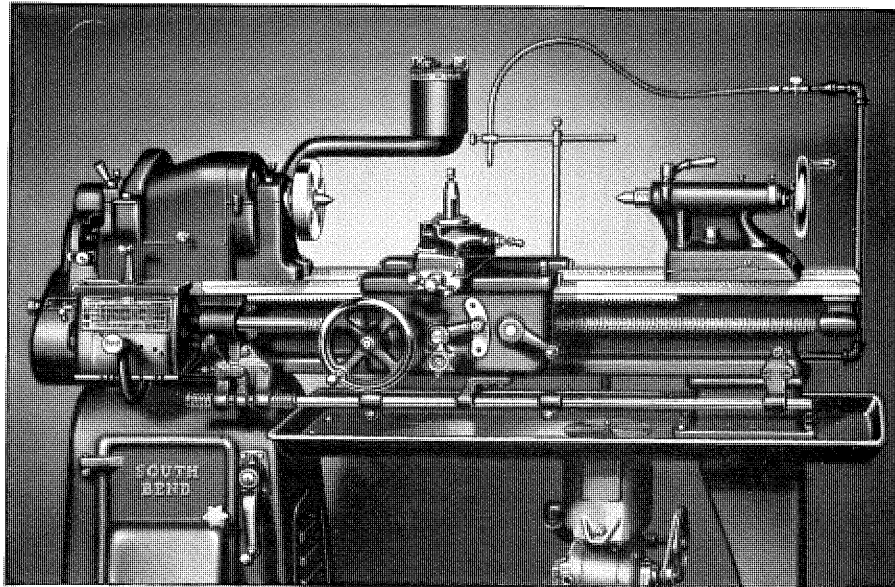
Automatic Carriage Stop

The automatic carriage stop enables the operator to place the work in the lathe, engage the power longitudinal feed for the cut, and then proceed with other work while the lathe is in operation. When the end of the cut is reached, the automatic carriage stop will automatically disengage the power longitudinal feed.

This equipment is especially desirable for use in manufacturing plants where one man may operate two or more lathes. While a piece is being machined in one lathe, the operator can remove the finished piece and insert another unfinished piece in another lathe. In this way the operator can keep two or more lathes busy most of the time and work can be done efficiently.

The stop is adjustable and may be set to disengage the power longitudinal carriage feed at any point along the entire length of the lathe bed, with the carriage feeding in either direction.

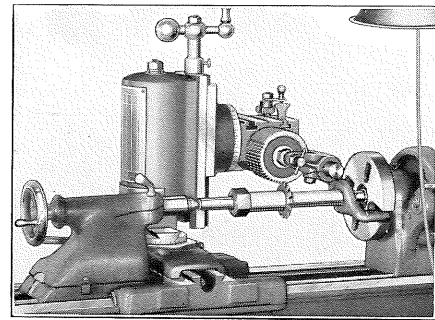
This attachment should be ordered with the lathe as it must be fitted to lathe at the factory.



Automatic Carriage Stop Fitted to 13-inch South Bend Underneath Belt Motor Driven Lathe

Automatic Carriage Stop

Size Lathe	9-in. "Workshop"	9-in.	9-in. 1" Collet	11-in.	13-in.	14½-in.	16-in.	16-24-in.
Cat. No.	1661-A	1661-L	1661-C	1661-D	1661-K	1661-F	1661-J	
Code Word	Sacac	Sacaw	Sacex	Sacib	Safel	Sacun	Safip	



Gear Cutting and Milling Attachment

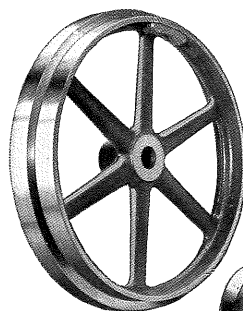
This Gear Cutting and Milling Attachment is equipped with a dividing head for cutting spur and bevel gears, also for graduating, milling splines, external key-seating, slotting and light milling operations of all kinds. An index plate shows the arrangement of change gears for divisions from 2 to 360. Table has "T"-slots for clamping small work. Holds work in any position.

Equipment included in price consists of 2 wrenches, 1 cutter arbor, 1 work arbor with draw bolt, 1 straight clamp, 1 concave clamp, 1 dog center, 1 outboard support and 1 set of 24 change gears.

Gear Cutting Attachment for South Bend Lathes

Size of Lathe	Cat. No.	Travel of Vertical Slide	Maximum Size Gear Cut		Shipping Weight	Code Word
			Diameter	Face		
9" W.S.	270-W	6½ in.	1½ in.	1½ in.	45 lbs.	Hapno
9 in.	260	6½ in.	1½ in.	1½ in.	45 lbs.	Hilol
11 in.	261	6½ in.	1½ in.	1½ in.	45 lbs.	Heles
13 in.	262	6½ in.	1½ in.	1½ in.	45 lbs.	Hamin
14½ in.	1480	7½ in.	1½ in.	1½ in.	60 lbs.	Henaw
16 in.	264	7½ in.	1½ in.	1½ in.	60 lbs.	Hetup
16-24 in.	1481	7½ in.	1½ in.	1½ in.	60 lbs.	Hentuq

Double Pulley Drive For High Spindle Speeds on Motor Driven Lathes



Two-Step Pulleys for Countershaft and Motor

Double pulleys for the motor and countershaft can be supplied to provide a series of high spindle speeds in addition to the regular spindle speeds on 9-inch and 11-inch swing South Bend motor driven lathes.

With these pulleys the lathe will have twelve spindle speeds, and the maximum speed will be approximately 1200 R.P.M. The higher speeds are practical for machining small diameter steel and iron parts, aluminum, brass, cast resin plastics, wood turning, pattern making, and other work requiring high spindle speeds.

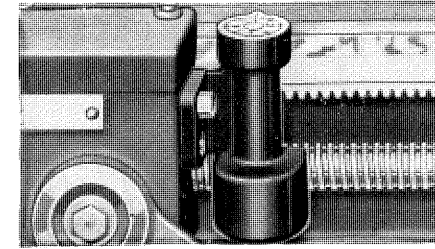
Since high spindle speeds require more power than normal speeds, a ¼ H.P. motor is not recommended for use with the double pulley drive. A ½ H.P. or larger motor (capacitor type or instant reversing type) should be used.

Double pulleys are included as regular equipment with all 9-inch 1" Collet Capacity Lathes and 9-inch "Workshop" Twelve-Speed Lathes, and can be supplied to order as listed below for other models.

Double Pulleys for Countershaft and Motor

Size Lathe	When Ordered in Lieu of Regular Pulleys				Ship. Wt. Lbs.	When Ordered as Separate Equipment			
	Motor Pulley		C'shft. Pulley			Motor Pulley		C'shft. Pulley	
	Cat. No.	Code Word	Cat. No.	Code Word		Cat. No.	Code Word	Cat. No.	Code Word
9" W.S.	158-W	Agcup	426-W	Agbun	14½	159-W	Agflp	427-W	Agdin
9"	1189	Geqak	1213	Gerol	14½	1624	Leman	1793	Lemiv
11"	1190	Geqis	1274	Gerur	14½	1625	Lemer	1794	Lenoe

Tools, Attachments and Accessories for South Bend Lathes

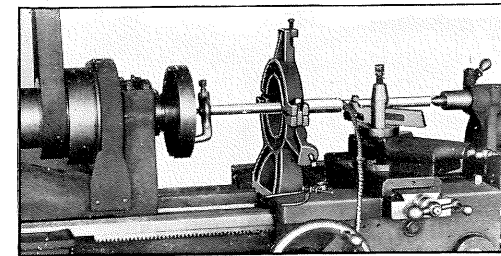


Thread Dial Indicator

This attachment eliminates the necessity of reversing the lathe to return the carriage to the starting point to catch the thread at the beginning of each successive cut that is taken. The dial is numbered and graduated to show when to close the half-nuts on the lead screw for the next cut.

Thread Dial Indicator

Size Lathe	Cat. No.	Code	Size Lathe	Cat. No.	Code
9-in. W.S.	810-W	Adnok	14½ in.	814-K	Dabaq
9 in.	809	Abaft	16 in.	816	Aflot
11 in.	811	Aeres	16-24 in.	824-H	Dabiy
13 in.	813	Advis			

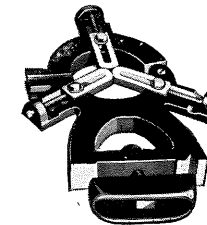


Using center rest to support long slender shaft while being machined

Center Rest

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.

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.



Center Rests

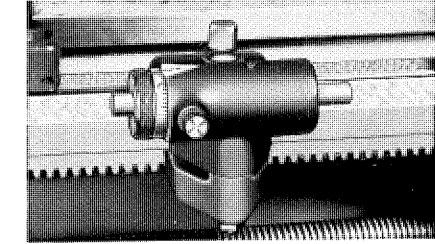
Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9-in. W.S.	125-W	3 in.	¼ in.	Cegke
9 in.	125	3 in.	¼ in.	Nygia
11 in.	303	3½ in.	¼ in.	Nygog
13 in.	341	3¾ in.	¾ in.	Nygas
14½ in.	1174	4¾ in.	¾ in.	Nuzas
16 in.	720	4¾ in.	¾ in.	Nyjou
16-24 in.	1175	4¾ in.	¾ in.	Nuzum

Center Rests for Raising Block Lathes

Center rests for lathes equipped with raising blocks (shown on page 85) are similar to the above center rests, but are fitted with a raising block to bring the center rest to the correct height.

Center Rests for Raising Block Lathes

Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9-in. W.S.	905-W	3 in.	¼ in.	Cejix
9 in.	1571	3 in.	¼ in.	Celos
11 in.	1572	3½ in.	¼ in.	Cevud
13 in.	1573	3¾ in.	¾ in.	Cewud
14½ in.	1578	4¾ in.	¾ in.	Cewaj
16 in.	1575	4¾ in.	¾ in.	Cexaw
16-24 in.	1175	4¾ in.	¾ in.	Nuzum

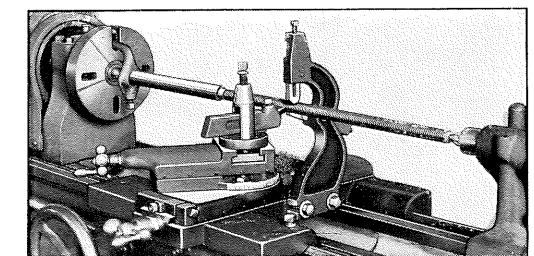


Micrometer Carriage Stop

This attachment is useful for accurate facing, turning, boring, etc. It is used for locating the carriage at any point along lathe bed. Can be used on either side of carriage. Has a micrometer adjustment. The stop is hardened on both ends and may be locked for doing duplicate work.

Micrometer Carriage Stop

Size Lathe	Cat. No.	Code	Size Lathe	Cat. No.	Code
9-in. W.S.	968-W	Capys	14½ in.	1502	Ciwot
9 in.	971	Calef	16 in.	975	Climb
11 in.	972	Ceced	16-24 in.	1503	Ciwuz
13 in.	973	Chain			

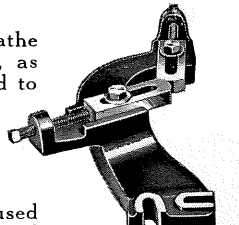


Cutting a screw thread on a long shaft with the aid of a follower rest

Follower Rest

The follower rest is attached to the lathe carriage and travels with the carriage, as shown above. The follower rest is used to support long, slender shafts while being machined between the lathe centers. Adjusting screws and lock screws are provided for setting the jaws in position.

Slots in bottom of follower rest are used for attaching follower rest to carriage, and permit attaching or removing quickly, as it is not necessary to remove the screws from the saddle.



Follower Rests

Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9-in. W.S.	34-W	2 in.	⅜ in.	Cegmo
9 in.	130	2½ in.	⅜ in.	Culve
11 in.	322	3 in.	⅜ in.	Faraj
13 in.	376	3¾ in.	⅜ in.	Fanba
14½ in.	1351	4¾ in.	⅜ in.	Felat
16 in.	730	4¾ in.	⅜ in.	Famuf
16-24 in.	1352	4¾ in.	⅜ in.	Felex

Follower Rests for Raising Block Lathes

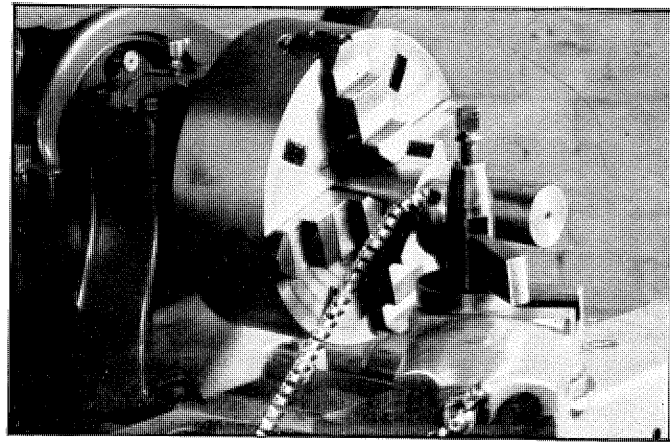
Follower rests for lathes equipped with raising blocks (shown on page 85) are similar to the above follower rests, but are fitted with a raising block to bring the follower rest to the correct height.

