

SHELDON Vernon



SHELDON VERNON 12" BACKGEARED SHAPER

Specifications

Maximum length of ram stroke	12 1/2"
Length of ram bearing	30 1/2"
Ram bearing width	7 1/4"
Strokes per minute—Minimum	12
Maximum	180
Vertical travel of head	4"
Diameter of head	6 1/2"
Vertical travel of table	7"
Top dimensions of table	10" x 12"
Height of table	10"
Cross feed of table (with not less than 6 automatic feeds in either direction)	12"
Range of feeds	.0025" to .0175"
Width of vise jaws	7"
Depth of vise jaws	1 1/2"
Opening of jaws	4"
Floor space	27" x 44 1/4"
Maximum width:	31"
Maximum length:	51"

Net weight 1550 lbs.
When packed, Approx. 1800 lbs.

Export outside dimensions
62" x 62" x 38"-84 1/2" cu. ft.

Standard equipment—(included with all Shapers)

- 2 Wrenches
- Crank Handle
- Stationary Table
- Vise
- Tool Post

Extra Equipment (not included in regular price)

- Swivel Table
 - Start and Stop Switch
 - #40 Shaper Tool
 - #47 Extension Shaper Tool
- Motor { 1 1/2-HP—220/440-volts—
60 cycle—3-phase
1 1/2-HP—110/220-volts—
60 cycle—1-phase

ACCESSORIES



SHAPER VISE



No. 47 Extension
Shaper Tool



No. 40 Shaper
Tool

"BIG SHAPER" ACCURACY and FEATURES

SHAPER TABLE AND CROSS RAIL

Table . . . three "T" slots on top of table and two "T" slots on-side. "V" slot for shaping bars also provided on side of table. Front end support for maximum rigidity under heavy cuts. Swivel table is not standard equipment but can be supplied at extra price. Swivel table moves on horizontal axis at any angle and this movement is registered against a protractor scale. Swivel table is locked by means of three "T" bolts in circular "T" slots to secure rigidity of clamping.

Table cross feed screw has a large well marked micrometer dial. Crank swings wide of all controls and makes it easy and fast to move table manually in either direction. Bronze covered felt wipers for all dovetail ways on shaper. The cross rail of substantial proportions is stress ribbed with broadly spaced ways. A tapered gib to slide provides compensation for any wear.

The cross rail lock is an added protection to lock cross rail and table assembly into position after moving table up or down to insure accurate results.

FEED HOUSING FRONT

Automatic cross feeds are available in both directions. Feed screw mounted in bronze quills with a ball thrust bearing. Feed direction control can be set in three positions to control the direction of table travel—right, left or neutral for manual feed.

BACK GEARS

Back gears for added power are quick acting type controlled by back gear lever safely located at rear of shaper.

RAM AND ROCKER ARM

Ram of semi-steel casting is heavily ribbed to resist distortion under heavy loads and is of sufficient length to provide a minimum of 60% bearing surface on ways even when ram is at maximum stroke and completely forward in ram bearings.

Ram positioner is located on the operating side of the ram for easy hand positioning of ram when locating ram in relation to work.

The ram clamp is conveniently located on top of ram, securely locks the ram in desired position.

The stroke indicator is large and easily seen and clearly shows the length of stroke taken in increments of $\frac{1}{2}$ ".

The shaft for adjusting the length of stroke has a crank handle for use when quickly changing or setting required length of stroke. The sliding block of the rocker arm is made of manganese bronze and operates in the rocker arm made of a semi-steel casting.

TOOL HEAD

The tool head is graduated into 120°, included, for quick and accurate set-up. Tapered gibs provide take-up to assure permanent accuracy even after long wear.

The tool head swivel locks will lock the head at any desired angle for the "hard to get at places" on many pieces.

The tool head box lock locks the tool head box in



position so that regardless of the tool slide angle, the tool can be adjusted for proper swing-away clearance. The tool slide handle has a large well marked micrometer collar at correct angle so that it can be easily seen from standing position at the machine. The correct depth of the cut can be quickly calculated and tool moved accordingly. The tool slide lock will lock the tool slide in position so that extreme accuracy and trueness can be maintained. The dials on the machine are friction-type for quick adjustment, accurately graduated to .001".

TABLE FEED SHAFT

The elevating shaft moves table and cross rail assembly up and down by means of a crank, moving the work into position.

BODY

Column is rigidly designed with exceptionally wide dovetails and is substantially ribbed and reinforced to withstand extreme thrust and torsional strain. The pedestal is of braced box design with sufficient extra width and length to properly support machine for all its operations. The pedestal also fully encloses the variable speed motor drive, eliminating completely the dangers of exposed pulleys and belts. Motor and drive located in the pedestal are easily accessible by removing large cover plates.

FEED ADJUSTMENT

The feed adjuster has a large friction knurled knob so that with a turn of the knob, the pinion is released and can be quickly set for varying amounts of feed from .0025" to .0175" per stroke.

BULL GEAR

Helical type bull gear with tapered bearing mountings so positioned in relation to bearings that overhang is kept at an absolute minimum. The center distance between bull gear and pinion adjustable for tooth wear.

CLUTCH ASSEMBLY

The clutch mechanism is of the very latest design, especially constructed for use in machine tools.

