

# CLAUSING

**HEAVY-DUTY, PRECISION LATHES**



**SEE YOUR CLAUSING DEALER**

**DOOT MACHINERY CO.**  
**EMERSON 9-6241**  
1876 Industrial Way Redwood City

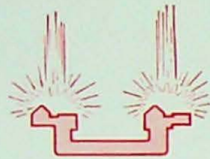
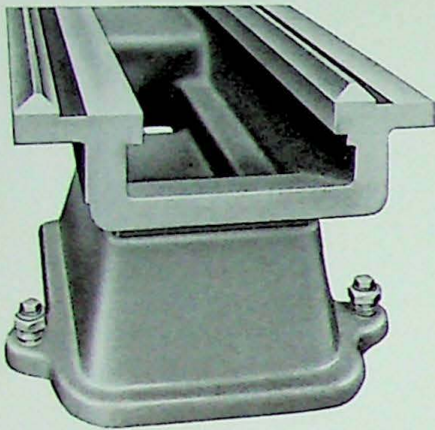
**CATALOG 1136-1**

© Atlas Press Co., 1961



# 12" heavy-duty, precision lathes

Clausing lathes give you more *plus value features* — more *production capacity and profit potential* — than have ever before been available in lathes of comparable size at or near their price.



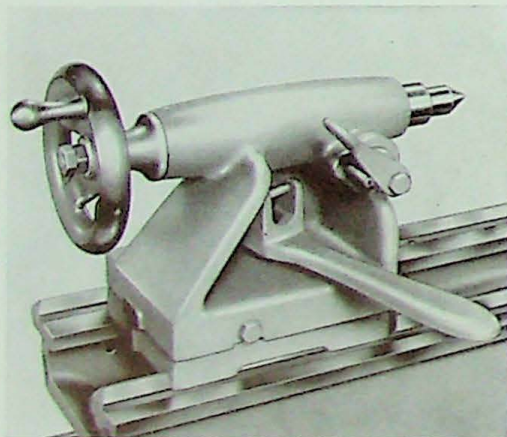
**FLAME HARDENED  
BED WAYS**

Flame hardened bed ways are *standard equipment at no extra cost* on all Clausing lathes — a long-service feature that adds years to accuracy life. Ways are precision ground to close tolerance after hardening.



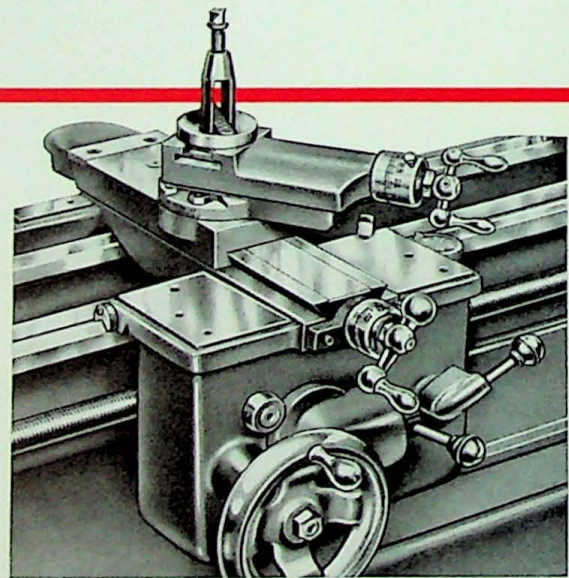
**"ZERO PRECISION"  
TAPERED  
ROLLER BEARINGS**

Spindles turn on "Zero Precision" Timken tapered roller bearings held to a tolerance of .00015". Spindles are steel forgings, precision ground their entire length — have hardened nose, 1-3/8" bore, 1-1/16" collet capacity.



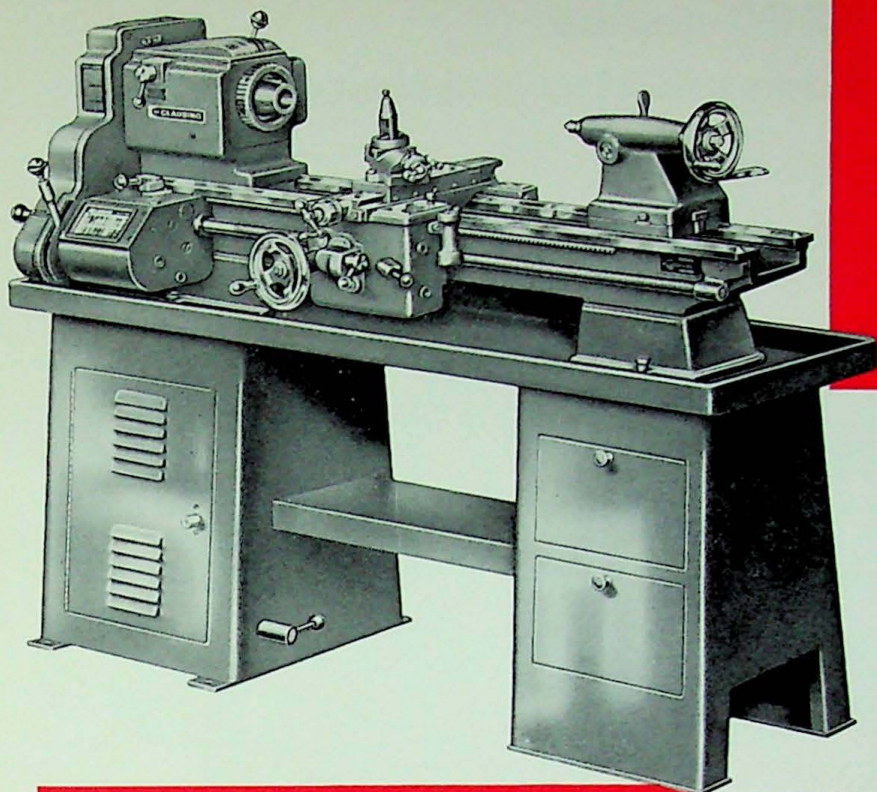
**TANGED TAILSTOCK**

Tailstock has a No. 3 MT ram *with tang socket* to handle big tools without slippage — long key guide that absorbs heavy torque loads — large coordinate type lock. Swing-type wrench, permanently attached, controls bed lock.



**DOUBLE-WALLED BOX-TYPE APRON,  
OIL BATH LUBRICATION**

Gear shafts are supported in both front and back walls of apron — maintain alignment under all loads. Gears are shaved — shafts are ground — *run in bath of oil*. A single lever operates positive gear clutch for engaging cross or longitudinal power feeds. Safety lock prevents engaging feeds and half-nuts at same time. Dovetail ways are ground, have gib adjustment.



**CLAUSING**

## 6300-series 12" lathes

Clausing 6300-series lathes have more advanced design features than any other lathe of comparable size and price.

### TOTALLY ENCLOSED HEADSTOCK

Headstock is completely enclosed — all gears, shafts, bearings and spindle bearings travel in a pumped bath of oil — and all gears are shaved — for smooth operation, long accuracy life. Controls are conveniently located outside headstock. Spindle nose is ASA — L-00 taper key-drive.

### INSTANT SELECTION of 54 THREADS, FEEDS

Quick-change mechanism provides instant selection of 54 threads and feeds. Box is totally enclosed — mechanism runs in bath of oil. Gears are shaved for smooth operation. Override clutch assures proper meshing of gears, prevents tooth damage.

Lead screw turns on two Timken roller bearings in gear box to eliminate end-play. Has easy-to-replace shear pin.

6300-series lathes are available with choice of two heavy-duty underneath drives — a variable speed or a step pulley countershaft, with clutch and brake optional.

### VARIABLE SPEED COUNTERSHAFT

Makes instantly available any speed from 43 to 222 RPM, and 250 to 1300 RPM while lathe is running. Speeds are changed by turning crank on lathe cabinet.

Drive is constructed for heavy-duty use. Drive pulleys are heat treated — shaft is hardened and ground — bearings are lubricated-for-life — cog belts are heat resistant, oil proof.

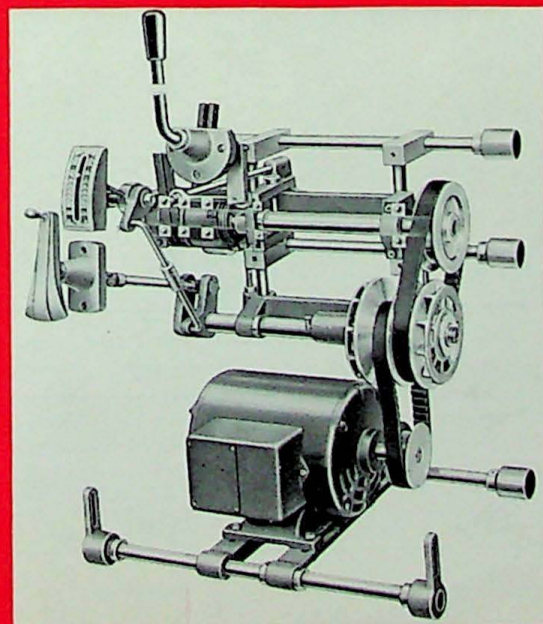
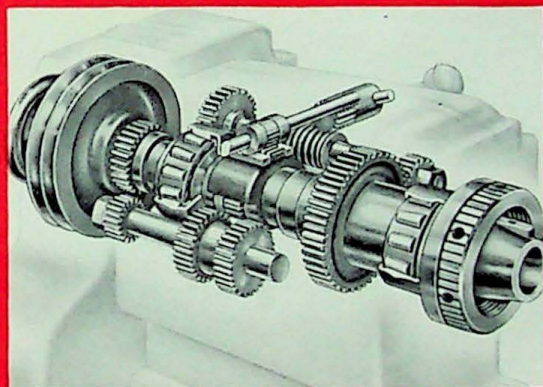
### STEP PULLEY COUNTERSHAFT

Ten spindle speeds from 30 to 1300 RPM are available with single-speed motor — five direct, five back-gear. Two-speed motor provides 18 speeds — 15 to 1300 RPM. Machined and balanced pulleys, hardened ground steel shaft, and lubricated-for-life ball bearings assure smoothness, long trouble-free service.

Spindle pulley is outboard — replacing belts is a quick, easy job.