Follower Rests for Raising Block Lathes

Size of Lathe	Catalog Number	Maximum Capacity	Minimum Capacity	Code Word
9-in. W.S.	938-W	2 in.	⅜ in.	Bezok
9 in.	1393	2½ in.	⅜ in.	Balic
11 in.	1394	3 in.	⅜ in.	Bamul
13 in.	1395	3¾ in.	⅜ in.	Banic
14½ in.	1398	4¾ in.	⅜ in.	Baqir
16 in.	1397	4¾ in.	⅜ in.	Bapir
16-24 in.	1352	4¾ in.	⅜ in.	Felex

ATTACHMENTS

ATTACHMENTS



A chuck mounted on the spindle of the lathe

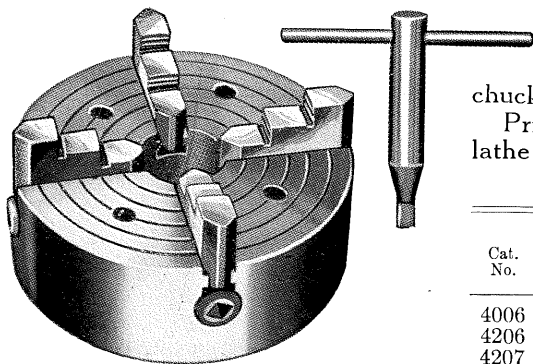
Chucks for South Bend Lathes

Selecting the Chuck for the Lathe

A 4-jaw Independent chuck is recommended if the lathe is to have but one chuck, as this type of chuck will hold square, round and irregular shapes in either a concentric or eccentric position. The jaws of the Independent chuck may be reversed so that work may be chucked either on the inside or the outside.

The 3-jaw Universal chuck is used for chucking round and hexagonal work quickly, as the jaws move simultaneously and automatically center the work. Two sets of jaws are supplied with each 3-jaw Universal chuck, one set for external chucking and one set for internal chucking.

4-Jaw Independent Lathe Chucks with Reversible Jaws Fitted With Chuck Plate Threaded for Lathe Spindle



4-jaw Independent lathe chuck with reversible jaws fitted to lathe spindle nose ready for use

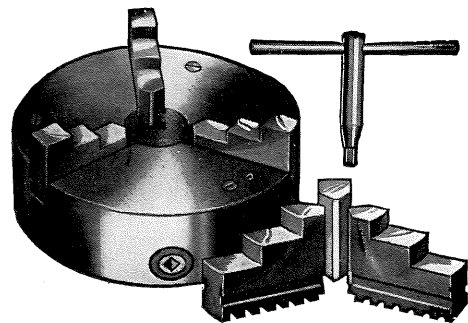
These chucks have four independent solid jaws with individual screw adjustment. The jaws may be reversed for chucking work either inside or outside. Chuck body is ground and chuck jaws are hardened and ground.

Prices include chucks, wrench, and threaded chuck plate fitted to lathe spindle and to chucks. Manufactured in the United States.

4-Jaw Independent Lathe Chucks—Fitted to Lathe Spindle

Cat. No.	Size of Chuck	Approx. Ship. Weight Pounds	9-inch "Workshop"	9-inch Lathes	9-inch 1" Collet Lathes	11-inch Lathes	13-inch Lathes	14½-inch Lathes	16-inch Lathes	16-24-inch Lathes
4006	6"	13	Fabew	Fabog	.....	.....	.....	.....	.....	.....
4206	6"	18	.....	Fakis	Ciroc	Feney	Fajub	.....	.....	.....
4207	7½"	37	.....	.....	.....	Cawer	Cawoc	Celaq	.....	.....
4209	9"	50	.....	.....	.....	.....	Cayes	Celiy	Cocet	Cenar
4210	10"	60	.....	.....	.....	.....	.....	Celuk	Cocuj	Cenev
4212	12"	80	.....	.....	.....	.....	.....	Cenul	Codik	Cenof

3-Jaw Universal Lathe Chucks with Two Sets of Jaws Fitted With Chuck Plate Threaded for Lathe Spindle



3-jaw Universal lathe chuck with two sets of jaws fitted to lathe spindle nose ready for use

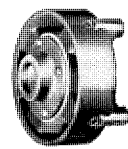
Chuck jaws are moved simultaneously by a scroll, and work is automatically centered. Two sets of jaws furnished, one set for chucking internally and the other for chucking externally. Chuck body is ground and jaws are hardened. Prices include chucks with two sets of jaws, wrench and threaded chuck plate fitted to lathe spindle. Made in the United States.

3-Jaw Universal Lathe Chucks—Fitted to Lathe Spindle

Cat. No.	Size of Chuck	Approx. Ship. Weight Pounds	9-inch "Workshop"	9-inch Lathes	9-inch 1" Collet Lathes	11-inch Lathes	13-inch Lathes	14½-inch Lathes	16-inch Lathes	16-24-inch Lathes
3005	5"	12½	Faput	Fiwem	.....	.....	.....	.....	.....	.....
3505	5"	16	.....	Fiwuc	Citaq	Fobim	Fomol	.....	.....	.....
3506	6"	22	.....	.....	Cebep	Fomif	Bafuk	Bosaw	.....	.....
3507	7½"	37	.....	.....	.....	.....	Baguy	Bosok	Balat	Baqaj
3509	9"	64	.....	.....	.....	.....	.....	Bosuj	Bapoj	Baqen

Chucks Fitted to Lathe at Factory

The illustration at the right shows a chuck that has been fitted with a threaded chuck plate to fit the spindle nose of the lathe. This chuck plate is carefully fitted to the back of the chuck so that the chuck will run true when mounted on the lathe spindle.



Chuck with Chuck-Back Attached

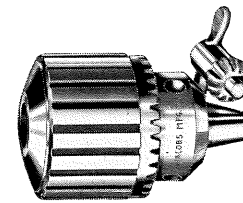
Threaded Chuck Plates

Threaded chuck plates fitted to spindle nose of lathe are supplied for those who wish to fit their own chucks to South Bend Lathes. When ordering threaded chuck plates specify size and serial number of lathe and diameter of recess in back of chuck.

Size Lathe	9-inch "Workshop"	9-inch	9-inch 1" collet	11 inch	13 inch	14½ inch	16 inch	16-24-inch
Catalog No.	126-W	1935	1935-L	1936	1937	1946	1939	1947
Code Word	Somak	Soneb	Solok	Sonol	Sonur	Sonax	Sopig	Sopom

Drill Chucks for South Bend Lathes

Jacobs Three-Jaw Drill Chuck



Jacobs Three-Jaw Drill Chuck

This Chuck is practical for general drilling work in the lathe. The jaws are of tempered steel and are operated by a heavy screw. The geared sleeve and key assure a powerful grip. Price and weight include pinion key, but not arbors, which are listed below.

Cat. No.	Capacity	Diam.	Length	Net Wt.	Ship. Wt.	Code
1200	0 to ¾ in.	1¾ in.	2¼ in.	1½ lbs.	1½ lbs.	Cleve
1201	0 to ½ in.	2 in.	2½ in.	1¾ lbs.	2½ lbs.	Wauko
1202	¾ to 1 in.	2½ in.	3 in.	3½ lbs.	3½ lbs.	Faloo
1206	¾ to 1 in.	3 in.	5 in.	6½ lbs.	7½ lbs.	Faped

Arbors for Fitting Drill Chucks



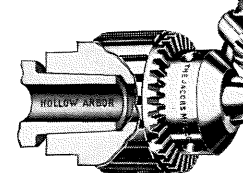
Solid Arbor for Fitting Drill Chuck to Lathe

Solid Arbors are used for fitting drill chucks to lathe. When ordering drill chuck arbor only, state size and make of drill chuck, diameter and depth of arbor socket and size of lathe on which the chuck is to be used so that we can supply the correct size arbor.

Arbors for Fitting Drill Chucks

Size Lathe	Morse Taper	Cat. No.	Net Wt.	Ship. Wt.	Code
9" Workshop	No. 2	709-W	½ lb.	¾ lb.	Achuk
9-in.	No. 2	709	½ lb.	¾ lb.	Abner
11-in.	No. 2	707	½ lb.	¾ lb.	Aerom
13, 14½-in.	No. 3	713	¾ lb.	1 lb.	Adams
16, 16-24-in.	No. 3	716	¾ lb.	1 lb.	Agate

Jacobs Hollow Arbor Chuck

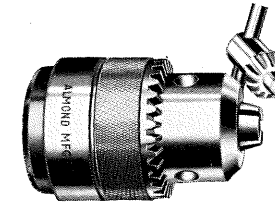


This is an ideal chuck for holding small rods and bar work for machining in the lathe. It is also practical for holding all kinds of engine valves, centered and centerless, for refacing in the lathe. Price and weight include pinion key and hollow steel arbor (No. 3 Morse Taper).

Hollow Arbor Chuck with No. 3 Morse Taper Hollow Arbor

Cat. No.	Size Lathe	Capacity	Net Wt.	Ship. Wt.	Code
645	9" 13" 14½" 16" 16-24"	¼" to 5/8"	2½ lbs.	3¼ lbs.	Ceroh
646	9" 13" 14½" 16" 16-24"	¼" to ¾"	4½ lbs.	5¼ lbs.	Cerun

Almond Three-Jaw Drill Chuck



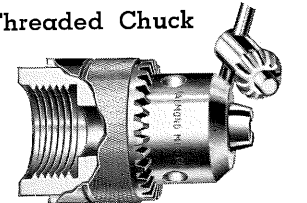
Almond Three-Jaw Drill Chuck

This Chuck is practical, powerful, well-balanced and accurate for all drilling work in the lathe. The jaws are of tempered steel and are operated by a heavy screw. Price and weight include pinion key, but not arbors which are listed below.

Cat. No.	Capacity	Diam.	Length	Net Wt.	Ship. Wt.	Code
219	0 to ¾ in.	1½ in.	2¼ in.	1¾ lbs.	1¾ lbs.	Acpen
220	0 to ½ in.	2 in.	2½ in.	1¾ lbs.	2½ lbs.	Acqip
327	¾ to 1 in.	2½ in.	3 in.	3½ lbs.	3½ lbs.	Rulid
328	¾ to 1 in.	3 in.	4 in.	5½ lbs.	6½ lbs.	Rulof

Almond Hollow Threaded Chuck

Chuck screws on spindle nose of lathe and has hollow body for holding automobile engine valves for refacing. Also used for holding small rods, bars and tubes for machining. 5/8-inch chuck can be used in tailstock of lathe when fitted with solid arbor listed at left. Price includes pinion key.

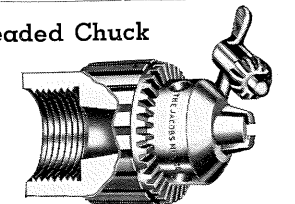


Almond Hollow Threaded Chuck

Cat. No.	Size Lathe	Capacity	Net Wt.	Ship. Wt.	Code
1153-W	9" Workshop	¼" to 5/8"	3½ lbs.	3¾ lbs.	Hawas
1153	*9-in.	¼" to 5/8"	3½ lbs.	3¾ lbs.	Hawew
1157	*9-in.	¼" to 3/4"	3½ lbs.	4¼ lbs.	Hemen
1158	11-in.	¼" to 3/4"	3½ lbs.	4¼ lbs.	Hemox

Jacobs Hollow Threaded Chuck

Chuck screws on spindle nose of lathe, and has hollow body for holding small automobile engine valves for refacing. Also used for holding small rods, bars and tubes for machining. 5/8-inch chuck can be used in tailstock of lathe when fitted with solid arbor listed above, at left. Price includes pinion key.



Jacobs Hollow Threaded Chuck

Cat. No.	Size Lathe	Capacity	Net Wt.	Ship. Wt.	Code
907-W	9" Workshop	¼" to 5/8"	3½ lbs.	3¾ lbs.	Robal
907-L	*9-in.	¼" to 5/8"	3½ lbs.	3¾ lbs.	Robet
925-A	*9-in.	¼" to 3/4"	3½ lbs.	4¼ lbs.	Rumeh
925-B	11-in.	¼" to 3/4"	3½ lbs.	4¼ lbs.	Rodpe

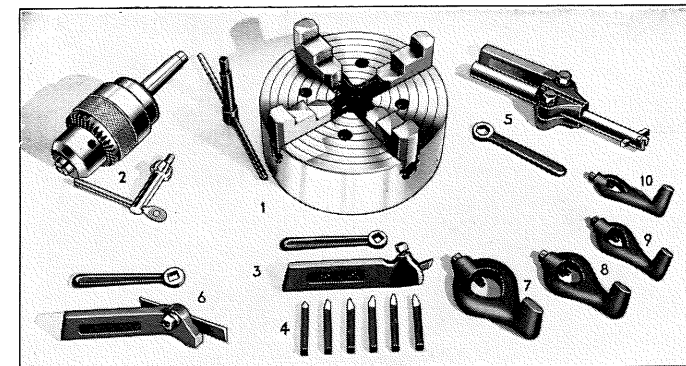
*For 9-inch 1" Collet Lathe use Hollow Arbor Chuck at left.

Chuck and Tool Assortments

For South Bend Lathes

The chuck and tools shown in the assortment at left and listed below are recommended for use in the various sizes of South Bend Lathes. This is the basic equipment required for the average shop for handling general machine work, such as turning, boring, drilling, cutting-off, chucking, etc.

The 4-jaw Independent lathe chuck is listed in each assortment because this chuck will handle round, square and irregular shaped work. However, if a 3-jaw Universal chuck is wanted instead it can be furnished at additional cost.



