



Circular No. 13-1

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 |

All Page References Apply to Catalog 100

SOUTH BEND LATHE WORKS

Lathe Builders Since 1906
425 E. MADISON ST., SOUTH BEND, IND., U.S.A.



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