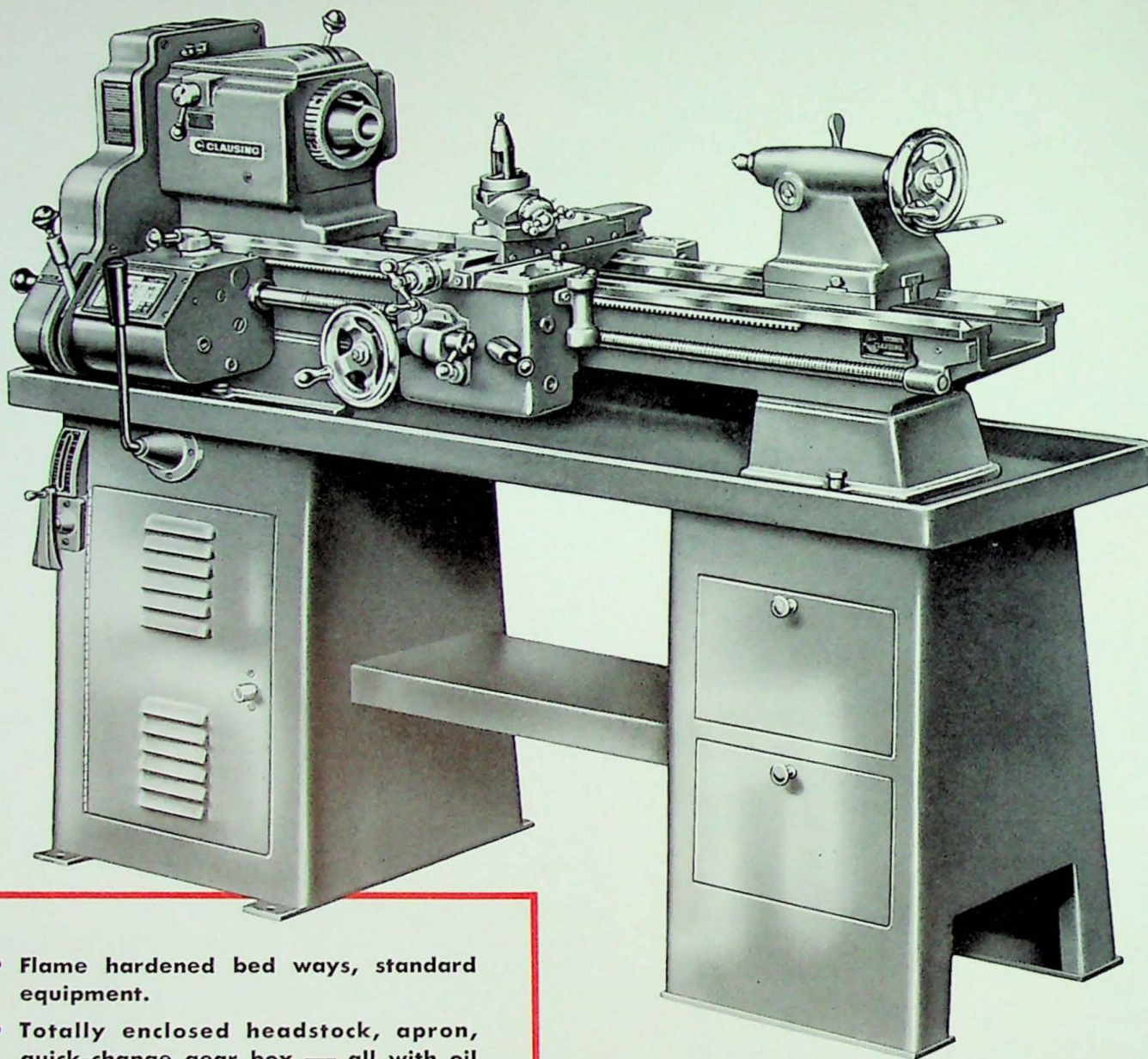
### CLUTCH AND BRAKE

Available with either variable or step pulley drives, clutch and brake mechanism permits instant starts and stops of spindle without stopping motor. Control lever is conveniently located on front of base. Clutch is multiple disc, dry operating, with heat-treated steel plates. Shifter has lubricated-for-life ball bearings.



**CLAUSING**

## 6300-series heavy-duty, precision lathes



- Flame hardened bed ways, standard equipment.
- Totally enclosed headstock, apron, quick-change gear box — all with oil bath lubrication.
- ASA — L-00 taper key-drive spindle nose — 1-3/8" bore, 1-1/16" collet capacity.
- Timken "Zero Precision" tapered roller bearings.
- Shaved gears.
- Variable speed or step-pulley countershaft drive, with clutch and brake optional.
- Outboard spindle-drive pulley.
- Accuracy verified by factory test report.

### LATHES with VARIABLE SPEED DRIVE

*Motor recommended: 1 or 1 1/2 HP, single speed.*

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
<b>6328</b>	12 3/4"	21 1/2"	47"	1045
<b>6329</b>	12 3/4"	33 1/2"	59"	1110
<b>6330</b>	12 3/4"	47"	72 1/2"	1225

## LATHES with VARIABLE SPEED DRIVE, CLUTCH and BRAKE

Motor recommended: 1 or 1½ HP, single speed.

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
6348	12¾"	21½"	47"	1055
6349	12¾"	33½"	59"	1120
6350	12¾"	47"	72½"	1235

## LATHES with STEP-PULLEY DRIVE

Motor recommended: 1 or 1½ HP single speed, 1½ HP 2-speed

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
6318	12¾"	21½"	47"	1090
6319	12¾"	33½"	59"	1140
6320	12¾"	47"	72½"	1250

## LATHES with STEP-PULLEY DRIVE, CLUTCH, BRAKE

Motor recommended: 1 or 1½ HP single speed, 1½ HP 2-speed

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
6338	12¾"	21½"	47"	1100
6339	12¾"	33½"	59"	1150
6340	12¾"	47"	72½"	1260

EQUIPMENT FURNISHED, all models: 3/16" steel-plate Pedestal Cabinet with chip pan. Countershaft mounted in cabinet. Headstock center, tailstock center, reducing sleeve, 6" dog-type face plate, wrenches, instruction book, test report.

Note: If motor is not ordered with lathe, indicate RPM of motor and diameter of motor shaft that will be used.

### Single-Speed Motors for all Clousing lathes

No.	Phase	HP	Volts	Cycle	RPM	Shaft	Wt.
2762	Single	1	115/230	60	1725	7/8"	57
2872	Single	1½	115/230	60	1725	7/8"	71
2862	Three	1	208/220/440	60*	1725	7/8"	53
2871	Three	1½	208/220/440	60*	1725	7/8"	55

\*Operate on 50 cycle at 1425 RPM.

### Two-Speed Constant Horsepower Motors for lathes with step-pulley drives, only

No.	Phase	HP	Volts	Cycle	RPM	Shaft	Wt.
2876	Three	1½	220	60	1800-900	1½"	110
2877	Three	1½	440	60	1800-900	1½"	110

Note: All motors listed operate satisfactorily on a 10% voltage variation. Other voltages and cycles available.

**No. 7618** PUSH BUTTON REVERSING SWITCH for one speed, single and three phase motors. A heavy-duty, double-throw switch that provides across-the-line starting, stopping and reversing. Mounting bracket and cable furnished. 7 lbs.

**No. 7639** REVERSING SWITCH for three phase, two-speed motors. A heavy-duty switch for starting, stopping, reversing and changing speed. Mounting bracket and cable furnished. 7 lbs.

Motor and reversing switch are installed and wired when ordered with lathe from factory.

# SPECIFICATIONS

## CAPACITIES

Swing over bed	12¾"
Swing over saddle wings	12¾"
Swing over cross slide	7¾"
Swing over compound rest	3¾"

## HEADSTOCK

Hole thru spindle	1⅜"
Maximum collet capacity — spindle nose type	1⅜"
Maximum collet capacity — lever type	1-1/16"
Maximum collet capacity — draw bar type	1"
Spindle nose	tapered key-type, ASA—L-00
Spindle nose internal taper	No. 4½ MT
Taper in spindle nose bushing	No. 3 MT
Size of center	No. 3 MT

## BED

Flame-hardened ways	2 V-ways, 2 flat ways
Width	7¾"
Depth	5⅛" deep; 47" centers lathe, 6" deep

## THREADS AND FEEDS

Thread range	4 to 224 Standard right or left
Longitudinal feeds	.00065" to .0367" (left or right) p.r.s.
Cross feeds	.00016" to .00917" p.r.s.
Lead screw	7/8" dia., 8 Acme threads per inch
Screw threads per inch	4, 4½, 5, 5½, 5¾, 6, 6½, 6¾, 7, 8, 9, 10, 11, 11½, 12, 13, 13½, 14, 16, 18, 20, 22, 23, 24, 26, 27, 28, 32, 36, 40, 44, 46, 48, 52, 54, 56, 64, 72, 80, 88, 92, 96, 104, 108, 112, 128, 144, 160, 176, 184, 192, 208, 216, 224

## SPINDLE SPEEDS

Variable drive with 1-speed motor	Range: infinite between 43 and 222 RPM in back gear drive and 250 to 1300 RPM in open drive.
Step pulley drive with 1-speed motor	10 speeds. Range: 30, 60, 90, 140, 225 in back gear; 180, 335, 540, 825, 1300 in direct drive.
Step pulley drive with 2-speed motor	18 speeds. Range: 15, 30, 45, 70, 90, 112, 140, 225 in back gear; 90, 167, 180, 270, 335, 415, 540, 650, 825, 1300 in direct drive.

## CROSS SLIDE AND COMPOUND

Cross slide travel	9⅛"
Cross feed screw	½" dia., 10 Acme threads per inch
Compound rest	graduated 0-90° left and right
Compound travel	2⅝"
Tool post	5/8" x 2" slot. Takes ½" bits or holder for 5/16" bits.

## TAILSTOCK

Spindle	No. 3 MT, with tang socket
Spindle travel	3"
Spindle diameter	1⅜"
Spindle graduated	0-3" by 1/16"
Tailstock set-over	1"

## MOTOR

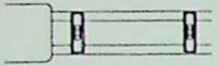
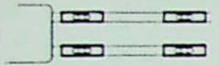
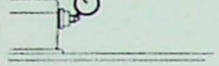
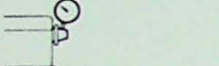
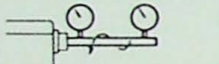
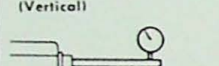
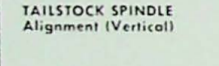
Recommended	1 or 1½ HP
NEMA frame sizes	66, 182, 184, 203, 204
Note: If motor is not ordered with lathe, indicate RPM of motor and diameter of motor shaft that will be used.	