Assortment for Each Size Lathe... 9" Workshop 9-inch 9-inch 1" Collet Lathe 11-inch 13-inch 14½-inch 16-inch 16-24-inch

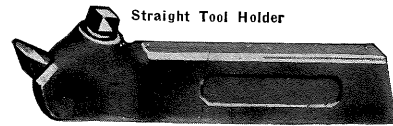
4-Jaw Independent Lathe Chuck fitted to lathe ready for use, size....	Fabew 6 in.	Fabog 6 in.	Ciroc 6 in.	Feney 7½ in.	Cawoc 9 in.	Celiy 10 in.	Cocuj 10 in.	Cenev 10 in.
3-Jaw Drill Chuck.....	Acqip 6 in.	Acqip 6 in.	Acqip 6 in.	Acqip 7½ in.	Rulid 9 in.	Rulid 10 in.	Rulof 10 in.	Rulof 10 in.
Capacity of Drill Chuck.....	½ in.	½ in.	½ in.	½ in.	¾ in.	¾ in.	¾ in.	¾ in.
Arbor Fitted to Above Drill Chuck....	Achuk ½ in.	Abner ½ in.	Abner ½ in.	Aerom ½ in.	Axcol ¾ in.	Adams ¾ in.	Agate ¾ in.	Agate ¾ in.
Straight Shank Tool Holders.....	Acump ½ in.	Azamn ½ in.	Azamn ½ in.	Aybnm ½ in.	Axcol ¾ in.	Axcol ¾ in.	Awdpk ¾ in.	Awdpk ¾ in.
Six Ground Cutters for Tool Holders....	Adwos ½ in.	Ciqac ½ in.	Ciqac ½ in.	Ciqac ½ in.	Ciqik ¾ in.	Ciqik ¾ in.	Cirix ¾ in.	Cirix ¾ in.
Boring Tool Holder, Style "D".....	Adyot ½ in.	Adyot ½ in.	Adyot ½ in.	Adyot ½ in.	Hbaet ¾ in.	Hcoil ¾ in.	Hcoil ¾ in.	Hcoil ¾ in.
Boring Tool Holder, Style "B".....	.....	Habor ¾ in.	Habor ¾ in.	Habor ¾ in.	Cheld ¾ in.	Cheld ¾ in.	Cheld ¾ in.	Cheld ¾ in.
Cutting-Off Tool Holder.....	Cemso ¾ in.	Cemso ¾ in.	Cemso ¾ in.	Cemso ¾ in.	.....	.....	.....	.....
Four Malleable Lathe Dogs.....	(sizes.....)	(sizes.....)	(sizes.....)	(sizes.....)	(sizes.....)	(sizes.....)	(sizes.....)	(sizes.....)

Catalog No., Assortment Complete.....	105-WT	109-T	109-L	111-T	113-T	116-T	124-T
Code Word, Assortment Complete.....	Dakem	Ducak	Dulop	Dufec	Dufus	Dugeq	Dukob

SOUTH BEND, INDIANA, U.S.A.

Tool Holders and Boring Tools for South Bend Lathes

Lathe Tool Holders



Straight Tool Holder



Right Hand Tool Holder



Left Hand Tool Holder

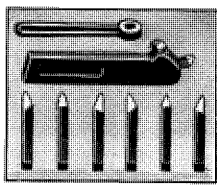
Tool Holder—Straight Shank

Prices include one drop forged, heat-treated and hardened steel tool holder (choice of straight, right-hand or left-hand shank) with hardened steel set screw, a hardened drop forged steel wrench and one unground high speed steel cutter bit, complete for the lathe.

Size of Lathe, Inches	Size of Shank, Inches	Size of Cutter, Inches	Straight	Right Hand	Left Hand
9" W.S.*	3/8 x 3/8	1/2 x 1/2	Cat. No. 847-R	847-R	847-L
9	3/8 x 3/8	1/2 x 1/2	Code... Acump	Acut	Acvet
11	3/8 x 3/8	1/2 x 1/2	Cat. No. 849-S	849-R	849-L
11	3/8 x 3/8	1/2 x 1/2	Code... Azamm	Apkwd	Aufri
13, 14 1/2	1/2 x 1/2	3/8 x 3/8	Cat. No. 851-S	851-R	851-L
13, 14 1/2	1/2 x 1/2	3/8 x 3/8	Code... Aybnn	Aolke	Atgsh
16, 16-24	3/4 x 3/4	1/2 x 1/2	Cat. No. 852-S	852-R	852-L
16, 16-24	3/4 x 3/4	1/2 x 1/2	Code... Axool	Anmyb	Ashtg
			Cat. No. 853-S	853-R	853-L
			Code... Awdnc	Anmzn	Arvuf

Tool Holder and Cutter Bit Set

Set consists of tool holder (choice of straight, right-hand or left-hand) with one unground H. S. Steel Cutter Bit and a set of 6 H. S. Steel Cutter Bits ground to forms A to F shown at right.



Size Lathe	9" W.S.*	9"	11"	13"	16"
Cat. No. . . .	323-A	603-B	603-C	603-D	603-E
Code Word . .	Actit	Cisux	Cituk	Civev	Civiz

Cutting-Off Tool Holders



Straight



Right-Hand



Left-Hand

Cutters are beveled on both sides and are held at an angle giving the side clearance and top rake required. Prices include forged steel cutting-off tool holder, wrench and one high speed cutter blade ground.

Size of Lathe, Inches	Size of Shank, Inches	Size of Cutter, Inches	Straight	Right	Left
9" W.S.*	3/8 x 3/8	3/8 x 1/2	Cat. No. 833-S	833-R	833-L
9	3/8 x 3/8	3/8 x 1/2	Code... Adeat	Censo	.....
11	3/8 x 3/8	3/8 x 1/2	Cat. No. 881-S	881-R	881-L
11	3/8 x 3/8	3/8 x 1/2	Code... Agone	Chvhl	Amary
13, 14 1/2	1/2 x 1/2	3/8 x 3/8	Cat. No. 882-S	882-R	882-L
13, 14 1/2	1/2 x 1/2	3/8 x 3/8	Code... Ahern	Cinom	Aenin
16, 16-24	3/4 x 3/4	1/2 x 1/2	Cat. No. 883-S	883-R	883-L
16, 16-24	3/4 x 3/4	1/2 x 1/2	Code... Ajame	Clain	Alrok
			Cat. No. 884-S	884-R	884-L
			Code... Akrit	Cmoit	Alezo

NOTE: 9" W.S. listed in the tabulations above is an abbreviation of 9-inch "Workshop" Lathes

Unground Cutter Bits



These cutter bits are the same quality as those listed below but they are not ground. They are heat-treated and hardened and are ready for use when sharpened. Specify catalog number and size when ordering cutter bits.

Unground High-Speed Steel Cutter Bits

Size of Lathe, Inches	Size, Square Inches	Length, Inches	Single Bit	Set of 6 Bits
9" W.S.*	1/4	2	1460 Adwir	1629 Cixas
9	1/4	2	1419 Atroc	1630 Civoz
11	1/4	2	1421 Auyeg	1631 Cixum
13, 14 1/2	3/8	2 1/2	1422 Avzdh	1632 Civoz
16, 16-24	3/8	3	1423 Awael	1633 Ciwar

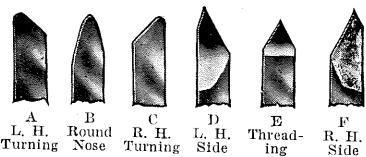
High Speed Steel Cutter Bits Ground to Shape—Ready to Use



These cutter bits are for use with the tool holders listed above. They are made of best quality high speed steel (Rex AA, or Red Cut Superior) and are heat-treated and hardened. We use the same quality of cutter bits in our own shops and recommend them very highly.

The illustration below shows six cutter bits ground to the shapes that are most practical for general work. When ordering, be sure to specify the catalog numbers and the letters designating shapes of cutter bits wanted.

Ground High Speed Steel Cutter Bits



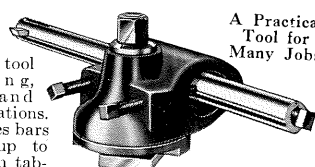
Ground High Speed Steel Cutter Bits

Size of Lathe, Inches	Size, Square Inches	Length, Inches	Single Bit	Set of 6 Bits
9" W.S.*	1/4	2	1355 Adwap	291 Advos
9	1/4	2	1304 Athen	1775 Ciqac
11	1/4	2	1311 Akosw	1776 Ciqac
13, 14 1/2	3/8	2 1/2	1313 Aiptx	1777 Ciqik
16, 16-24	3/8	3	1316 Amqur	1778 Cirix

Heavy Duty Boring and Turning Tool

This is a very rigid combination tool for boring, turning and facing operations. Holder takes bars from 3/8" up to size listed in tabulation. Tool may be swiveled to any angle and holder may be reversed for turning extra large diameters. Bar may be turned in holder to adjust angle of cutter bit and height of cutting edge.

Provides rigid support for the cutter bit and is a practical tool as it may be used for many unusual jobs.

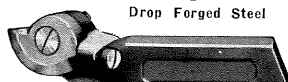


A Practical Tool for Many Jobs

Heavy Duty Boring and Turning Tool

Size of Lathe, Inches	Tool Complete	Holder Only	Bar Only
9" W.S.*	169W 3/8x14	3677W Bahen	2119W Kaday
9	169 3/8x14	3677 Hamed	2119 Kadus
11	170 1/2x15	3678 Baher	2120 Kafaz
13	171 1/2x18	3679 Bahov	2121 Kafed
14 1/2	172 1/2x20	3680 Bahoc	2122 Kafed
16, 16-24	173 1/2x20	3681 Bahoz	2123 Kafih

Threading Tool Holder



Drop Forged Steel Cutter requires grinding on top edge only to sharpen. Prices include threading tool, wrench and a high speed steel single point cutter (choice of V. U.S.S. or Whitworth Standard). Sharp V. Cutter is furnished unless otherwise ordered. Specify pitch or number threads per inch required.

Size of Lathe, Inches	Threading Tool Complete			Extra Cutters (H. S. Steel)	
	Cat. No.	Size of Shank, Inches	Code Word	Cat. No.	Code Word
9" W.S.*	845	3/8 x 3/8	Adfob	814	Adurp
9	865	3/8 x 3/8	Afret	860	Apjex
11	866	3/8 x 3/8	Aeshs	861	Ajxw
13, 14 1/2	867	1/2 x 1/2	Adtir	892	Airdw
16, 16-24	868	3/8 x 1/2	Acujq	863	Ahgev

Knurling Tool Holder



Drop Forged Steel Prices include knurling tool holder and one set of medium knurls made of tool steel, tempered.

Size of Lathe, Inches	Knurling Tool Complete			Extra Knurls	
	Cat. No.	Size of Shank, Inches	Code Word	Cat. No.	Code Word
9" W.S.*	820	3/8 x 3/8	Domta	817	Digma
9	891	3/8 x 3/8	Dgelt	886	Dacos
11	892	3/8 x 3/8	Dhapo	887	Dbort
13, 14 1/2	893	1/2 x 1/2	Dilge	888	Deram
16, 16-24	894	3/8 x 1/2	Djoma	889	Demon

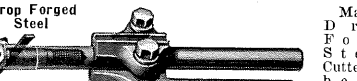
Style "D" Boring Tool Holder



Drop Forged Steel For boring work of small internal diameter, and for threading, turning, etc. Prices include boring tool holder, one boring bar and wrench. Will take the following sizes of boring bars: 9" Lathes, 1/8" to 1/2"; 11" Lathes, 1/4" to 5/8"; 13" and 14 1/2" Lathes, 1/4" to 3/4"; 16" and 16-24" Lathes, 3/8" to 1".

Size of Lathe, Inches	Tool Complete			Extra Boring Bars	
	Cat. No.	Size of Shank, Inches	Code Word	No.	Code Word
9" W.S.*	505-F	3/8 x 3/8	Adyot	3856-F	1/2x4 Buroq
9	505-A	3/8 x 3/8	Adyot	3856-F	1/2x1 1/2 Busaq
11	505-B	3/8 x 3/8	Adyot	3856-B	1/2x2 Deboy
13, 14 1/2	505-C	1/2 x 1/2	Adyot	3856-C	1/2x7 Bedit
16, 16-24	505-D	3/8 x 1/2	Adyot	3856-D	1/2x8 Bedok

Style "B" Boring Tool Holder



Drop Forged Steel Made of Drop Forged Steel. Cutter can be set either straight or at a 45-degree angle. Prices include holder, sleeve bar, end cap, two wrenches and two unground cutter bits.

Size of Lathe, Inches	Tool Complete			Extra Cutter Bits	
	Cat. No.	Size of Shank, Inches	Code Word	Cat. No.	Code Word
9" W.S.*	423	3/8 x 3/8	Hayun	454-W	Hopoc
9	429	3/8 x 3/8	Habor	454	Hadie
11	430	3/8 x 3/8	Hbaet	455	Hboya
13, 14 1/2	431	1/2 x 1/2	Hhoil	456	Hhino
16, 16-24	432	3/8 x 1/2	Hhual	457	Hhazt

Combination Center Drill & Countersink

For drilling center hole and countersinking 60° angle for lathe center. Made of carbon tool steel, hardened and ground.

Diam. of Work	Combination Center Drill and Countersink		Single Drill	
	Diam. of Drill	Diam. of Body	Cat. No.	Code Word
3/8 to 3/4 in.	3/8 in.	3/8 in.	898-A	Xmeib
3/4 to 1 in.	3/4 in.	3/4 in.	898-B	Xnrie
1 1/4 to 2 in.	1 1/4 in.	1 1/4 in.	898-C	Xoskd
2 1/4 to 4 in.	2 1/4 in.	2 1/4 in.	898-D	Xpoez

Lathe Dogs, Centers and Accessories for South Bend Lathes

60° Head Spindle Lathe Center



Head Spindle Lathe Center

Size Lathe, Inches	9" W.S.*	9 in.	11 in.	13 in.	14 1/2 in.	16 in.	16-24"
Cat. No.	725-W	725-A	725-B	725-C	725-K	725-F	725-J
Code Word	Adgud	Hhexf	Hhexl	Hhexp	Hexux	Heyap	Heyet

60° Tail Spindle Lathe Center



Tail Spindle Lathe Center

Size Lathe, Inches	9" W.S.*	9 in.	11 in.	13 in.	14 1/2 in.	16 in.	16-24"
Cat. No.	726-W	726-A	726-B	726-C	726-K	726-E	726-J
Code Word	Centre	Caten	Celta	Cheat	Cepog	Clase	Cepum

Above—Standard Lathe Dog

Right—Safety Lathe Dog

Standard and Safety Lathe Dogs

Made of heavy malleable iron and are properly designed for strength and service. The Standard Dog has square head alloy steel set screw. The Safety Dog has a headless alloy steel set screw and wrench.

Heavy Type Lathe Dogs

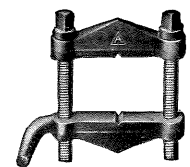
For 11-inch to 16-24-inch Swing Lathes

Capacity of Lathe Dog	Standard Lathe Dogs		Safety Lathe Dogs	
	Cat. No.	Code Word	Cat. No.	Code Word
3/8 in.	1-M	Holal	1-MH	Kelg
1/2 in.	2-M	Holep	2-MH	Kelom
3/4 in.	4-M	Holit	4-MH	Kelus
1 in.	6-M	Holoz	6-MH	Kemam
1 1/4 in.	8-M	Hohf	8-MH	Kemug
1 1/2 in.	10-M	Homaz	10-MH	Kenaz
1 3/4 in.	11-M	Homih	11-MH	Kened
2 in.	12-M	Homon	12-MH	Kenih
2 1/2 in.	14-M	Homut	14-MH	Kenom
3 in.	15-M	Honam	15-MH	Kenut
3 1/2 in.	16-M	Honeq	16-MH	Keqes
4 in.	17-M	Honig	17-MH	Keqiw

Light Pattern Lathe Dogs

For 9-inch and 11-inch Swing Lathes Only

Capacity of Lathe Dog	Cat. No.	Code Word	Cat. No.	Code Word
3/8 in.	1-MJ	Kanuk	1-JH	Tacyv
1/2 in.	2-MJ	Kanad	2-JH	Tacle
3/4 in.	4-MJ	Kaneh	4-JH	Tadah
1 in.	6-MJ	Kanil	6-JH	Tadip
1 1/4 in.	8-MJ	Kanar	8-JH	Tebac
1 1/2 in.	10-MJ	Kanix	10-JH	Tebez



Clamp Lathe Dogs

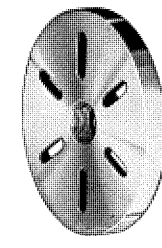
Made of heavy drop forged steel, carefully machined and hardened. Practical for holding round, hexagonal or rectangular work. Each lathe dog is boxed separately.

Capacity Between Screws	Clamp Dog	
	Cat. No.	Code Word
1 1/2 in.	160	Laqat
2 1/4 in.	161	Laqib
3 in.	162	Laqoh
3 1/2 in.	163	Laqun

*NOTE: 9" W.S. listed in the tabulations above is an abbreviation covering 9-inch "Workshop" Lathes.

Large Face Plate

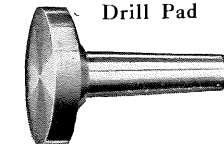
The large face plate is threaded to fit the spindle nose of the lathe, has slots for clamping work or special face plate fixtures. It is heavily constructed and is ribbed on the back. May be used for general tool work and machine shop work.



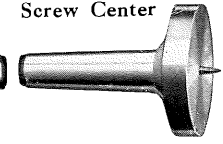
Cat. No. 40-W. Face Plate for 9" Workshop lathe. Outside diameter 7 3/8". Code Word, "Cehak."

SOUTH BEND, INDIANA, U.S.A.

Drill Pad



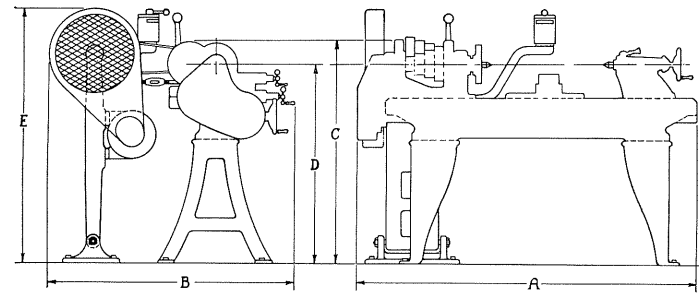
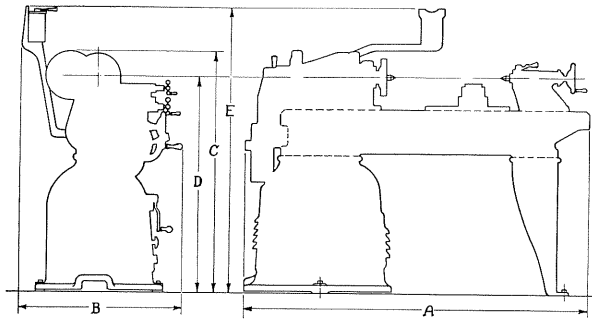
Screw Center



Size of Lathe	Cat. No.	Code Word	Size of Lathe	Cat. No.	Code Word
9" W.S.*	727-W	Donav	9" W.S.*	731-W	Kalaf
9 in.	727-A	Dabed	9 in.	731-A	Kabar
11 in.	727-B	Dahat	11 in.	731-B	Kelso
13 in.	727-C	Dahex	13 in.	731-C	Kinty
14 1/2 in.	727-K	Dadcm	14 1/2 in.	731-K	Kelch
16 in.	727-P				

Floor Space Required for All Size South Bend Lathes

Dimensions A to G given in tables below are in inches

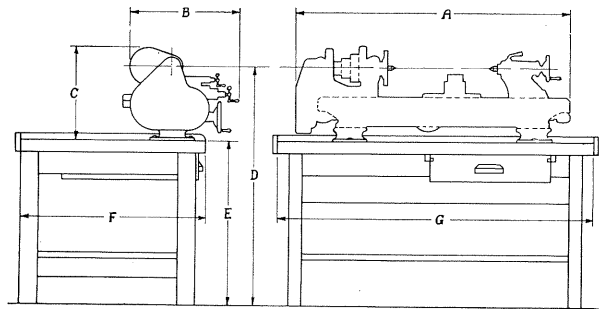


Underneath Motor Driven Lathes

Size Lathe	Bed Length	A	B	C	D	E
9"-W	3'	41 1/2	23 1/2	44 3/8	41	53 3/8
9"	3'	54 3/8	26 3/4	44 3/8	41	52 1/2
11"	4'	66 3/8	27 3/4	45 3/4	41 1/2	53 3/8
13"	5'	80 1/2	29 3/8	46 3/8	41 1/2	53 3/8
14 1/2"	6'	105	29 3/8	46 3/8	42 1/8	53 3/4
16"	8'	105	29 3/8	51 1/2	46 3/4	59 3/4

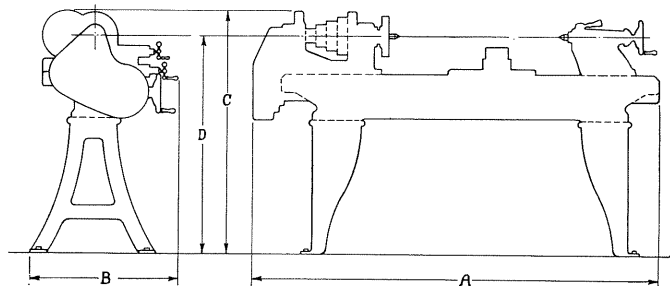
Pedestal Motor Driven Lathes

Size Lathe	Bed Length	A	B	C	D	E
9"-W	3'	39 3/8	37	44 5/8	41 1/2	49
9"	3'	40 3/8	38	44 5/8	41	49
11"	4'	52 1/4	43 3/8	42 3/8	41	49
13"	5'	64 1/4	42 3/8	45 1/2	41 1/2	49 3/8
14 1/2"	6'	77 3/8	49	46 1/8	41 1/2	53
16"	8'	101 3/8	51 3/8	46 3/8	42 1/2	53
16"-24"	8'	101 3/8	51 3/8	47 3/4	46 3/4	53



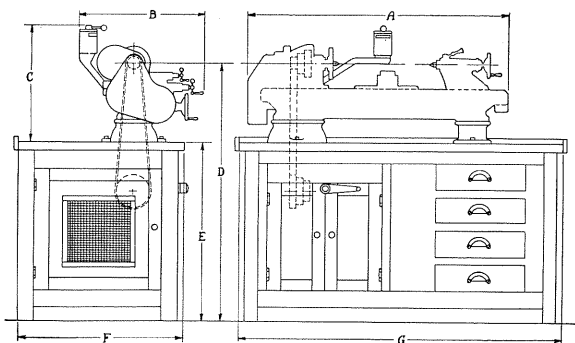
Countershaft Driven Bench Lathes

Size Lathe	Bed Length	A	B	C	D	E	F	G
9"-W	3'	39 3/8	16 1/4	14 1/8	42 3/8	30 1/2	28	54
9"	3'	40 3/8	17 1/2	17	41 1/4	27 3/8	32	54
11"	4'	52 1/4	20 3/8	19 1/2	41 1/4	25 1/4	32	60



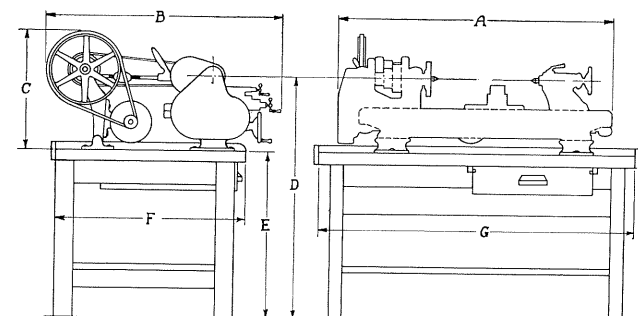
Countershaft Driven Lathes

Size Lathe	Bed Length	A	B	C	D
9"-W	3'	39 3/8	18 1/2	44 3/8	41 1/2
9"	3'	40 3/8	20 3/4	44 3/8	41
11"	4'	52 1/4	22 1/2	44 3/8	41
13"	5'	64 1/4	25 1/8	45 1/2	41 1/2
14 1/2"	6'	77 3/8	28 1/4	46 1/8	41 1/2
16"	8'	101 3/8	27 1/4	46 3/8	42 1/2
16"-24"	8'	101 3/8	27 1/4	47 3/4	46 3/4



Underneath Motor Driven Bench Lathes

Size Lathe	Bed Length	A	B	C	D	E	F	G
9"-W	3'	39 3/8	16 1/4	42 3/8	30 1/2	28	54	
9"	3'	40 3/8	23 3/8	41 1/4	27 3/8	32	60	
11"	4'	52 1/4	26 3/4	41 1/4	25 1/4	32	60	



Horizontal Motor Driven Bench Lathes

Size Lathe	Bed Length	A	B	C	D	E	F	G
9"-W	3'	39 3/8	31 3/8	18 3/8	42 3/8	30 1/2	28	54
9"	3'	40 3/8	35 1/4	19 1/2	41 1/4	27 3/8	32	60
11"	4'	52 1/4	41 1/8	22 1/4	41 1/4	25 1/4	32	60

Steel Bench for 9-inch Underneath Motor Driven Bench Lathes

Has Built-in Chip Pan

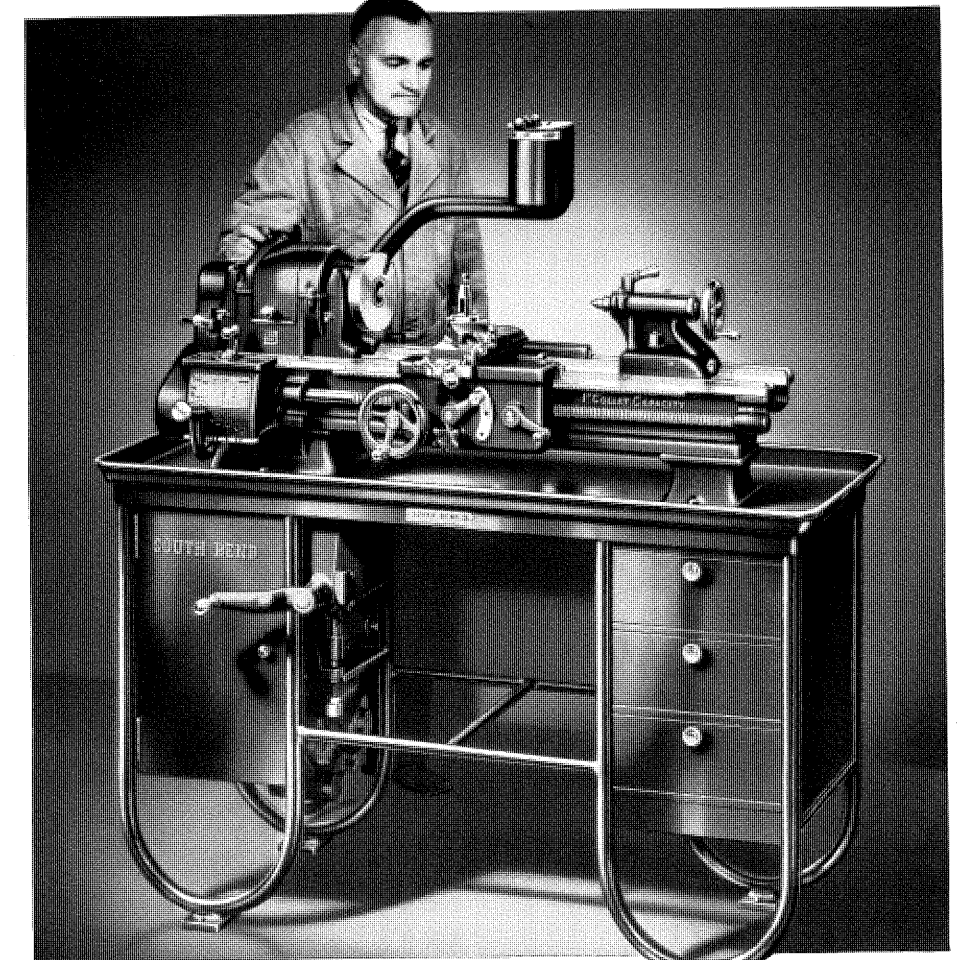
The tubular steel bench illustrated at right provides a rigid support for the lathe, as it is well braced and all joints are securely welded. The top of the bench has a roll rim all the way around and serves as a chip pan or oil pan. Drawers are provided in the right end of the bench for tool storage.