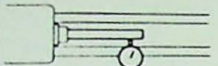
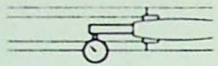
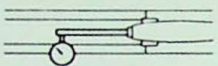
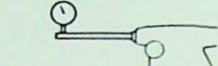
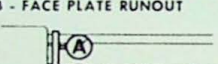
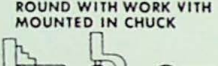
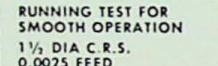
# TEST REPORT FOR CLAUSING LATHE

MODEL NO.

SERIAL NO.

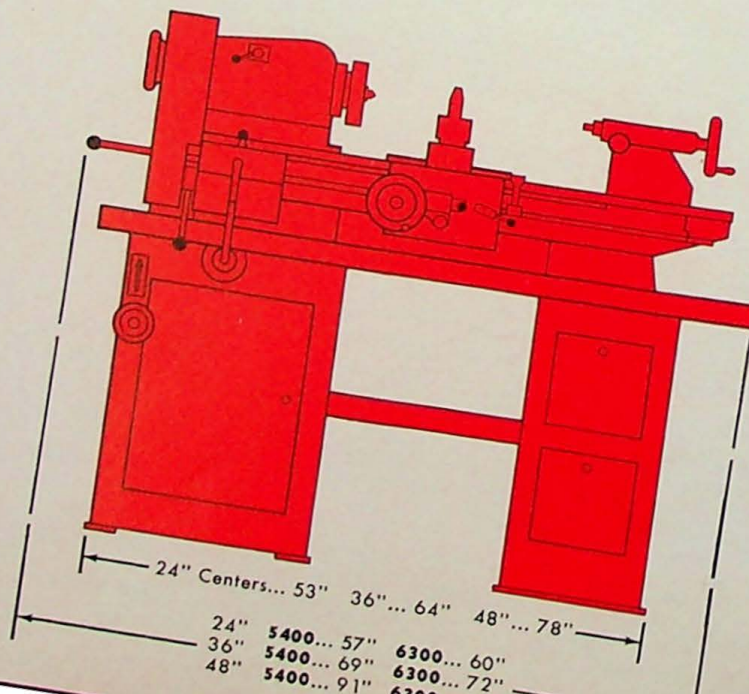
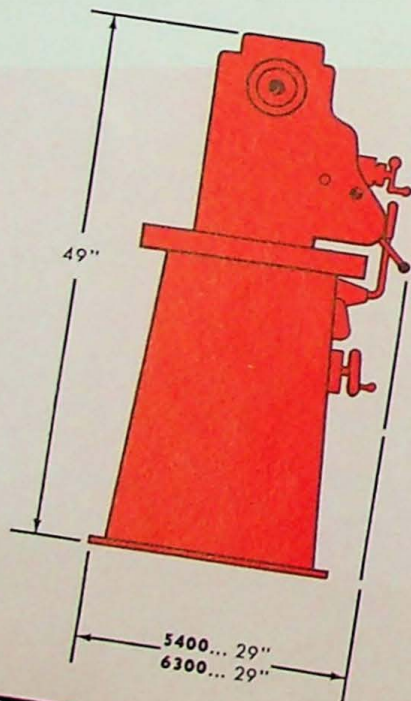
TESTED BY NO.

TEST	LIMIT	ACTUAL
<b>BED LEVEL (Transverse Direction)</b> 	When Using Precision Level All Readings to Be Within 0.0005 in 12 In.	
<b>BED LEVEL (Longitudinal Direction)</b> 	When Using Precision Level Along Bed Maximum Reading to Be Within 0.001 in 12 In.	
<b>SPINDLE CENTER RUNOUT</b> 	Total Indicator Reading 0 to 0.0008	
<b>SPINDLE NOSE RUNOUT</b> 	Total Indicator Reading 0 to 0.0003	
<b>SPINDLE TAPER RUNOUT</b> 	Total Indicator Reading at End of 12 In. Test Bar 0 to 0.0006 at End of Spindle Nose 0 to 0.0003	
<b>HEADSTOCK ALIGNMENT (Vertical)</b> 	High at End of 12 In. Test Bar 0 to 0.0005	
<b>TAILSTOCK SPINDLE ALIGNMENT (Vertical)</b> 	High at End of Spindle When Fully Extended 0 to 0.0008	
<b>INSPECTED BY _____ NO. _____</b> <b>DATE _____</b>		

TEST	LIMIT	ACTUAL
<b>HEADSTOCK ALIGNMENT (Horizontal)</b> 	At End of 12 In. Test Bar 0 to $\pm 0.0003$	
<b>TAILSTOCK SPINDLE ALIGNMENT (Horizontal)</b> 	Forward at End of Spindle When Fully Extended 0 to 0.0005	
<b>TAILSTOCK TAPER ALIGNMENT (Horizontal)</b> 	End of 12 In. Test Bar 0 to $\pm 0.0005$	
<b>TAILSTOCK TAPER ALIGNMENT (Vertical)</b> 	High at End of 12 In. Test Bar 0 to 0.001	
<b>A - CROSS SLIDE ALIGNMENT B - FACE PLATE RUNOUT</b> 	To Face Concave Only on 12 In. Diameter 0 to 0.001 On Face of Diameter 0 to 0.001	
<b>LATHE MUST TURN ROUND WITH WORK WITH MOUNTED IN CHUCK</b> 	0.0003	
<b>RUNNING TEST FOR SMOOTH OPERATION</b> 1 1/2 DIA C.R.S. 0.0025 FEED 0.125 DEPTH AT HIGH SPEED 	Lathe Must Take Cut Without Chatter	
<b>BACK LASH ON CROSS FEED SCREW</b>	0.004	

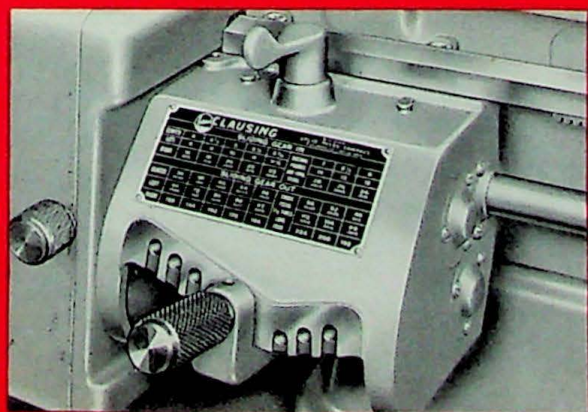
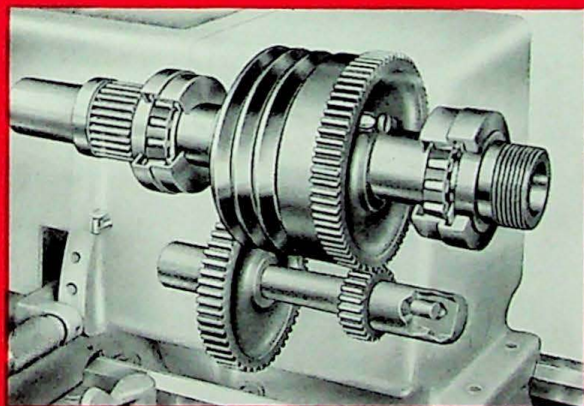
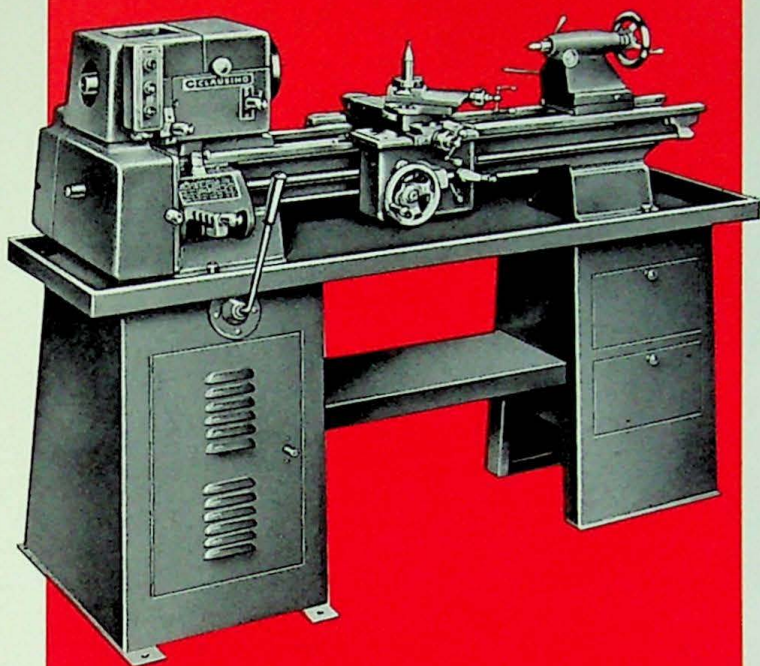
Each Clausung lathe must pass tolerance tests similar to those shown at left. Inspection after inspection, and test after test — at every stage of manufacture and assembly — assure that every lathe measures up to rigid specifications of construction and performance.

The test report that accompanies each lathe verifies its precision.



**CLAUSING**

## 5400-series 12" lathes



Clausing 5400-series lathes are fast, accurate, powerful, efficient — outstanding values for production, tool room, maintenance, school and commercial shops.

### PRECISION HEADSTOCK

Headstock has rigid box-type construction — maintains accurate alignments under all loads. Spindle is a steel forging, precision ground its entire length — has  $1\frac{3}{8}$ " bore, hardened nose with  $2\frac{1}{4}$ " - 8 ground threads. (L-00 taper key drive nose optional, extra.) Spindle turns on Timken "Zero Precision" tapered roller bearings held to a tolerance of .00015". Gears are shaved.

### EFFICIENT QUICK-CHANGE GEAR MECHANISM

Provides instant selection of 54 threads or feeds — twenty-seven obtained by shifting two levers on gear box, an additional twenty-seven by shifting a sliding gear. Gears are shaved — shafts are ground, turn on ball bearings.

### VARIABLE SPEED COUNTERSHAFT

Any speed from 35 to 270 and 210 to 1600 RPM is instantly available while lathe is running. Speeds are changed by turning handwheel on lathe cabinet. Chart shows speed selected. Power is transmitted to countershaft spindle thru 2 variable-speed cog belts — 3 V-belts power lathe spindle.