Space in left end of bench is provided for the underneath motor drive mechanism. When this bench is ordered with a South Bend Lathe, the entire unit is shipped fully assembled, as shown, and the lathe is ready to operate when connected to electric current.

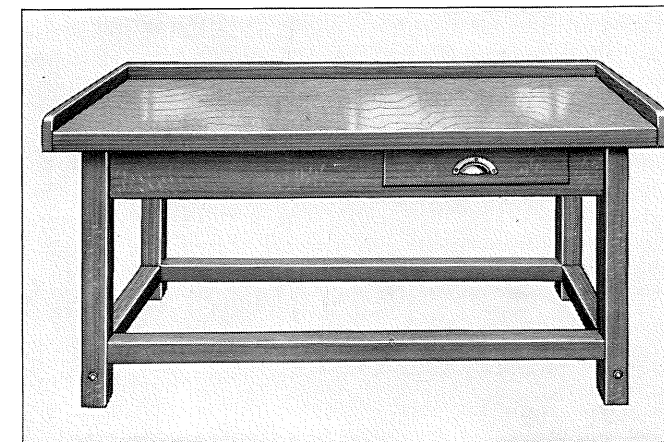
This bench is designed for use with the 9-inch 1" Collet Bench Lathe or 9-inch Series "T" Bench Lathe with Underneath Motor Drive. Price includes fitting lathe to bench when ordered with lathe.

Steel Bench for Lathes

Cat. No.	For Bed Length	Size Bench Top	Ship. Wt. Bench Only	Code Word
1795	3' or 3 1/2'	51 1/2" x 22"	265 lbs.	Pavom
1796	4' or 4 1/2'	64 1/2" x 22"	295 lbs.	Paveq



Tubular Steel Bench for 9-in. Underneath Motor Driven Bench Lathes



Open Type Frame Bench



Cabinet Type Bench

Blue Print Plans for Wood Bench

Free with South Bend Bench Lathes on Request

Blue print plans showing how to build either a cabinet type bench or an open type frame bench for the lathe will be supplied on request, postpaid, no charge, to any purchaser of a South Bend Lathe.

Bench may be constructed of maple, hard pine or any other suitable, well seasoned wood. Specify size and type of lathe and whether you wish to build a cabinet bench or open frame bench.

Motors Supplied with South Bend Precision Lathes

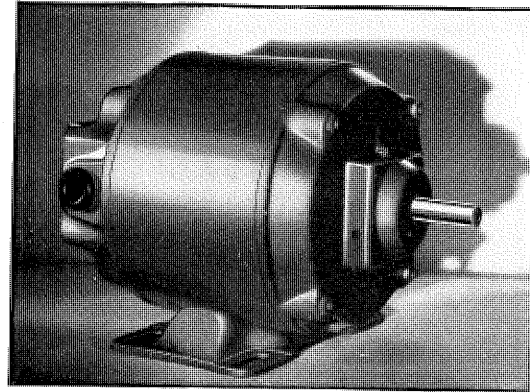
Electrical Equipment Included in Price of Lathe

Prices of all Motor Driven Lathes listed in this catalog include reversing motor, drum type reversing switch, wiring, V-belt for use between motor and countershaft and flat leather belt for use between the countershaft cone pulley and lathe spindle cone pulley. Motors supplied are General Electric, Westinghouse or equal make. Ball bearing motors are supplied as standard equipment on all Series "T" Underneath Motor Driven Lathes.

Reversing motors permit reversing the lathe spindle for cutting screw threads, tapping, grinding and other classes of work that require the lathe spindle to reverse.

The instant reversing type of motor will run in either direction, reversing itself instantly when the switch is thrown from the forward position to the reverse position.

The start-stop reversing motors are of the split-phase type and cannot be reversed instantly. The motor must be permitted to come to a stop before throwing the switch from



Reversing Motor

"forward" to "reverse" position. This type of motor causes lights on the same circuit to dim when the motor is started.

How to Order South Bend Motor Driven Lathes

Electric Current Specifications: When ordering a Motor Driven Lathe give the following information regarding the electric current to be used, so that the proper style and type of reversing motor can be fitted to the lathe.

When giving voltage state the exact voltage of motor wanted. When ordering do not specify 110-220 volt motor as motors for double voltage rating are supplied only on special order.

Always Give the Following Information:

—If Alternating Current state exact voltage, phase, cycle, and number of wires.

—If Direct Current state exact voltage only.

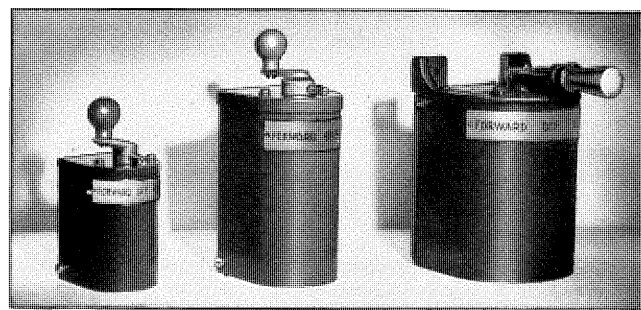
You can secure your current specifications from the electric power company furnishing your current.

Deduction for Omission of Motor, Switch or Wiring

Prices of all sizes and types of South Bend motor-driven lathes include motor, drum type reversing switch, and the necessary wiring for connecting the motor with the switch.

The lathe can be supplied without motor, switch or wiring for those who prefer to furnish their own electrical equipment. Deductions for the omission of motor, switch or wiring are listed in Price List.

An extra charge must be made if customer's motor and switch are fitted to lathe by us here at the factory. Extra charges for fitting motors, switches and other equipment are listed in Price List.



Type "I" Type "II" Type "III"
Drum Type Reversing Switches for South Bend Lathes

Use Code Words: When ordering by telegram or cablegram use code words below to indicate motor specifications. If motor characteristics differ from those listed below, give the exact voltage, phase and cycle.

Code Words for Standard Motor Specifications

Zapin	1-phase, 60-cycle, 110-volt, A.C. Ins't. Rev. Motor
Zutam	1-phase, 50-cycle, 110-volt, A.C. Ins't. Rev. Motor
Zbras	1-phase, 60-cycle, 220-volt, A.C. Ins't. Rev. Motor
Zuren	1-phase, 50-cycle, 220-volt, A.C. Ins't. Rev. Motor
Zompe	3-phase, 50/60-cycle, 220-volt, A.C. Ins't. Rev. Motor
Zuwar	3-phase, 50/60-cycle, 440-volt, A.C. Ins't. Rev. Motor
Zuwom	3-phase, 50/60-cycle, 550-volt, A.C. Ins't. Rev. Motor
Zurik	115-volt Direct Current Ins't. Rev. Motor
Zuwel	230-volt Direct Current Ins't. Rev. Motor

Special Motors in Lieu of Standard Motors on South Bend Lathes

Special motors having greater horsepower than the standard motors as listed in this catalog can be supplied to order with South Bend Lathes that are to be used for heavy duty work. Prices will be quoted on request.

Special motors having voltage ratings other than shown above; double rated motors; 25, 30 or 40 cycle A.C. motors; special motors for marine or tropical service; and other special electrical equipment can be supplied to order. See Price List for additional cost; or write for quotation, and delivery on lathe with special motor equipment.

Drum Type Reversing Switches

Drum type reversing switches are supplied for starting, stopping and reversing the motors used on South Bend Lathes. The handle of the switch has three positions: forward, off and reverse.

Three types of drum reversing switches are used. The type of switch supplied is determined by the size and type of motor used and the current characteristics on which the motor is to be operated.

Special electrical equipment, such as push button type starting switch, overload and under voltage protection, etc., can be supplied to order. Prices will be quoted on request.

Export Information on South Bend Precision Lathes

Informes con Respecto a la Exportación de Tornos South Bend

South Bend Lathes Have Been Exported to all parts of the world for more than twenty-five years. In that time shipments have been made to 102 different countries or colonies. The reputation of South Bend Lathes is, therefore, world-wide and users everywhere can testify to their high quality.

Your Order Carefully Handled. Your order receives careful and prompt attention at our hands. You may entrust it to our care, secure in the knowledge that we will do our part to fulfill your most exacting requirements.

The Latest Export Information is available to our friends overseas at all times. We maintain a special department in our offices having the latest information on steamship rates, shipping data, insurance premiums, consular charges, and other details that our customers may be interested in when purchasing a lathe. The services of this department are extended free of cost or obligation to our friends in other countries.

C.I.F. Prices to Various Ports. Write to us specifying the size and type of lathe in which you are interested and we will send you a detailed itemized C.I.F. quotation to your nearest port.

Correspondence in Any Language. You may write us in any language you wish and we will respond in your own language, the English language, or in any other you specify. We have competent translators in our Export Department for correspondence in various languages.

Metric Lathes with full metric equipment including metric lead screw, metric graduations on the cross feed screw, compound rest screw, taper attachment and tailstock spindle can be supplied to order, in all sizes of South Bend Lathes at no extra cost. See pages 108, 109 and 110.

Boxing for Export Shipment. When boxing South Bend Lathes for export shipment, the lathe is dismantled and all parts removed are oiled, greased, wrapped and packed in one strong case as illustrated above. All parts are blocked and fastened solidly inside the case to prevent moving while in transit. The box is lined inside with waterproof paper, and bound with steel tape outside.

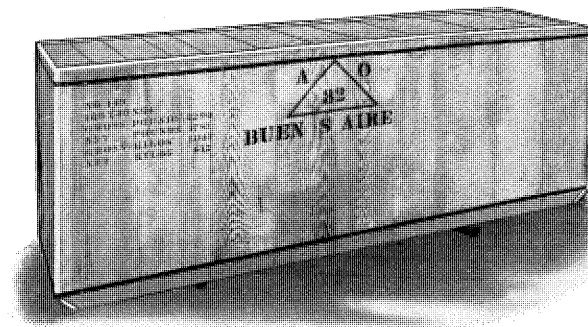
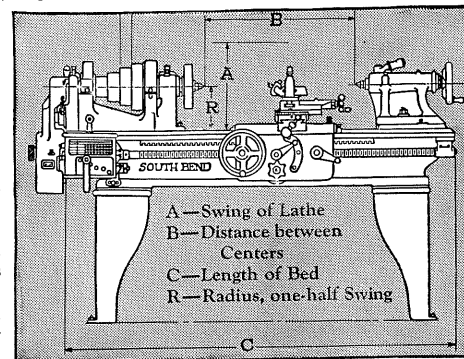
An extra charge is made to cover the cost of boxing lathes for ocean shipment. These boxing charges for each size lathe are shown in Price List No. 100-P.

Mule Back Packing. When desired, we can pack South Bend Lathes for shipment in small boxes suitable for mule back transportation. Prices and information on request.

The Size of a Lathe

The size of a Screw Cutting Lathe is determined by the Swing over the Bed and Length of the bed as indicated by the illustration below.

European tool manufacturers determine the size of a lathe by its radius or center distance: for example, an 8" center lathe is a lathe having a radius of 8 inches. What the European terms an 8" center Lathe, United States manufacturers term a 16-inch swing lathe.



Los Tornos South Bend han sido exportados a todos los rincones del mundo durante los últimos veinte y cinco años. Durante este tiempo, se han hecho despachos a ciento y dos países. La reputación de los Tornos South Bend es, por lo tanto, mundial, y todos los que usan nuestros tornos pueden testificar su alta calidad y su adaptabilidad a todo trabajo fino y de gran exactitud.

Tenemos a su disposición los informes más recientes sobre la exportación de nuestros productos a cualquier país. Tenemos un departamento dedicado a obtener los últimos informes sobre las tarifas de las compañías de vapores, los derechos consulares, las primas de seguro y otros detalles en los cuales nuestros clientes están interesados al comprar tornos. Los servicios de este departamento son enteramente gratis.

Su Pedido Recibirá Manejo Cuidadoso. Su pedido tendrá nuestra más esmerada atención, pudiendo Ud. confiar en nuestro criterio, porque haremos lo posible para asegurarle satisfacción absoluta.

Cotizaciones con Precios Costo, Seguro y Flete hasta cualquier puerto serán suministradas a solicitud. Sírvase escribirnos indicando el tamaño y tipo de torno en el cual Ud. está interesado que nosotros le enviaremos una cotización, costo, seguro y flete hasta su puerto más cercano.

Correspondemos en cualquier idioma. Puede Ud. escribirnos en cualquier idioma que nosotros le contestaremos en su lengua propia, en inglés, o en cualquier otro idioma que Ud. nos indique. Tenemos traductores de español, francés, y portugués en nuestro departamento de exportación. Podemos corresponder en los otros idiomas pues tenemos relaciones con traductores adiestrados.

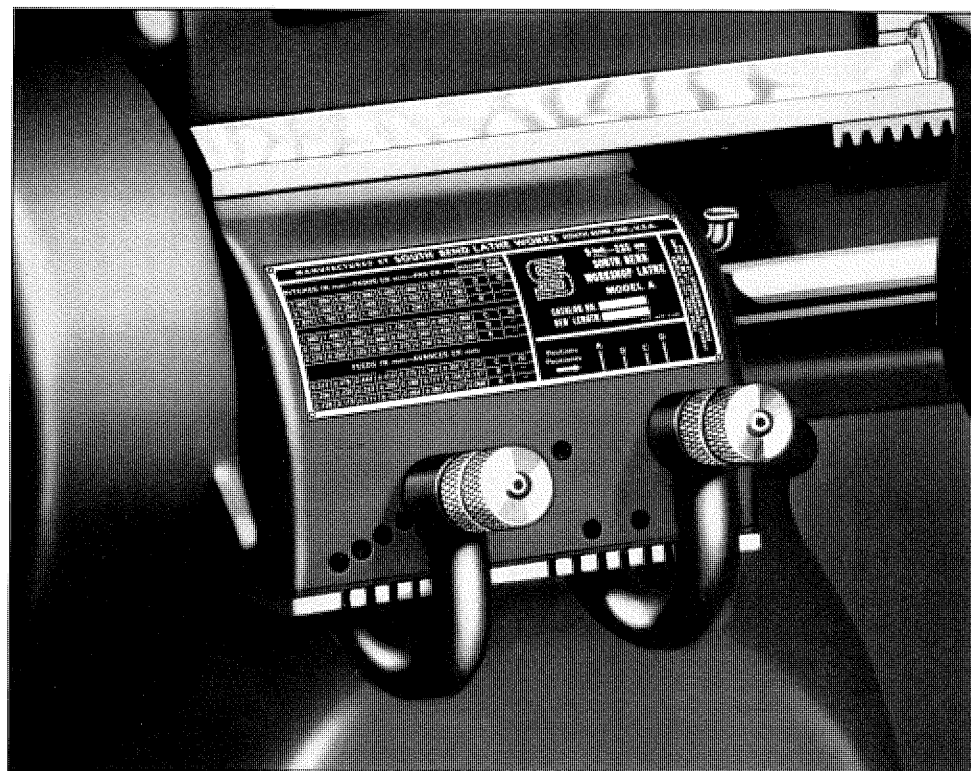
Tornos Métricos con todo el equipo métrico incluyendo un tornillo guíador métrico, graduaciones métricas en los tornillos del avance transversal y del soporte compound, en el aditamento para torneado cónico, y en el husillo de la contrapunta pueden solicitarse a solicitud en todos los tamaños de los Tornos South Bend sin cargo extra. Véase las páginas 108, 109 y 110.

El Empaque para Transporte Marítimo. Al encajonar los Tornos South Bend para transporte marítimo, se desarman y todas sus partes se aceitan, engrasan, envuelven y empaquetan en una caja fuerte como se puede ver en la ilustración de arriba. Todas las partes se fijan sólidamente en la caja para evitar su movimiento durante el tiempo que las máquinas están en camino. Las cajas tienen forros de papel impermeable, y están reforzadas por cintas de acero. Las cajas están marcadas de acuerdo con las indicaciones de nuestros clientes sin costo adicional de su parte. La maquinaria destinada a la República Mejicana se empaqueta del mismo modo que si fuera enviada dentro del país, o sea, en cajas hechas de tablillas de madera.

Una cantidad adicional se cobra cuando los tornos tienen que ser empacados para transporte marítimo. Estas cantidades extra, para cada tamaño de torno, están indicadas en la Lista de Precios No. 100-P.

Encajonamiento para Transporte a Lomo de Mula

A solicitud, podemos empacar Tornos South Bend en cajas pequeñas para permitir su transporte a lomo de mula. Se suministran precios y detalles a petición.



Metric Quick Change Gear Box for South Bend Lathes

Metric Quick Change Gear South Bend Precision Lathes Made in All Sizes with All Types of Drives

All sizes and types of South Bend Quick Change Gear Precision Lathes can be supplied with full metric equipment including metric quick change gear box, metric lead screw, metric cross feed screw and metric graduations. See page 109.

The metric quick change gear box supplied on all Metric Quick Change Gear South Bend Lathes is illustrated above. Changes for the various metric screw threads and power feeds are made by shifting the two levers on front of the quick change gear box.

The screw threads cut range from 0.2 mm pitch to 7.5 mm pitch, as listed on the index chart at right. Power longitudinal feeds obtained through the gear box range from 0.068 mm to 0.512 mm per revolution of the spindle.

The direct reading index chart attached to the gear box shows the arrangement of the levers for the various threads and feeds.

This quick change gear mechanism is so designed that it is impossible to lock the gears.

Screw threads from 0.2 mm pitch to 1.5 mm pitch and power feeds are instantly available by shifting the levers on the gear box when the regular stud gear is in use.

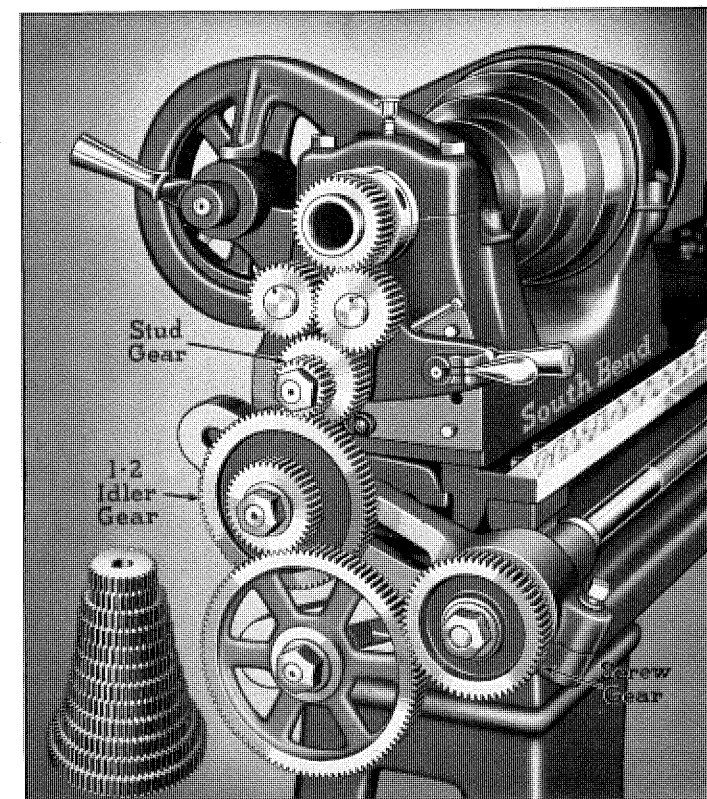
Coarse pitch screw threads ranging from 1. mm pitch to 7.5 mm pitch are obtained by replacing the regular stud gear with a special stud gear which is supplied with the lathe.

All Gears in the gear box are made of steel and are precision cut and tested for accuracy. Large bearing surfaces and ample oiling facilities assure smooth operation and long life.

Prices of all Metric Quick Change Gear Lathes are the same as for the same size and type of Quick Change Gear Lathe with the English lead screw, English quick change gear box and English graduations, as listed in the price list.

MANUFACTURED BY SOUTH BEND LATHE WORKS SOUTH BEND, IND., U.S.A.											
PITCHES IN mm—PASOS EN mm—PAS EN mm										POSITION POSITION	STUD PINION
7.500	7.000	6.500	6.000	5.500	5.000	4.500	4.000			D	50
3.750	3.500	3.250	3.000	2.750	2.500	2.250	2.000			C	50
1.875	1.750	1.625	1.500	1.375	1.250	1.125	1.000			B	50
1.500	1.400	1.300	1.200	1.100	1.000	0.900	0.800			C	20
0.750	0.700	0.650	0.600	0.550	0.500	0.450	0.400			B	20
0.375	0.350	0.325	0.300	0.275	0.250	0.225	0.200			A	20
FEEDS IN mm—AVANCES EN mm										POSITION POSITION	STUD PINION
0.512	0.478	0.444	0.410	0.375	0.341	0.307	0.273			C	20
0.256	0.239	0.222	0.205	0.188	0.171	0.154	0.137			B	20
0.128	0.119	0.111	0.102	0.094	0.085	0.077	0.068			A	20

Chart Showing Threads and Feeds Available on South Bend Metric Quick Change Gear Lathes



Metric Standard Change Gear Lathe with Gear Guard Removed to Show Change Gears

Metric Standard Change Gear South Bend Precision Lathes Made in All Sizes with All Types of Drives

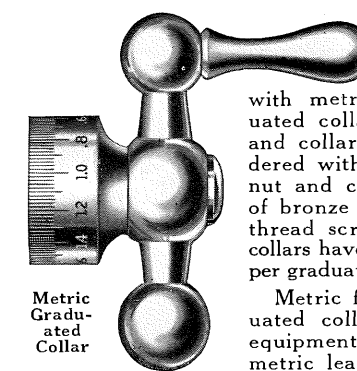
All sizes and Types of South Bend Standard Change Gear Precision Lathes can be supplied in the metric type with full metric equipment, including metric lead screw, metric cross feed screw and metric graduations.

The metric lead screw and a set of independent change gears supplied with the lathe permit cutting right and left hand screw threads from 0.2 mm pitch to 7.0 mm pitch, as listed on the index chart above. In addition, the change gears provide a wide range of automatic power cross feeds and automatic power

METRIC STANDARD CHANGE GEAR LATHE SCREW THREADS AND POWER FEEDS METRIC LEAD SCREW—3 M M PITCH											
M M PITCH	STUD GEAR	IDLER GEARS	SCREW GEAR	CROSS FEEDS	LONG. FEEDS						
7.00	56	FIG. 1	24								
6.50	52	FIG. 1	24								
6.00	48	FIG. 1	24								
5.50	44	FIG. 1	24								
5.00	40	FIG. 1	24								
4.50	36	FIG. 1	24								
4.00	32	FIG. 1	24								
3.50	28	FIG. 1	24								
3.00	24	FIG. 1	24								
2.75	44	FIG. 1	48								
2.50	40	FIG. 1	48								
2.25	36	FIG. 1	48								
2.00	32	FIG. 1	48								
1.75	28	FIG. 1	48								
1.50	24	FIG. 1	48								
1.40	28	FIG. 1	60								
1.30	52	FIG. 2	30								
1.25	40	FIG. 2	24								
1.20	48	FIG. 2	30	.126	.410						
1.10	44	FIG. 2	30	.115	.375						
1.00	40	FIG. 2	30	.105	.341						
0.90	36	FIG. 2	30	.094	.307						
0.80	32	FIG. 2	30	.084	.273						
0.75	32	FIG. 2	32	.079	.256						
0.70	28	FIG. 2	30	.073	.239						
0.65	52	FIG. 2	60	.068	.222						
0.60	48	FIG. 2	60	.063	.205						
0.55	44	FIG. 2	60	.058	.188						
0.50	40	FIG. 2	60	.052	.171						
0.45	36	FIG. 2	60	.047	.154						
0.40	32	FIG. 2	60	.042	.137						
0.35	28	FIG. 2	60	.037	.119						
0.30	24	FIG. 2	60	.031	.102						
0.25	16	FIG. 2	48	.026	.085						
0.20	16	FIG. 2	60	.021	.068						

Index Chart Showing Threads and Feeds on Metric Standard Change Gear Lathes

Metric Cross Feed and Compound Rest Screws With Metric Collars



Metric Graduated Collar

Cross feed screws and compound rest feed screws can be supplied with metric thread and metric graduated collar in lieu of regular screws and collars at no extra cost when ordered with the lathe. The cross feed nut and compound rest nut are made of bronze and tapped to fit the metric thread screws. All metric feed screw collars have graduations reading 0.02 mm per graduation.

Metric feed screws and metric graduated collars are supplied as regular equipment on all lathes equipped with metric lead screws.

Metric Graduations on Tailstock Spindle

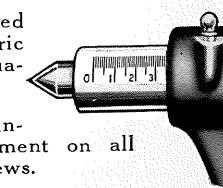
The tailstock spindle can be supplied with graduations reading in the metric system in addition to English graduations at no extra cost.

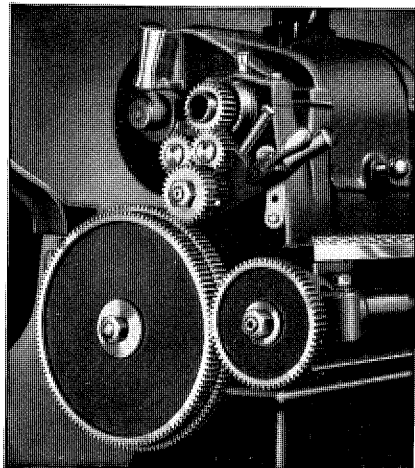
Metric graduations on tailstock spindle are supplied as regular equipment on all lathes equipped with metric lead screws.

Metric Graduations on Attachments

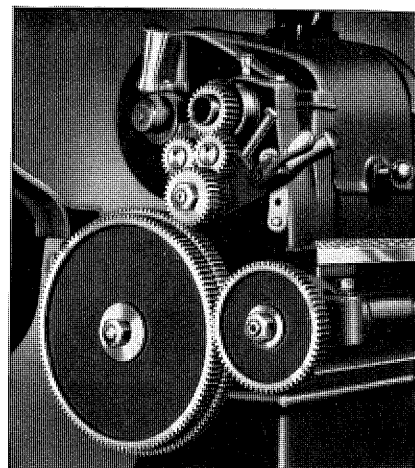
The taper attachment and micrometer carriage stop can be supplied with metric graduations at no extra cost when ordered with the lathe.

Metric graduations supplied as regular equipment on all taper attachments and micrometer carriage stops ordered with lathes equipped with metric lead screws.

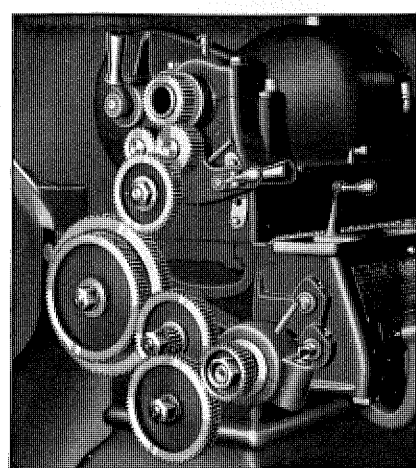




English Transposing Gears for Cutting English Threads on Standard Change Gear Lathe with Metric Lead Screw



Metric Transposing Gears for Cutting Metric Threads on Standard Change Gear Lathe with English Lead Screw



Metric Change Gears for Cutting Metric Threads on Quick Change Gear Lathe with English Lead Screw

Metric and English Transposing Gears

For Cutting Both English and Metric Screw Threads on South Bend Lathes

Any size or type of South Bend Lathe, whether equipped with English lead screw or metric lead screw, can be used for cutting both English and metric screw threads when equipped with a set of transposing gears.