### STEP PULLEY COUNTERSHAFT

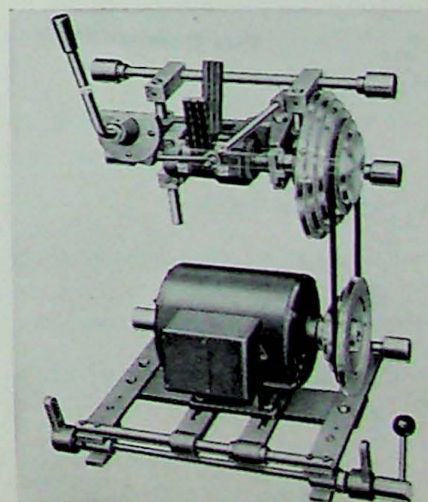
Provides 10 spindle speeds from 35 to 1600 RPM with one speed motor — five speeds direct, five back-geared. Two-speed motor, 20 spindle speeds from 17 to 1600 RPM. Power is transferred from motor to countershaft thru 5-step V-belt pulleys — shift lever slacks belt for speed changes. Three V-belts transfer power from countershaft to spindle.

Countershaft drives are built for smooth transmission of full power, and long service. Pulleys are machined and balanced — countershafts are ground — all bearings are lubricated-for-life.

### CLUTCH and BRAKE

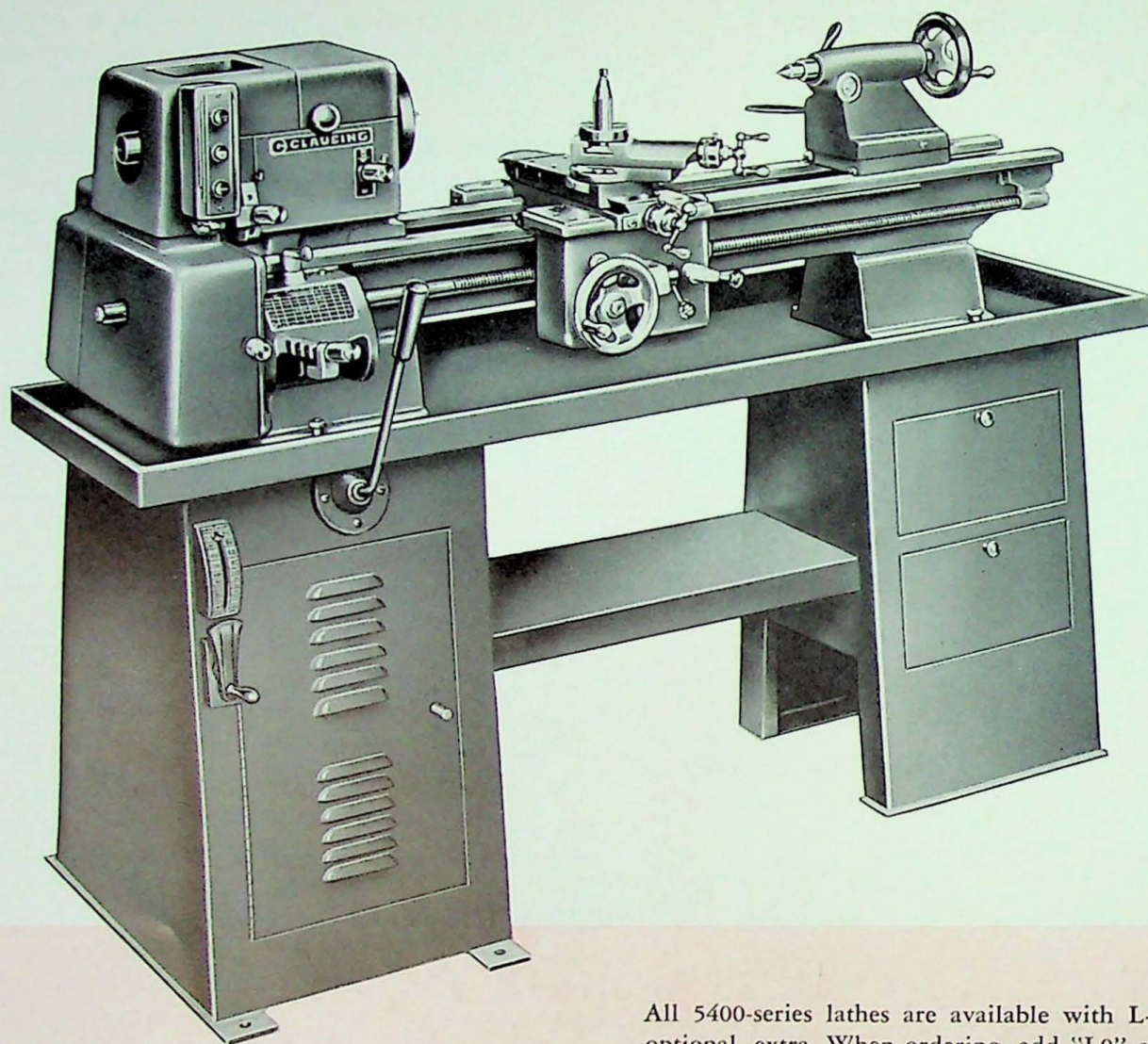
Optional equipment with both variable and step pulley drives. Clutch and brake, controlled by lever on lathe cabinet, permit instant starts and stops of spindle without stopping motor. Clutch is multiple disc, dry operating, with heat-treated steel plates. Shifter has lubricated-for-life ball bearings.

Flame hardened bed ways, automatic apron with oil bath lubrication, and other features contributing to Clausing's superior performance are described on page 2.





## 5400-series heavy-duty, precision lathes



- Flame hardened bed ways — standard at no extra cost.
- "Zero Precision" Timken tapered roller bearings.
- Forged steel spindle with 1-1/16" collet capacity, 1-3/8" bore, hardened nose.
- Shaved gears.
- Choice of two heavy duty drives — variable speed or step pulley countershaft — with clutch and brake optional.
- Totally enclosed apron with oil bath lubrication.
- Verified precision — factory test report accompanies each lathe.

All 5400-series lathes are available with L-00 spindle, optional, extra. When ordering, add "L0" after catalog number.

### LATHES with VARIABLE SPEED DRIVE

*Motor recommended: 1 or 1 1/2 HP, single-speed.*

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
5428	12 3/4"	23"	47"	1080
5429	12 3/4"	35"	59"	1140
5430	12 3/4"	48 1/2"	72 1/2"	1250

### LATHES with VARIABLE SPEED DRIVE, CLUTCH and BRAKE

*Motor recommended: 1 or 1 1/2 HP, single-speed.*

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
5448	12 3/4"	23"	47"	1090
5449	12 3/4"	35"	59"	1150
5450	12 3/4"	48 1/2"	72 1/2"	1260



## LATHES with STEP PULLEY DRIVE

Motor recommended: 1 or 1½ HP single-speed, or 1½ HP 2-speed.

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
5418	12¾"	23"	47"	1050
5419	12¾"	35"	59"	1110
5420	12¾"	48½"	72½"	1220

## LATHES with STEP PULLEY DRIVE, CLUTCH, BRAKE

Motor recommended: 1 or 1½ HP single-speed, or 1½ HP two-speed.

Catalog Number	Swing Over Bed	Between Centers	Bed Length	Shipping Weight
5438	12¾"	23"	47"	1060
5439	12¾"	35"	59"	1120
5440	12¾"	48½"	72½"	1230

EQUIPMENT FURNISHED, all models: 3/16" steel-plate Pedestal Cabinet with chip pan. Countershaft mounted in cabinet. Headstock center, tailstock center, reducing sleeve, 6" dog-type face plate, wrenches, instruction book, test report.

Note: If motor is not ordered with lathe, indicate RPM of motor and diameter of motor shaft that will be used.

### Single-Speed Motors for all Clousing lathes

No.	Phase	HP	Volts	Cycle	RPM	Shaft	Wt.
2762	Single	1	115/230	60	1725	7/8"	57
2872	Single	1½	115/230	60	1725	7/8"	71
2862	Three	1	208/220/440	60*	1725	7/8"	53
2871	Three	1½	208/220/440	60*	1725	7/8"	55

\*Operate on 50 cycle at 1425 RPM.

### Two-Speed Constant Horsepower Motors for lathes with step-pulley drives, only

No.	Phase	HP	Volts	Cycle	RPM	Shaft	Wt.
2876	Three	1½	220	60	1800/900	1 1/8"	110
2877	Three	1½	440	60	1800/900	1 1/8"	110

Note: All motors listed operate satisfactorily on a 10% voltage variation. Other voltages and cycles available.

### Reversing Switches

**No. 7614** PUSH-BUTTON REVERSING SWITCH for one speed, single and three phase motors. A heavy-duty, double-throw switch that provides across-the-line starting, stopping and reversing. Cord furnished. 4½ lbs.

**No. 7649** REVERSING SWITCH for two speed, three phase motors. A heavy-duty switch for starting, stopping, reversing and changing speed. Cord furnished. 4½ lbs.

Motor and reversing switch are mounted and wired when ordered with lathe from factory.

# SPECIFICATIONS

## CAPACITIES

Swing over bed	12¾"
Swing over saddle wings	12¾"
Swing over cross slide	7 5/8"
Swing over compound rest	3 3/8"

## HEADSTOCK

Hole thru spindle	1 3/8"
Maximum collet capacity—spindle nose type	1 3/8"
Maximum collet capacity—lever type	1 1/16"
Maximum collet capacity—draw bar type	1"
Spindle nose	2 1/4"-8 threads
(Note: ASA—L-00 taper key drive spindle optional, extra.)	

Spindle nose internal taper	No. 4½ MT
Taper in spindle nose bushing	No. 3 MT
Size of center	No. 3 MT

## BED

Flame hardened ways	2 V-ways, 2 flat ways
Width	7 3/8"
Depth	5 1/8" deep; 47" centers lathe, 6" deep

## THREADS AND FEEDS

Thread range	54, 4 to 224 Standard right or left
Longitudinal feeds	.00065" to .0367" (left or right) p.r.s.
Cross feeds	.00016" to .00917" p.r.s.
Lead screw	7/8" dia., 8 Acme threads per inch
Screw threads per inch	4, 4½, 5, 5½, 5¾, 6, 6½, 6¾, 7, 8, 9, 10, 11, 11½, 12, 13, 13½, 14, 16, 18, 20, 22, 23, 24, 26, 27, 28, 32, 36, 40, 44, 46, 48, 52, 54, 56, 64, 72, 80, 88, 92, 96, 104, 108, 112, 128, 144, 160, 176, 184, 192, 208, 216, 224.