Metric Transposing Gears are supplied for cutting metric screw threads on lathes having English lead screws.

English Transposing Gears are supplied for cutting English screw threads on lathes having metric lead screws.

Graduated Collars on the cross feed screw and compound rest screw and graduations on tailstock spindle can be supplied in either the English or the metric system, as described at bottom of page 109.

Standard Change Gear Lathes are recommended if the lathe is to be used equally for English and metric thread cutting. Metric lathes equipped with metric lead screws are more convenient if the lathe is to be used mostly for cutting metric screw threads. See pages 108 and 109.

Metric Transposing Gears (M)

English Lead Screw—English Graduations

For cutting metric screw threads in addition to English screw threads on lathes having English lead screws. All graduations in English system. (A special gear guard is required if ordered after lathe leaves factory. Price on request.)

Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1759-W	Kazaj	1955-W	Lupal
9"	1765	Kazen	1955	Luhel
11"	1766	Kaziv	1956	Luhip
13"	1767	Kazox	1957	Luhov
14½"	1790	Kebex	1961	Lukaw
16"	1769	Kebal	1959	Lujem
16-24"	1787	Keref	1960	Lujow

English Transposing Gears (O)

Metric Lead Screw—Metric Graduations

For cutting English screw threads in addition to metric screw threads on lathes having metric lead screws. All graduations in metric system. (A special gear guard is required if ordered after lathe leaves factory. Price on request.)

Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1281-W	Gejex	1971-W	Helur
9"	1281	Gejib	1971	Heqon
11"	1282	Gekov	1972	Heqep
13"	1283	Gemiq	1973	Heqit
14½"	1284	Gemuc	1974	Heray
16"	1285	Genoj	1975	Herig
16-24"	1286	Gepuq	1976	Herom

TRANSPOSING GEAR CHART				ENGLISH SCREW THREADS		STUD GEAR	SCREW GEAR
THREADS PER INCH	STUD GEAR	IDLER GEAR	SCREW GEAR	FIG. 1	FIG. 2		
4	54	FIG. 1	24	127T	24T	FIG. 1	135T
4½	56	FIG. 1	26	135T	24T		
5	54	FIG. 1	26	127T	24T	FIG. 2	135T
5½	36	FIG. 1	22	127T	24T		
6	36	FIG. 1	24	127T	24T	FIG. 3	135T
6½	36	FIG. 1	26	127T	24T		
7	36	FIG. 1	28	127T	24T	FIG. 3	135T
7½	36	FIG. 2	30	127T	24T		
8	36	FIG. 2	32	127T	24T	FIG. 3	135T
9	32	FIG. 2	32	127T	24T		
10	36	FIG. 2	40	127T	24T	FIG. 3	135T
11	36	FIG. 2	44	127T	24T		
12	36	FIG. 2	48	127T	24T	FIG. 3	135T
13	36	FIG. 2	52	127T	24T		
14	36	FIG. 2	56	127T	24T	FIG. 3	135T
16	36	FIG. 2	64	127T	24T		
18	32	FIG. 2	64	127T	24T	FIG. 3	135T
20	18	FIG. 2	40	127T	24T		
24	18	FIG. 2	48	127T	24T	FIG. 3	135T
26	18	FIG. 2	52	127T	24T		
27	18	FIG. 2	54	127T	24T	FIG. 3	135T
28	18	FIG. 2	56	127T	24T		
30	18	FIG. 2	60	127T	24T	FIG. 3	135T
32	18	FIG. 2	64	127T	24T		
36	16	FIG. 2	64	127T	24T	FIG. 3	135T
40	16	FIG. 2	80	127T	24T		
44	18	FIG. 3	44	127T	24T	FIG. 3	135T
48	18	FIG. 3	48	127T	24T		
52	18	FIG. 3	52	127T	24T	FIG. 3	135T
54	18	FIG. 3	54	127T	24T		
56	18	FIG. 3	56	127T	24T	FIG. 3	135T
60	18	FIG. 3	60	127T	24T		
64	18	FIG. 3	64	127T	24T	FIG. 3	135T
72	16	FIG. 3	64	127T	24T		
80	16	FIG. 3	80	127T	24T	FIG. 3	135T
				127T	24T		

Index Chart Showing English Threads Cut on Metric Lathe with English Transposing Gears

TRANSPOSING GEAR CHART				METRIC SCREW THREADS		STUD GEAR	SCREW GEAR
M/M	STUD GEAR	IDLER GEAR	SCREW GEAR	FIG. 1	FIG. 2		
6.00	46	FIG. 1	20	127T	24T	FIG. 1	100T
5.50	44	FIG. 1	20	127T	24T		
5.00	40	FIG. 1	20	127T	24T	FIG. 2	100T
4.50	36	FIG. 1	20	127T	24T		
4.00	32	FIG. 1	20	127T	24T	FIG. 3	100T
3.50	28	FIG. 1	20	127T	24T		
3.00	24	FIG. 1	20	127T	24T	FIG. 3	100T
2.75	44	FIG. 1	40	127T	24T		
2.50	32	FIG. 1	32	127T	24T	FIG. 3	100T
2.25	36	FIG. 1	40	127T	24T		
2.00	32	FIG. 1	40	127T	24T	FIG. 3	100T
1.75	56	FIG. 2	80	127T	24T		
1.50	48	FIG. 2	80	127T	24T	FIG. 3	100T
1.40	56	FIG. 2	100	127T	24T		
1.30	36	FIG. 2	100	127T	24T	FIG. 3	100T
1.25	80	FIG. 2	80	127T	24T		
1.20	48	FIG. 2	100	127T	24T	FIG. 3	100T
1.10	48	FIG. 2	100	127T	24T		
1.00	40	FIG. 2	100	127T	24T	FIG. 3	100T
0.90	36	FIG. 2	100	127T	24T		
0.80	32	FIG. 2	100	127T	24T	FIG. 3	100T
0.75	24	FIG. 2	80	127T	24T		
0.70	28	FIG. 2	100	127T	24T	FIG. 3	100T
0.65	28	FIG. 2	100	127T	24T		
0.60	24	FIG. 2	100	127T	24T	FIG. 3	100T
0.55	22	FIG. 2	100	127T	24T		
0.50	20	FIG. 2	100	127T	24T	FIG. 3	100T
0.45	18	FIG. 2	100	127T	24T		
0.40	16	FIG. 2	100	127T	24T	FIG. 3	100T
0.35	56	FIG. 3	100	127T	24T		
0.30	48	FIG. 3	100	127T	24T	FIG. 3	100T
0.25	40	FIG. 3	100	127T	24T		
0.20	32	FIG. 3	100	127T	24T	FIG. 3	100T
				127T	24T		

Index Chart Showing Metric Threads Cut on English Lathe with Metric Transposing Gears

Metric Transposing Gears (N)

English Lead Screw—Metric Graduations

For cutting metric screw threads in addition to English screw threads on lathes having English lead screws. Metric graduations in lieu of English graduations. This equipment can be supplied only when ordered with lathe.

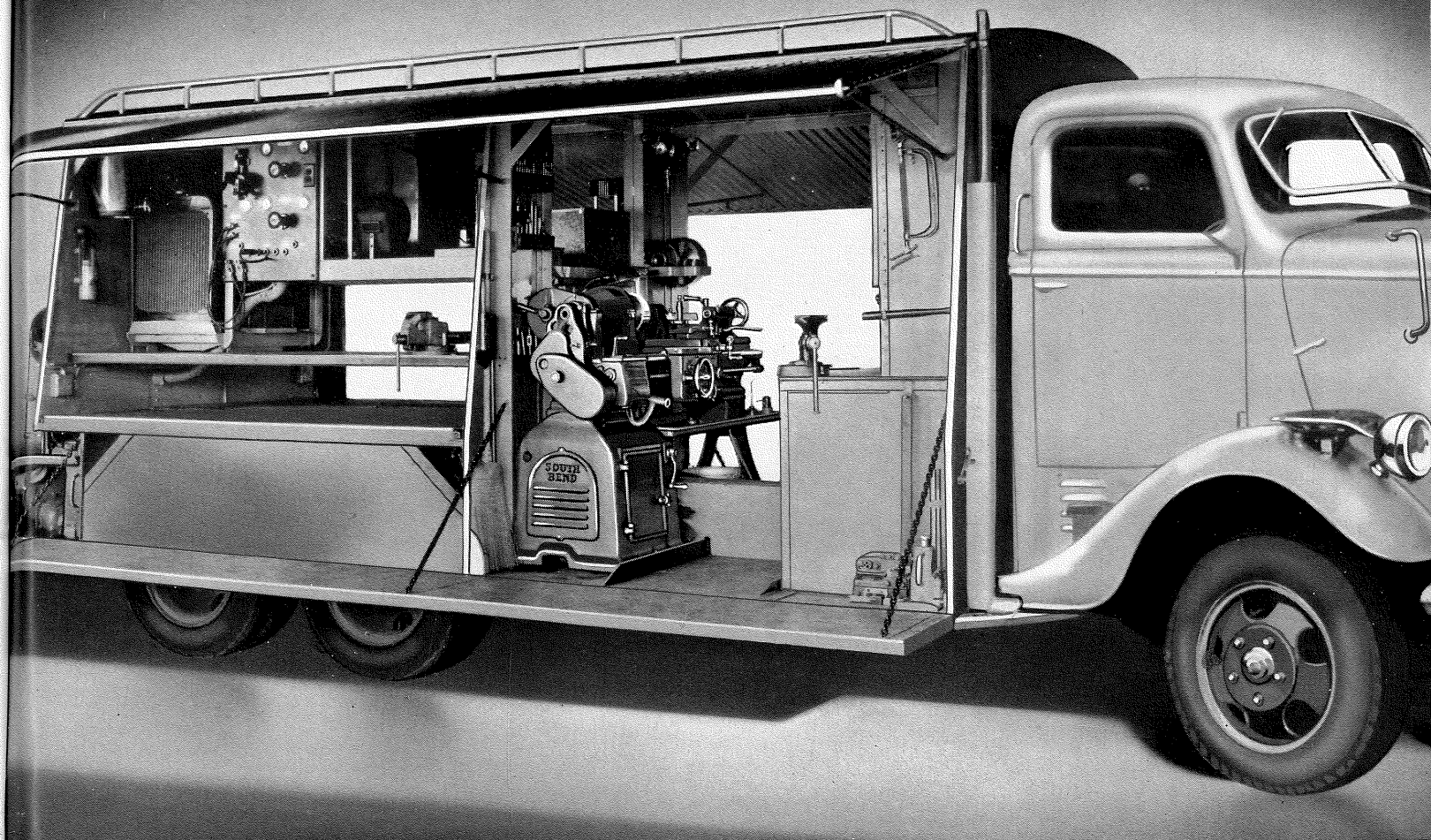
Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1781-W	Kobaj	1941-W	Lupep
9"	1781	Koben	1941	Ludaf
11"	1782	Kobir	1942	Ludej
13"	1783	Kobox	1943	Ludin
14½"	1789	Koceb	1949	Lukok
16"	1785	Kobud	1945	Luduz
16-24"	1788	Kocax	1948	Lufag

English Transposing Gears (P)

Metric Lead Screw—English Graduations

For cutting English screw threads in addition to metric screw threads on lathes having metric lead screws. English graduations in lieu of metric graduations. This equipment can be supplied only when ordered with lathe.

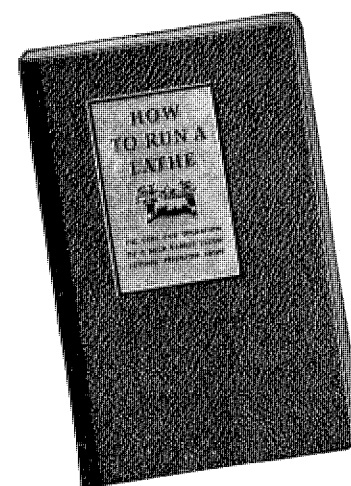
Size of Lathe	Standard Change		Quick Change	
	Cat. No.	Code	Cat. No.	Code
9" W.S.	1291-W	Gateg	1981-W	Hedar
9"	1291	Gatik	1981	Higik
11"	1292	Gatuw	1982	Higoq
13"	1293	Gayog	1983	Higuw
14½"	1294	Gazof	1984	Hihap
16"	1295	Gazej	1985	Hihet
16-24"	1296	Gazuiz	1986	Hihix



Mobile Machine Shop Equipped with South Bend Lathe

South Bend Underneath Belt Motor Driven Lathes are popular for use in mobile machine shop service because they are entirely self-contained, reliable and versatile. The lathe is the most important of all the tools in the portable machine shop because it can be used for so many classes of work. When equipped with the necessary attachments, the lathe may be used as a milling machine, grinding machine and drill press, in addition to the usual lathe operations.

This type of shop is especially valuable for service in oil fields, construction camps, road building, airports, army posts and other large engineering projects. The advantage of taking the shop to the job is obvious when the delay and difficulty involved in transporting heavy and awkward machines to and from a shop are taken into consideration. South Bend Lathes have been supplied for several different types of mobile machine shops. Information and illustrations furnished on request.