## SPINDLE SPEEDS

Variable drive with 1-speed motor	Range: infinite between 35 and 270 RPM in back gear; 210 and 1600 RPM in open drive.
Step pulley drive with 1-speed motor	10 speeds. Range: 35, 65, 100, 160, 270, in back gear; 210, 375, 650, 995, 1600 RPM in direct drive.
Step pulley drive with 2-speed motor	20 speeds. Range: 17, 32, 35, 50, 65, 80, 100, 140, 160, 270 in back gear; 105, 187, 210, 325, 375, 497, 650, 800, 995, 1600 RPM in direct drive.

## CROSS SLIDE AND COMPOUND

Cross slide travel	9 1/8"
Cross feed screw	1/2" dia. 10 Acme threads per inch
Compound rest	graduated 0-90° left and right
Compound rest travel	2 5/8"
Tool post	5/8" x 2" slot. Takes 1/2" bits or holder for 5/16" bits.

## TAILSTOCK

Spindle	No. 3 MT, with tang socket
Spindle travel	3"
Spindle diameter	1 3/8"
Spindle graduated	0-3" by 1/16"
Tailstock set-over	1"

## MOTOR

Recommended	1 or 1½ HP
NEMA frame sizes	66, 182, 184, 203, 204

Note: if motor is not ordered with lathe, indicate RPM of motor and diameter of motor shaft that will be used.

# ACCESSORIES



**TOOL HOLDER SET**

**No. 7577 SET OF 9 TOOL HOLDERS**, in metal case. Drop-forged steel, accurately machined and heat-treated. Consists of the 9 tool holders listed below. Holders have  $\frac{1}{2}$ " x  $\frac{1}{8}$ " shank. 24 lbs.

## TOOL HOLDERS



Have  $\frac{1}{2}$ " x  $\frac{1}{8}$ " shank,  $\frac{5}{16}$ " bit, wrench.

**No. 7568 STRAIGHT SHANK TOOL HOLDER.** 2 lbs.

**No. 7569 R.H. OFFSET TOOL HOLDER.** 2 lbs.

**No. 7570 L.H. OFFSET TOOL HOLDER.** 2 lbs.



**CUT-OFF TOOL**

Have  $\frac{1}{2}$ " x  $\frac{1}{8}$ " shank. 5" ready-ground blade and wrench furnished.

**No. 7571 STRAIGHT SHANK CUT-OFF TOOL HOLDER.**

2 lbs.

**No. 7572 R.H. OFFSET CUT-OFF TOOL HOLDER.** 2 lbs.

**No. 7573 L.H. OFFSET CUT-OFF TOOL HOLDER.** 2 lbs.

## KNURLING TOOL



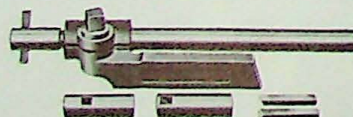
**No. 7576 KNURLING TOOL HOLDER**, with medium diameter-shaped knurls. Rollers are hardened, tempered. Shank is  $\frac{1}{2}$ " x  $\frac{1}{8}$ ". 2 lbs.



**THREADING TOOL**

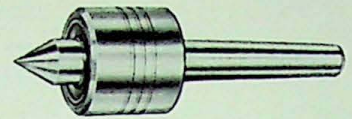
**No. 7575 THREADING TOOL HOLDER**, with bit and wrench. High speed cutter is ground to cut  $60^\circ$  threads. 2 lbs.

## BORING BAR HOLDER



**No. 7574 BORING BAR HOLDER**, with  $\frac{3}{4}$ " dia. sleeve-type boring bar, two  $\frac{1}{4}$ " high speed cutter bits—one  $45^\circ$  and one  $90^\circ$ , and two wrenches. Drop-forged steel. Boring bar takes  $\frac{1}{4}$ " bits — can be set straight or at  $45^\circ$ . Takes bars  $\frac{1}{4}$ " to  $\frac{3}{4}$ " dia. 4 lbs.

## BALL BEARING CENTER



**No. 7698 BALL BEARING CENTER** with No. 3 MT shank. Free turning, highly accurate. Bearings are grease packed, preloaded and sealed.  $1\frac{1}{2}$  lbs.



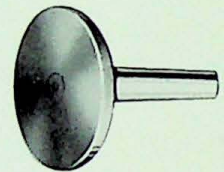
**$60^\circ$  CENTER**

**No. 7659  $60^\circ$  CENTER** with No. 3 MT shank. 8 oz.

## No. 2 to No. 3 TANG SLEEVE

**No. 7697 TANG SLEEVE** required to adapt No. 2 MT centers, drill pad, crotch center and pipe centers listed below to No. 3 MT tailstock. 1 lb.

## DRILL PAD



**No. 360 DRILL PAD.** Mounts in tailstock ram as rigid brace for drilling flat or square work with drill in headstock.  $3\frac{1}{8}$ " diameter face. No. 2 MT shank. No. 7697 sleeve required for No. 3 MT tailstock.  $1\frac{1}{2}$  lbs.

## CROTCH CENTER



**No. 356 CROTCH CENTER.** V-slot carefully machined. 2" diameter. 1" slot. No. 2 MT shank. No. 7697 sleeve required for No. 3 MT tailstock. 1 lb.

## PIPE CENTERS

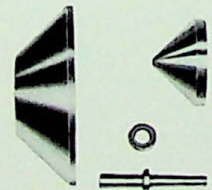
Support pipe in tailstock for machining and threading.

**No. 755 SET OF PIPE CENTERS.** Includes: cone listed below, tailstock arbor and thrust bearing. No. 7697 sleeve required for No. 3 MT tailstock.

**No. 756 PIPE CENTERING CONE.** Capacity  $\frac{1}{4}$ " to 4". 3 lbs.

**No. 758A TAILSTOCK ARBOR and THRUST BEARING.** No. 2 MT shank. 2 lbs.

**No. 7697 SLEEVE** required for No. 3 MT tailstock. 2 lbs.

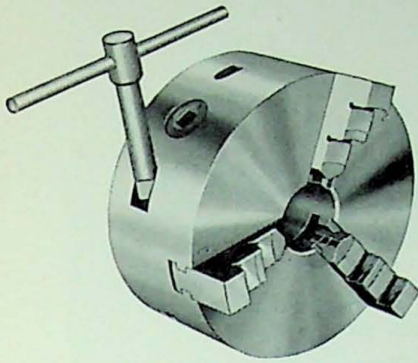


## LATHE DOGS

No.	Opening	Wt.
7543	$\frac{1}{2}$ "	1 lb.
7544	$\frac{3}{4}$ "	1 lb.
7545	1"	1 lb.
7546	$1\frac{1}{2}$ "	2 lbs.



# ACCESSORIES



## 3 and 6 JAW GRIPTRU UNIVERSAL CHUCKS

GRIPTRU chucks have micro-adjusting mechanism that permits *chucking concentric within .0002" total indicator reading.* Once initial work piece

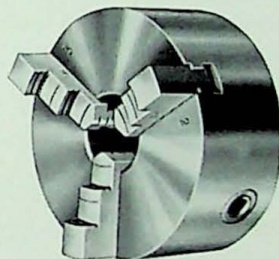
is centered to desired tolerance, duplicate parts can be chucked to same accuracy at scroll chuck speed.

Bodies are Meehanite, scrolls are machined from heat-treated alloy steel, pinions and jaws are case-hardened. Furnished with two sets of solid jaws (inside and outside) and wrench. Mount directly on lathe spindle nose.

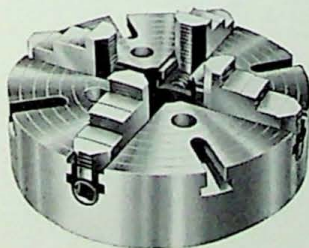
No.	Size	Jaws	For Spindle	Lbs.
7742	6"	6	2 1/4"-8	25
7743	6"	6	L-00	25
7740	6"	3	2 1/4"-8	21
7741	6"	3	L-00	23

## 3-JAW UNIVERSAL CHUCKS

Bodies are Meehanite. Scrolls are machined from heat-treated alloy steel. Pinions—three in each chuck—are case hardened. Jaws are case-hardened—bearing and gripping surfaces are ground. Furnished with one inside and one outside set of solid jaws, or with master jaws and reversible hard tops, as indicated.



No.	Size	Jaws	For Spindle	Lbs.
7736	6"	solid	2 1/4"-8	22
7737	6"	solid	L-00	25
7738	6"	2-piece	2 1/4"-8	21
7739	6"	2-piece	L-00	23



## 4-JAW INDEPENDENT CHUCKS

Have rugged Meehanite bodies, large case-hardened ground steel jaws, large-diameter operating screws. Mount directly on lathe spindle. Jaws are reversible. Wrench furnished.

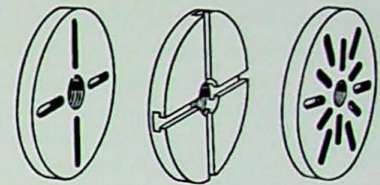
No.	Size	For Spindle	Lbs.
7731	8"	2 1/4"-8	26
7733	10"	2 1/4"-8	33
7732	8"	L-00	26
7734	10"	L-00	33

## SEMI-MACHINED CHUCK MOUNTING PLATES

Hole is accurately machined to fit spindle nose. Face and O.D. are semi-machined to allow proper fitting to chuck.

No.	Dia.	For Spindle	Lb.	No.	Dia.	For Spindle	Lb.
7626	6"	2 1/4"-8	5	7624	8"	L-00	9
7627	8"	2 1/4"-8	9	7625	10"	L-00	12
7628	10"	2 1/4"-8	12				

## FACE PLATES



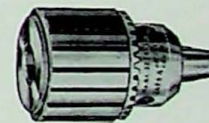
Dog

T-Slot

Slotted

Finish machined ready to mount on spindle nose. For holding odd shaped work or angle plate. T-slot face plates have slots for 1/2" T bolts. Dog drive and slotted face plates have 17/32" slots.

No.	Dia.	Type	Slots	Spindle	Lb.
7524	10"	Slotted	12	1 1/2"-8	10
7675	10"	Dog	4	2 1/4"-8	10
7678	10"	T-Slot	4	2 1/4"-8	16
7549	10"	Dog	2	L-00	10
7548	10"	T-Slot	4	L-00	16



## DRILL CHUCKS

**No. 1897** DRILL CHUCK, capacity 3/16" drill to 3/4", with key-type wrench. Adapted to headstock and tailstock spindles with No. 1898 arbor (below). 3 1/2 lbs.

**No. 40-60** DRILL CHUCK, capacity No. 70 drill to 1/2", with key-type wrench. Adapted to headstock and tailstock spindles with No. 7696 arbor (below). 2 lbs.

**No. 1898** ARBOR to adapt No. 1897 chuck to No. 3 MT lathe headstock or tailstock. 13 oz.

**No. 7696** ARBOR to adapt No. 40-60 chuck to No. 3 MT lathe headstock or tailstock. 13 oz.



## CENTER REST CHUCK

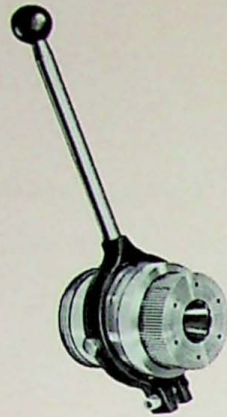
**No. 445** JACOBS CENTER REST CHUCK, capacity 1/4" to 3/4". Has bronze jaws for supporting centerless shafts in lathe tailstock. No. 1898 or No. 377 arbor required. 3 lbs.

**No. 1898** ARBOR to adapt 445 chuck to No. 3 MT tailstock. 13 oz.

**No. 377** ARBOR to adapt 445 chuck to No. 2 MT tailstock. 8 oz.

## LEVER OPERATED DEAD-LENGTH MULTISIZE COLLET CHUCKS

For rapid production chucking of precision work with Multisize Collets. Handles bar stock up to  $1\frac{3}{8}$ " thru lathe spindle and second-operation work to  $1\frac{1}{2}$ " dia. — providing dead-length gripping action, with instantaneous release of work piece. Work may be chucked, machined and released without stopping lathe. Collet tension instantly adjustable from heaviest to lightest grip.



**No. 7745** LEVER OPERATED DEAD-LENGTH COLLET CHUCK for direct mounting to Clausen lathes with L-00 spindle. Takes Multisize MC Collets. 24 lbs.

**No. 7746** LEVER OPERATED DEAD-LENGTH COLLET CHUCK with adapter for mounting to Clausen lathes with  $2\frac{1}{4}$ "-8 threaded spindle. Adapter machined to fit spindle nose — face and O.D. are semi-machined to allow proper fitting to chuck. Adapter is fitted when ordered with lathe from factory. Takes Multisize MC Collets. 29 lbs.



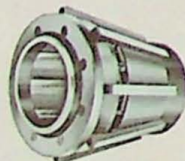
## KEY OPERATED MULTISIZE COLLET CHUCK

Provides an accurate and powerful closing mechanism for Multisize Collets. Key operation thru bevel gears assures complete sensitivity for any desired gripping pressure. Handles bar stock up to  $1\frac{3}{8}$ " thru lathe spindle and second operation work up to  $1\frac{1}{2}$ " diameter.

**No. KC15/L00** KEY OPERATED COLLET CHUCK for direct mounting to L-00 taper key drive spindle nose. Takes Multisize MC Collets. 19 lbs.

**No. 7747** KEY OPERATED COLLET CHUCK with adapter for mounting to lathes with  $2\frac{1}{4}$ "-8 threaded spindle. Adapter machined to fit spindle nose — face and O.D. semi-machined to allow proper fitting to chuck. Adapter is fitted when ordered with lathe from factory. Takes Multisize MC Collets. 24 lbs.

**No. ES15** END STOP. A positive, adjustable work stop for use with No. KC15/L00 and 7747 chucks. 2 lb.



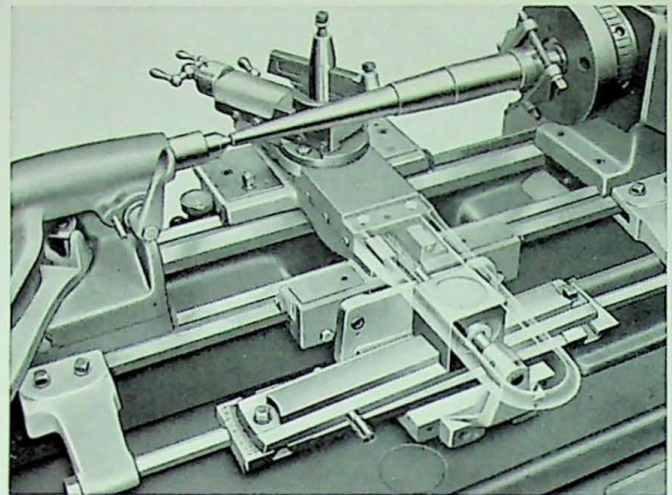
## MULTISIZE COLLETS

Each Multisize has a stepless gripping range of  $\frac{1}{8}$ " — 10 will replace at least 100 ordinary collets.

Multisize collets improve accuracy — their precision construction, with .0005" maximum eccentricity at collet nose, gives accuracy unobtainable with standard spring collets.

Greater gripping power — accurately ground blades, set radially in the tapered body, grip work along their entire length. Grip is infinitely variable — soft and thin-walled materials are chucked without damage or distortion.

Longer service life — Multisize collets are steel throughout for lasting accuracy.



## TELESCOPIC TAPER ATTACHMENT

Has telescoping cross feed screw that eliminates the necessity of disengaging cross feed for taper operations—permits regular hand feed to be used to bring tool to required work diameter. Takes but seconds to change from straight to taper work.

Taper attachment screw turns on two, pre-loaded, lubricated-for-life ball bearings in taper slide. This feature, plus rugged construction, assures dependable accuracy and long service life.

Taper is set by loosening clamp screws at each end of slide and turning vernier adjusting screw.

Cuts external or internal tapers up to 10" long at one setting — resets along bed for longer work. Two easy-to-read sets of graduations — one shows degrees of taper, the other inches per foot. Range  $10^\circ$  both sides of center line ( $20^\circ$  included angle) and 4" per foot. When ordered with lathe, taper attachment is installed at factory.

**No. 7699** TELESCOPIC TAPER ATTACHMENT for Clausen 12" lathes. 49 lbs.

### For Round Stock

No.	Capacity	Wt.Lb.	No.	Capacity	Wt.Lb.
MC2	$1/16$ "- $3/16$ "	3	MC8	$3/4$ "- $7/8$ "	3
MC3	$1/8$ "- $1/4$ "	3	MC9	$7/8$ "-1"	3
MC4	$1/4$ "- $3/8$ "	3	MC10	1"- $1\frac{1}{8}$ "	3
MC5	$3/8$ "- $1/2$ "	3	MC11	$1\frac{1}{8}$ "- $1\frac{1}{4}$ "	2
MC6	$1/2$ "- $5/8$ "	3	MC12	$1\frac{1}{4}$ "- $1\frac{3}{8}$ "	2
MC7	$5/8$ "- $3/4$ "	3	MC13	$1\frac{3}{8}$ "- $1\frac{1}{2}$ "	2

**No. MC14** SET of 11 MULTISIZE COLLETS, in metal case. Consists of collets Nos. MC3 thru MC13, listed above. 35 lbs.

### For Square Stock

No.	Capacity	Wt.Lb.	No.	Capacity	Wt.Lb.
MC53	$1/8$ "- $1/4$ "	3	MC57	$5/8$ "- $3/4$ "	3
MC54	$1/4$ "- $3/8$ "	3	MC58	$3/4$ "- $7/8$ "	2
MC55	$3/8$ "- $1/2$ "	3	MC59	$7/8$ "-1"	2
MC56	$1/2$ "- $5/8$ "	3			

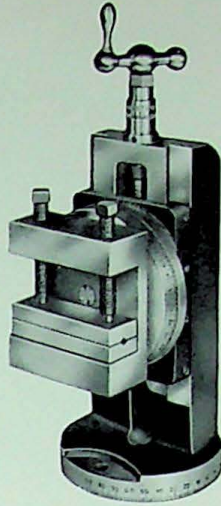
### For Hex Stock

No.	Capacity	Wt.Lb.	No.	Capacity	Wt.Lb.
MC83	$1/8$ "- $1/4$ "	3	MC88	$3/4$ "- $7/8$ "	3
MC84	$1/4$ "- $3/8$ "	3	MC89	$7/8$ "-1"	2
MC85	$3/8$ "- $1/2$ "	3	MC90	1"- $1\frac{1}{8}$ "	2
MC86	$1/2$ "- $5/8$ "	3	MC91	$1\frac{1}{8}$ "- $1\frac{1}{4}$ "	2
MC87	$5/8$ "- $3/4$ "	3			

## MILLING ATTACHMENT

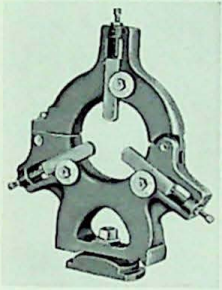
**No. 7525 MILLING ATTACHMENT.** Equips lathe for face milling, cutting key ways and slots, milling dovetails, squaring shafts, making dies and moulds, etc. Quickly and easily installed by removing compound rest and clamping base of milling attachment in its place.

Holds work at any angle—base is graduated 90° right and left of center. Position of vise is controlled by a feed screw with micrometer graduated collar. Base of vise is graduated through a full circle and vise can be swiveled to any angle. Slide dovetail ways have gib take-up. Two V-blocks furnished. 17 lbs.



### SPECIFICATIONS

Vertical Feed .....3"      Vise Depth .....1"  
Vise Capacity .....2"      Jaw Width .....3"

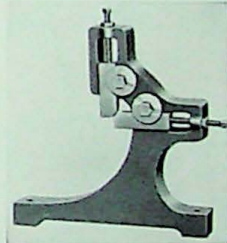


## STEADY REST

**No. 7661 STEADY REST.** Provides a rigid support for accurately machining long pieces and for end turning. Clamps to bed ways. Top is hinged. Jaws adjust easily — handle work 3/16" to 3 1/2" in dia. 17 lbs.

## FOLLOWER REST

**No. 7662 FOLLOWER REST.** Insures accurate work on long slender rods. Quickly mounted on top of carriage saddle — follows cutting tool, holding work in rigid position. 9 lbs.