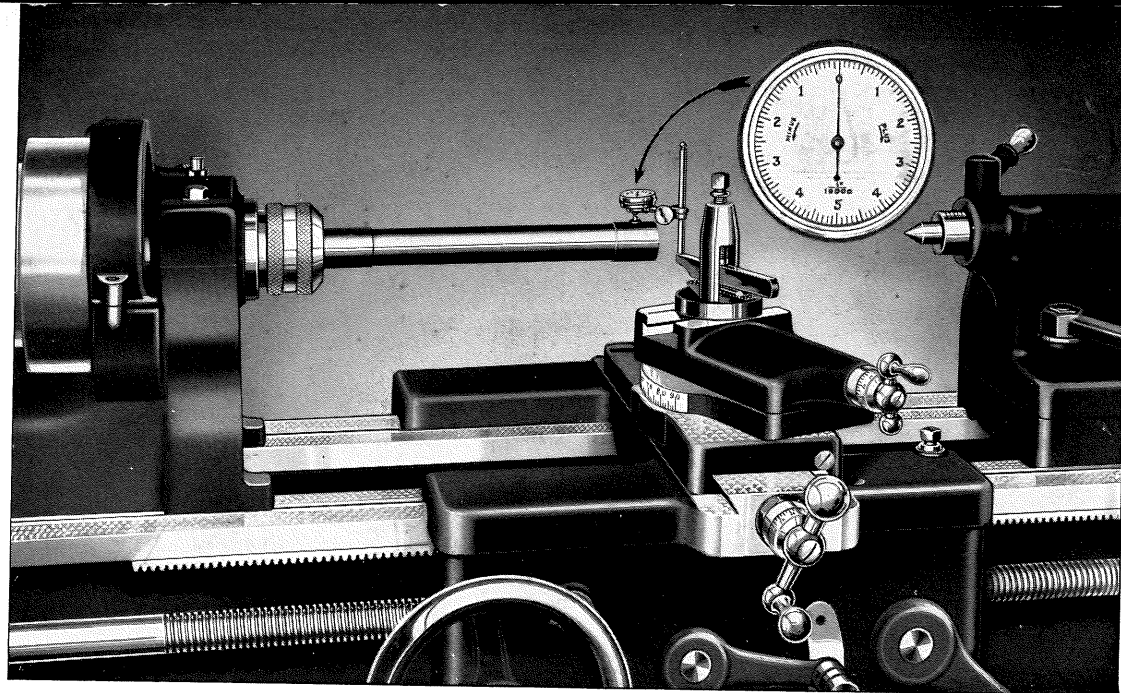


"How to Run a Lathe"—A Practical Reference Book

Revised Edition No. 34 of the book "How to Run a Lathe" contains 128 pages, size 5½" x 8", and more than 360 illustrations. Lathe operation on all kinds of machine work is clearly explained and illustrated. Many valuable reference tables, rules and kinks are included. Detailed information is given on grinding lathe tool cutter bits, taking accurate measurements, care and operation of the lathe, thread cutting and other special classes of lathe work. Many large industries use "How to Run a Lathe" for apprentice shop training. Schools and colleges all over the world accept it as a standard text and reference book on machine shop practice. Over 1,500,000 copies have been published.

A copy of "How to Run a Lathe," English Edition No. 34, with paper binding, will be mailed anywhere in the world postpaid for 25c. Leatherette binding 75c. Coin or stamps of any country accepted.

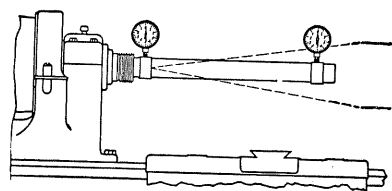
"How to Run a Lathe" is also printed in Spanish, French, and Portuguese.



Accuracy of South Bend Lathes

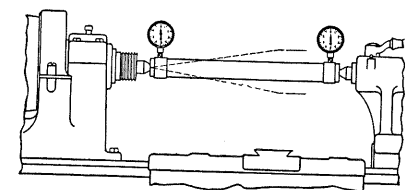
Each Lathe Must Pass a Series of Rigid Tests

Precision accuracy is built into every South Bend Lathe. From the planing of the lathe bed to the final testing of the finished lathe, the highest standards of inspection are maintained. Sixty-four major tests are made on each lathe during the process of manufacture. The illustrations on this page show a few of the more important tests. The maximum variation allowed on any of these tests is .001".



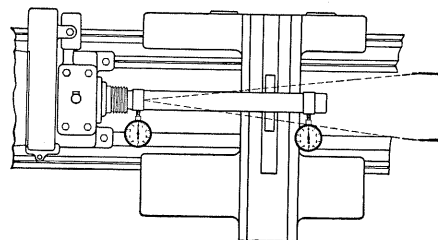
Spindle Alignment—Vertical Plane

The alignment of the headstock spindle with the V-ways of the lathe bed is tested in the vertical plane with a test bar and dial indicator.



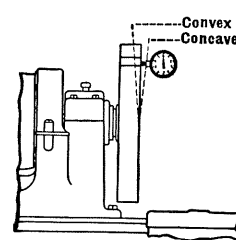
Tailstock Center Height

The height of the tailstock center is tested with a dial indicator and a precision test bar mounted between centers, as shown above.



Spindle Alignment—Horizontal Plane

The alignment of the headstock spindle with the V-ways of the lathe bed is tested in the horizontal plane as shown in the illustration above.



Saddle Cross Slide Test

The saddle cross slide dovetail is tested for squareness by machining the face plate and then testing with a dial indicator.

WE GUARANTEE every South Bend Lathe to be accurate and mechanically perfect; to give you entire satisfaction and the service you have a right to expect. We will replace free of charge, F.O.B., South Bend, Indiana, U.S.A., within one year from the date of purchase, any lathe part that proves defective, either in material or workmanship.

If you are interested in a lathe and are not familiar with the quality and workmanship of South Bend Lathes, we will, on request, ship any size or type of South Bend Lathe anywhere in the United States for use in your shop. If for any reason you are not satisfied, you may return it to us within thirty days and we will pay the return freight charges and refund your money.

SOUTH BEND LATHE WORKS

TESTS			Test Record	Tested By
HEADSTOCK SPINDLE				
Outer end of Test Bar runs true.....				
Test Bar parallel with Bed (Top).....				
Test Bar parallel with Bed (Side).....				
End Play Test.....				
Shoulder Test (Cam action).....				
HEADSTOCK & TAILSTOCK ALIGNMENT				
Parallel with Lathe Bed (Top).....				
Tailstock Spindle In.....				
Parallel with Lathe Bed (Top).....				
Tailstock Spindle Extended.....				
Parallel with Lathe Bed (Side).....				
Tailstock Spindle In.....				
Parallel with Lathe Bed (Side).....				
Tailstock Spindle Extended.....				
FACE PLATE—Concave				
LEAD SCREW—Cam Action, Forward.....				
Cam Action, Reverse.....				
SADDLE				
Saddle Gib Adjustment.....				
Cross Slide Test.....				
Bearing on Lathe Bed.....				
COMPOUND REST				
Bearing on Swivel.....				
Bearing on Top Slide.....				
COUNTERSHAFT—Clutch Test				
ADJUSTMENTS MADE IN FINAL TEST				
ASSEMBLED BY.....				
GENERAL INSPECTION.....				
DATE TESTED.....				

Factory Test Card

The illustration above is a reproduction of a factory test card on which records of the final inspection tests of each South Bend Lathe are kept. This test card is filed in our office for permanent record when the lathe is shipped.

For other lathe tests see pages 88 and 89.

A Partial List of Industries Using South Bend Lathes

A few well-known American manufacturers who are using South Bend Lathes are listed below. Thousands of other industries in the United States and throughout the world are also using South Bend Lathes. The names and addresses of several users in your locality will be furnished on request.

Aircraft Industries

Bendix Aviation Corporation
Curtiss-Wright Corporation
Fairchild Aircraft Corporation
Pan American Airways
Sikorsky Aircraft Corporation
Bell Aircraft Corporation
Wright Aeronautical Corporation
Consolidated Aircraft Corporation
North American Aviation, Inc.
Boeing Aircraft Company
Douglas Aircraft Company, Inc.

Automobile Industries

Ford Motor Company
General Motors
Chrysler Corporation
Chevrolet Motor Company
Hudson Motor Company
International Harvester Company
Cadillac Motor Car Company
Packard Motor Company
Studebaker Corp. of America
White Motor Company
DeSoto Motor Company
Dodge Motor Company
Briggs Manufacturing Company
Fisher Body Corporation
Willard Storage Battery Co.

Instrument Manufacturers

Taylor Instrument Company
Arma Engineering Company
Bell Telephone Laboratories
Eastman Kodak Company
Eugene Dietzgen Company
General Electric X-Ray Corp.
Leeds and Northrup Company
Minneapolis-Honeywell Regulator Co.
Sperry Gyroscope Company
Veeder-Root, Inc.

Radio Industries

Crosley Radio Corporation
Philco Radio & Television
Radio Corporation of America
Sparton Radio Company
United American Bosch Corp.
Westinghouse Electric & Mfg. Co.
Western Electric Company

Steel Industries

U.S. Steel Corporation
Carnegie Steel Company
Bethlehem Steel Company
Inland Steel Company
Youngstown Sheet & Tube Co.
American Steel & Wire Co.
Crucible Steel Co. of America
Republic Steel Corporation

U. S. Government Depts.

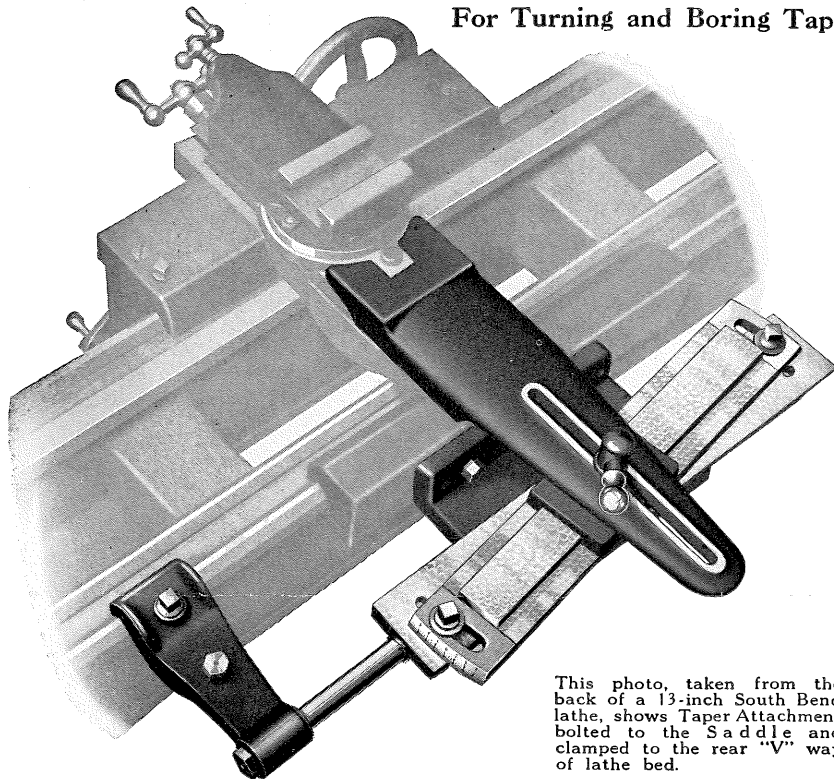
U.S. Bureau of Standards
U.S. Navy Yards
U.S. Army
U.S. Coast & Geodetic Survey
U.S. Dept. of Agriculture
U.S. Dept. of State
U.S. Geological Survey
U.S. Forest Service
U.S. Naval Air Stations
U.S. Naval Observatory
U.S. Naval Torpedo Station
U.S. Signal Corps
U.S. Bureau of Mines
U.S. Bureau of Marine Fisheries

Educational Institutions

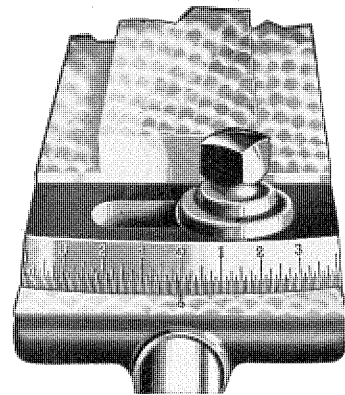
Mass. Institute of Technology
Pennsylvania, University of
Purdue, University of
California, University of
Yale, University of
Stanford, University of
Columbia, University of
Notre Dame, University of
Princeton, University of
Harvard, University of
Chicago, University of
Minnesota, University of

Graduated Taper Attachment for South Bend Lathes

For Turning and Boring Taper Work



This photo, taken from the back of a 13-inch South Bend lathe, shows Taper Attachment bolted to the Saddle and clamped to the rear "V" way of lathe bed.



Close-up of Graduation
On End of Swivel Bar

The Swivel Bar, which controls the Taper, is graduated—one end in inches per foot of taper and the other end in degrees. The attachment can be set for any Taper up to 3 inches per foot.

The Taper Attachment is used for tool room, manufacturing and production work for turning and boring all classes of tapers. It is especially practical on production work where a large number of duplicate parts are to be tapered machined by turning or boring. The attachment may be left on the lathe at all times when doing either taper or straight work. It requires only a couple of minutes to change the taper attachment from straight to taper machining or vice versa.

Fitting Taper Attachment to Lathe

The Taper Attachment should be ordered with the lathe so that it can be properly fitted and aligned at the factory. No extra charge is made for fitting this attachment to the lathe carriage and aligning with the V-ways of the bed. Fitting the Taper Attachment to lathe outside of our factory is not recommended as special tools and equipment are necessary.

Attachment Operates Entire Length of Bed

The Taper Attachment is bolted to the Lathe carriage and can be set for taper turning or boring at any position along the entire length of the lathe bed. The Attachment does not interfere with straight turning as it does not operate unless the clamp on the back "V" of the bed is locked.

Net Factory Prices of Graduated Taper Attachment

Size of Lathe	Catalog No.	Maximum Taper			Approx. Shipping Weight	Code Word	Price Attachment
		At One Setting	Per Foot	In Degrees			
Workshop	428-W	7 in.	3 in.	14	35 lbs.	Hapwo	
9 in.	209	9 in.	3 in.	14	40 lbs.	Dashe	
11 in.	211	9 in.	3 in.	14	50 lbs.	Devor	
13 in.	213	10 in.	3 in.	14	65 lbs.	Digit	
15 in.	215	10 in.	3 in.	14	80 lbs.	Doted	
16 in.	216	12 in.	3 in.	14	100 lbs.	Dress	125.00

SOUTH BEND LATHE WORKS

425 E. Madison Street, South Bend, Indiana