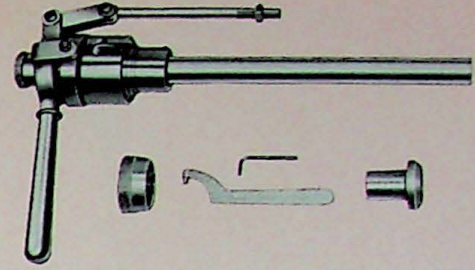
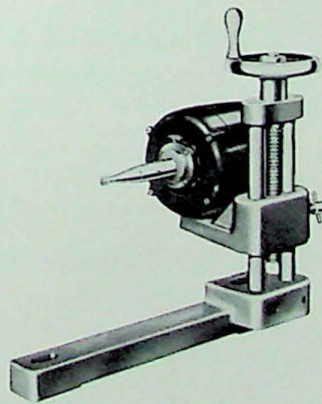


## MICA UNDERCUTTER

For servicing armatures. Attaches to top of carriage saddle. Saw is fed through mica by turning lathe carriage handwheel. Height of cutter arbor is adjusted by elevation screw. Saw arbor is driven by a 105-130V, AC-DC, 25-60C motor. Handles armatures up to 6" in diameter.

**No. 7516 MICA UNDERCUTTING ATTACHMENT.** Motor has extension cord, switch, and plug. Furnished: Set of 5 high speed undercutting saws (.015", .020", .025", .030" and .035"). 10 lbs.

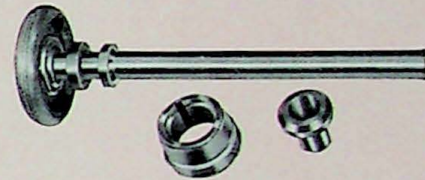
**No. 7520 SET OF 10 HIGH SPEED SAWS** for No. 7516 undercutter (2 each of the following thickness: .015", .020", .025", .030", and .035"). 2 oz.



## LEVER-TYPE BALL BEARING COLLET CHUCK

Ideal chucking method for fast, accurate duplicate work on bar stock. Work is fed through hollow torque tube of lever-type attachment, chucked, machined and released *without stopping the lathe*. Large lubricated-for-life ball bearing absorbs thrust, assures smoothness, accuracy. Collet tension is easily adjusted with knurled collar at end of torque tube. Tube and tapered collet sleeve are ground. Furnished with tapered sleeve, spindle nose cap, spanner wrench. Collet capacity: 1/16" to 1-1/16".

No.	For Lathe Series	For Spindle	Use Collets	Wt. Lbs.
7725	5400	2 1/4"-8	No. 7566 (5C)	17
7709	5400	L-00	No. 7566 (5C)	15
7726	6300	L-00	No. 7566 (5C)	17



## DRAW-IN COLLET CHUCK

For chucking of bar stock whenever extreme accuracy is demanded.

Hollow construction permits rods to be passed through lathe spindle — handwheel releases and tightens collet on work. Tapered sleeve is ground inside and outside. Lathe must be stopped to open and close collet. Includes draw-in spindle, tapered closing sleeve, wrench and spindle nose cap, less collet.

No.	For Lathe Series	For Spindle	Use Collets	Wt. Lbs.
7676	5400	2 1/4"-8	No. 7566 (5C)	7
7679	5400	L-00	No. 7566 (5C)	10
7630	6300	L-00	No. 7566 (5C)	10



**No. 5C**

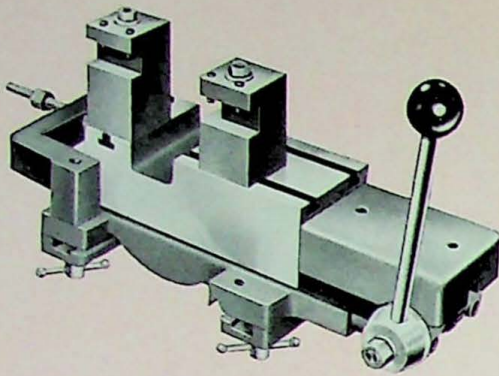
## ROUND COLLETS

**No. 7566 No. 5C ROUND COLLET.** Available from 1/8" to 1-1/16". Specify diameter. 1 lb. each.



## COLLET RACK

**No. 7658 COLLET RACK** for Clausing lathes. A convenient holder for 5C collets, centers, wrenches, sleeves and draw-in collet chuck. Clamps to lathe bed ways. 20 lbs.



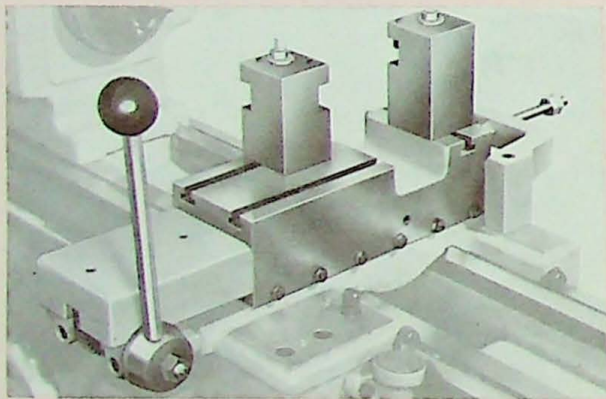
### DOUBLE TOOL CROSS SLIDE FOR BED MOUNTING

Clamps to lathe bed ways — a convenient, efficient attachment for forming, facing and cutting-off of duplicate parts. Quickly installed or removed — turning four clamp screws anchors rest in place or releases it for positioning or removal.

Tool support base is precision ground. Dovetail ways of base and saddle are accurately machined and fitted, have gib adjustment. Positive adjustable stops control depth of cut. Feed lever may be used on either side.

Travel,  $2\frac{3}{4}$ "; forward tool post has 2 slots, rear tool post 1 — take  $\frac{3}{8}$ " or  $\frac{1}{2}$ " bits.

**No. 7716** DOUBLE TOOL CROSS SLIDE for bed mounting. Furnished with forward tool post, rear tool post, feed lever. 76 lbs.



### DOUBLE TOOL CROSS SLIDE FOR CARRIAGE MOUNTING

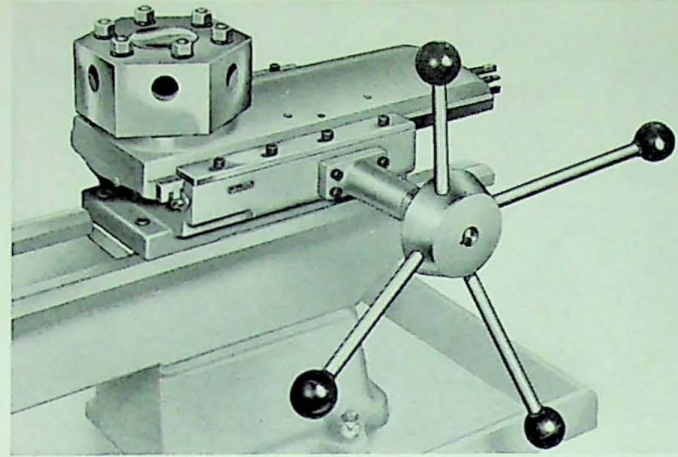
Provides two-way, front and rear tool post operations that save time on such operations as turning, forming, facing and cutting-off of duplicate parts. Mounts in place of carriage cross slide.

May be installed for lever feed, ball-crank, or power feed. Forward tool post has two slots for  $\frac{3}{8}$ " or  $\frac{1}{2}$ " cutter bits — may be used for facing or turning. Rear tool post holds one  $\frac{3}{8}$ " or  $\frac{1}{2}$ " cutter bit. Positive adjustable stop screws set depth of cut.

**No. 7717** DOUBLE TOOL CROSS SLIDE for carriage mounting. Forward tool post, rear tool post and cross slide assembly with feed lever are furnished. 38 lbs.

**No. 7633** REAR TOOL POST. Same as furnished with Nos. 7717 and 7716 (above). 5 lbs.

**No. 7634** SINGLE FORWARD TOOL POST. For use with Nos. 7717 and 7716.  $4\frac{1}{2}$  lbs.



### TIMKEN BEARING EQUIPPED PRECISION BED TURRET

Provides six tool stations for rapid and accurate machining of duplicate parts. Head indexes clockwise  $\frac{1}{6}$  of a turn with each complete back movement of handwheel, *locks automatically, turns on Timken tapered roller bearing* for accuracy and rigidity.

The  $6\frac{1}{2}$ " working travel, 4" tool clearance over ram and  $2\frac{1}{2}$ " minimum working stroke give unmatched versatility. The extra weight of base, ram and head provides the rigidity for taking heavy cuts. And for long work, stock up to  $\frac{3}{4}$ " can be passed thru turret head.

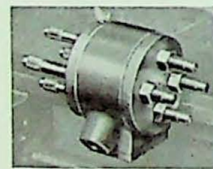
Bed and ram are heavy grey-iron castings. Ways are precision ground — both sides are gibbed for take-up. Tapered gibs are Meehanite.

Number of tool positions, 6. Turret head,  $5\frac{5}{8}$ " hex. Recommended tool hole diameter, 1". Ram length  $16\frac{3}{4}$ ".

**No. 7713** BED TURRET for Clausing  $12\frac{3}{4}$ " lathes, with head rough bored to  $\frac{7}{8}$ ". (Head must be finish bored on lathe with which it is to be used.) 135 lbs.

**No. 7712** BED TURRET with head finish bored for 1" tool shanks when ordered with lathe from factory. 135 lbs.

### 4-POSITION CARRIAGE STOP



**No. 7579** 4-POSITION CARRIAGE STOP with mounting bracket and four adjustable stop screws. For accurately gauging length of cut — simplifies repetitive operations. Fast, accurate indexing is provided by four steel balls under spring tension. Mounts on front bed way. 4 lbs.

### MICRO CARRIAGE STOP

**No. 7588** MICRO CARRIAGE STOP. Simplifies duplicate work on turning, boring, facing. Clamps on front bed way. Will not automatically stop carriage. Micrometer control graduated in .001 inch — hardened stop locks securely in any position.  $2\frac{1}{2}$  lbs.



### THREAD CUTTING STOP

**No. 7529** THREAD CUTTING STOP. Sets depth of cut for threading and other duplicate turning operations. Clamps to cross slide dovetail. Will not automatically stop cross feed. 2 lbs.



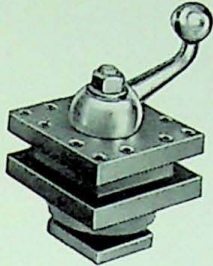
### STANDARD CARRIAGE STOP



**No. 7526** STANDARD CARRIAGE STOP. For repetitive turning, boring or facing jobs. Clamps on front bed way — will not automatically stop carriage. 2 lbs.

## TOOL POST TURRETS

**No. 7711 TURRET** for Double Tool Cross Slide. Has screw locking lever, 12 working positions — indexes to within plus or minus .0005". 3½" square head takes four ½" cutter bits, not furnished. 11 lbs.

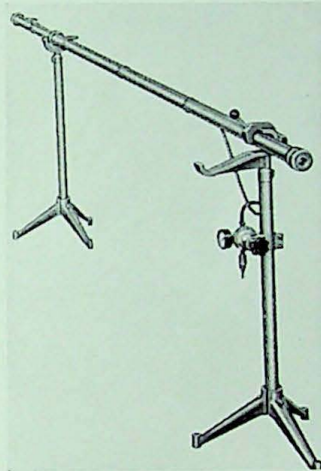


**No. 7578 TURRET.** Mounts on compound rest. Holds four ½" cutter bits. A turn of the handle swings tool in position — positive indexing assured by four steel balls under spring tension. 3½" square head. Less bits. 7¼ lbs.

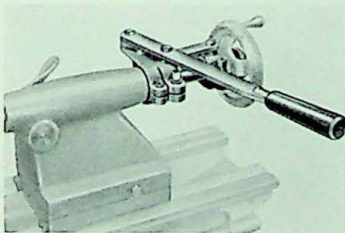
## AIR OPERATED BAR FEED

**No. 7722 AIR OPERATED BAR FEED.** Automatically feeds round, square or hex bar stock into lathes or other machine tools having a fixed stop for determining length of work piece. Feed piston has cup center for supporting free end of stock, forward end has removable brass bushing. Furnished with pressure regulator, gauge, feed piston, bushing for ¾" stock, in-feed valve and hose connector, two adjustable stands. 155 lbs.

**SPECIFICATIONS:** Max. stock capacity — 1-3/8" dia., 12' long; 13' tube; center height . . . 40-5/8" to 44-3/8"; air pressure required, 2-5 lbs.



## HANDLEVER TAILSTOCK ATTACHMENT



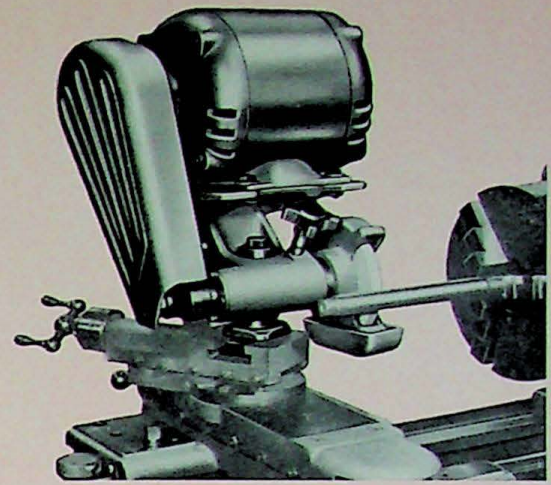
**No. 7619 HANDLEVER TAILSTOCK ATTACHMENT.** Converts regular tailstock for production drilling, reaming, tapping or centering operations. May be set for repeat operations to any depth up to 3". Does not interfere with normal use of tailstock — spindle may be moved by handlever or handwheel.

For all 5300 and 5400 series lathes; all 6300 series lathes, serial No. 2-3030 and above.

## OTHER CLAUSING PLUS VALUE MACHINE TOOLS

For information about other Clausing *plus-value* lathes, drills and vertical mills, ask for the following catalog numbers:

Machine Tool	Catalog No.
turret lathes .....	1636
tracer lathes .....	2936
high-speed lathes .....	9055
high-speed lathes w/hydraulic feeds .....	1355
vertical mills .....	1258
15-inch drills .....	1161
20-inch drills .....	1222
multiple spindle drills .....	1332



## TOOL POST GRINDER

The 7651 has the extra weight, strength and power for heavy jobs, plus the accuracy and all-round efficiency required to handle the finest internal and external grinding operations on a production basis. Ideal for grinding tools, dies, gauges, bushings, bearings, shafts, valves, valve seats, etc.

Mounts in tool post slide of lathe compound rest. Coordinate-type clamp locks grinder securely in any vertical or radial position. Vertical position is adjusted by raising screw with knob control.

Has two lubricated-for-life ball bearings. Heavy-duty spindle is 5/8" diameter, accurately ground. Spindle takes 4" external wheel with 7/16" hole, and has socket machined to take taper and screw of quill for holding internal grinding wheels. External wheel is enclosed by iron guard, easily removed for mounting internal quill.

Powered by a ¼ HP 3450 RPM ball bearing motor — operates on 115 volt 60 cycle AC. Two-step balanced pulleys provide grinding spindle speeds of 4900 and 9100 RPM at full load. Belt is covered by safety guard. Note: Grinding operations require reversing lathe spindle.

**No. 7651 HEAVY-DUTY GRINDER** for Clausing 12" lathes. Equipped with belt and 4" dia. external grinding wheel mounted on spindle, quill for internal work, ½" internal grinding wheel, diamond wheel dresser. Motor has switch, cord and plug. 60 lb.

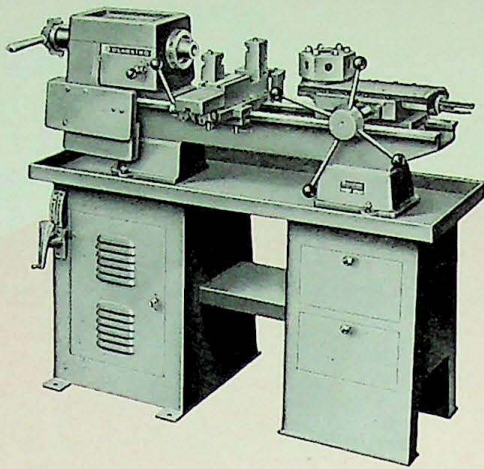
## SPECIFICATIONS

Grinds External Diameters up to.....4¼"  
 Grinds Internal Diameters from.....¼" to 9¼"  
 Internal Wheels Grind to depth of.....2⅜"  
 Base Swivels for Angular Grinding.....0 to 90°  
 Spindle Speeds.....4900 and 9100 RPM, full load  
 Motor operates on 115V, 60C, AC. Other motors available on request.

## GRINDING WHEELS

Medium grit. No. 10-475 external wheel mounted on spindle and No. 477-½ internal wheel are furnished as standard equipment with the 7651 lathe grinder.

No.		Dia.	Wt.
10-475	External Wheel for Steel, 3/8" thick	4"	1 lb.
10-476	External Wheel for Cast Iron, 3/8" thick	4"	1 lb.
477-¼	Internal Wheel	¼"	2 oz.
477-½	Internal Wheel Grind to	½"	3 oz.
477-¾	Internal Wheel Depth of 2⅜"	¾"	3 oz.
477-1	Internal Wheel	1"	3 oz.



**HIGH SPEED and  
STANDARD TURRET LATHES**

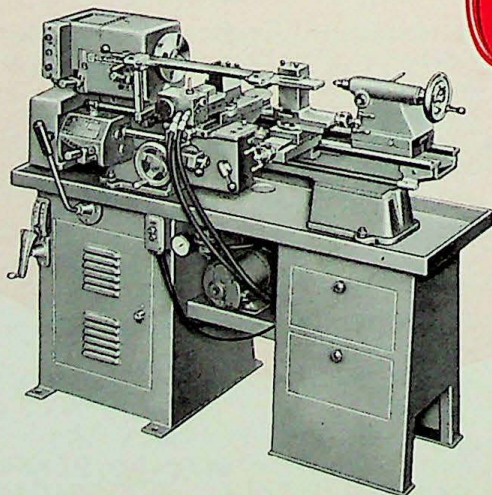
Ask for catalogs  
9055 and 1636

Clausing lathes, drills and mills are the achievement of fifty years' experience in the manufacture of precision machine tools.

Their reputation for superior performance and value is the result of this experience, and of the high standards to which they are built.

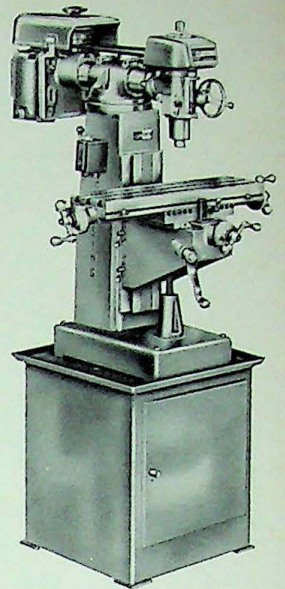
Clausing machine tools are guaranteed to equal or exceed the standards of accuracy as represented.

They are guaranteed against defects in material and workmanship for a period of one year, subject to standard warranty procedure. Design and construction are subject to modification and improvement without notice.



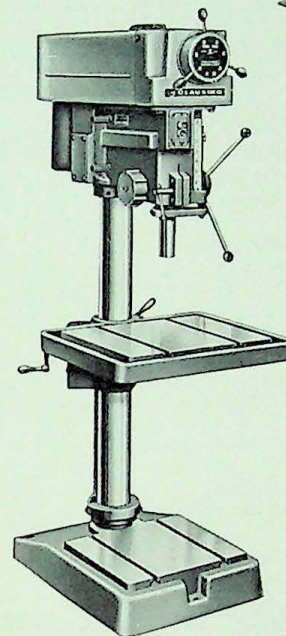
**TRACER LATHES**

Send for Catalog 2936



**VERTICAL  
MILLING  
MACHINES**

Catalog 1258

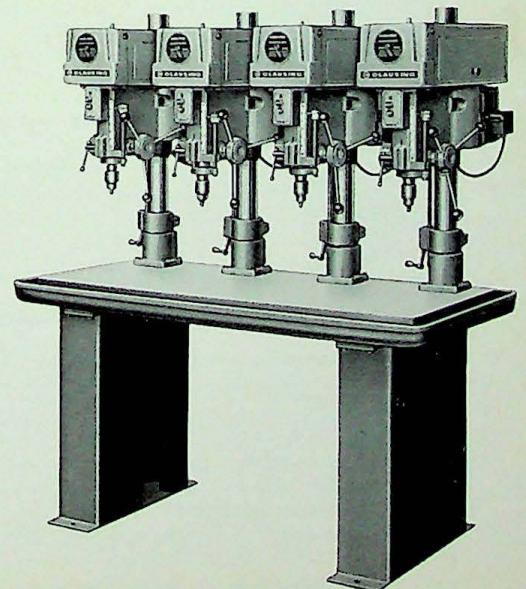


**20" and 15"  
SINGLE SPINDLE  
DRILLS**

Catalogs  
1222 and 1161

**20" and 15"  
MULTIPLE SPINDLE  
DRILLS**

Catalog 1332



**DIV. ATLAS PRESS CO., KALAMAZOO, MICH.**

861M20

Printed in U.S.A.