The clutch lever is conveniently located on the operating side of the ram with a long, easy grip handle which enables the operator to stop all mechanical motion of shaper without turning off electrical current and secures instantaneous action for mechanical power.

MOTOR DRIVE ASSEMBLY

The motor switch is conveniently and safely located on the lower forward side.

The variable speed drive permits speeds within the wide speed range of 12 to 180 strokes per minute. Speed changes are effected instantly while the machine is in operation by turning conveniently located handwheel.

Indicator shows which direction to rotate handwheel for faster or slower speeds.

WISE

A single screw action swivel vise with 7" wide jaws opening to $5\frac{7}{8}$ ". Graduations are machine cut.

SHELDON

Vernon



The Sheldon-Vernon Horizontal Milling Machines are modern, low priced units of compact design for general purpose or production work, capable of producing a large variety of accurately machined parts with a minimum of set-up and operation time, thereby relieving the larger and more expensive machines for work more commensurate with their capacity and proper utilization.

Features

No. 0 HORIZONTAL MILLING MACHINE

SPINDLE

Heat-treated ground spindle mounted in tapered roller bearings.

OVERARM

Large diameter with bronze clamping screws for locking.

OVERARM BRACKET

Adjustable to increase arbor rigidity.

TABLE

Table top has one T slot and coolant troughs on each side and end. T slot in front of table serves as a guide for adjustable longitudinal table stop.

SADDLE AND KNEE

Accurately machined and ground with hand scraped bearing areas.

GIBS

Tapered gibs throughout insure permanent accuracy.

SCREWS

Cross longitudinal and elevating feed screws are accurately thread milled. Cross and longitudinal screws are supported and mounted on ball bearings. The end thrust exerted by load of table saddle and knee is absorbed on an extremely large ball thrust bearing, permitting easy movement by the elevating screw.

DIALS

Large micrometer dials graduated to .001".

DRIVE

Enclosed variable speed V belt drive with handwheel control.

BACK GEARS

Optional additional equipment for slower speeds and added power.

POWER FEED ASSEMBLY

Power feeds are obtained through V belt drive from spindle cone pulley to universal cone pulley. Telescopic drive shaft and universal joint, worm shaft and worm gear, attached to longitudinal screw. Table stop has adjustment for longitudinal travel.

QUICK CHANGE GEAR BOX

Furnished only on No. 3000PQ machine. Permits varying rates of table feeds through tumbler gear meshing with a cluster of gears in the gear box, in addition to a quick reverse of table feeds.

COLUMN AND BASE ASSEMBLY

Column and base are two piece braced construction with integral steel chip pan.

ACCESSORIES

ARBORS

Arbors are heat-treated, accurately ground, and have a No. 9 B&S tapered ground, and have a No. 9 B&S tapered shank. They are stocked in 3/4", 7/8", and 1" sizes and include collars, nut, draw bar, and wrench. One draw bar will fit on any arbor and is used for tightening collet within the spindle.



COLLETS, SPRING, No. 9 B&S

Straight hole, hardened and ground spring collets are available in hole sizes, 1/8" to 3/4" by 16ths, and can be used either in spindle of milling machine or in the dividing head.



COOLANT SYSTEM, PUMP TYPE

Consists of a large coolant reservoir with chip strainer, 1/10 H.P. motor and switch, gusher type circulating pump and all necessary fittings, and mounted to pedestal base and column of the machine.



CHUCK, UNIVERSAL

A 5" diameter, 3 jaw universal self-centering chuck that is fitted to 1 3/4" 8 T.P.I. spindle nose of the universal dividing head. Chuck is furnished with two sets of jaws and wrench for inside and outside chucking.



DIVIDING HEAD, UNIVERSAL

A sturdy 6" diameter swing universal dividing head unit complete with footstock, three standard index plates 15 to 20, 21 to 33, and 37 to 49 hole circles. Dividing head is graduated in degrees and can be set and locked at any angle from 10° below horizontal to 10° beyond the



perpendicular. The spindle has a 1 3/4" 8 T.P.I. spindle nose, a No. 9 B&S tapered hole, and a 7/8" diameter hole clear through the spindle.

DRIP POT OILER

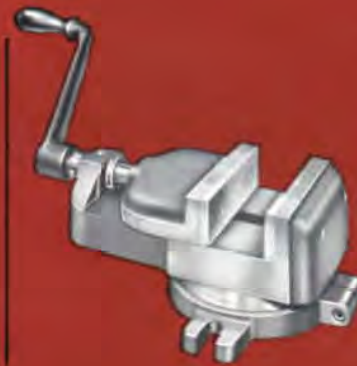
Consists of an ample size coolant container, petcock, flexible hose and bracket that mounts on the column of machine for use on short run work. Container unit is easily detachable from bracket.



TABLE, ROTARY

An accurate, precision ground, heavily ribbed 7" diameter rotary table complete with keys in base, conveniently located crank handle, lock and eccentric throw-out device for worm. Provision is made for takeup for wear.

Table is graduated 0° to 90° in each quadrant by degrees and crank handle dial in 240 minutes by minutes, with a 90-1 worm and wheel ratio. The table has two 5/8" size T-slots at right angles to each other for 3/8" T-bolts. Overall height of table is approximately 2 3/4".



WISE, SWIVEL BASE

4" jaw width, 3" opening, 1 3/16" jaw depth, 3 1/4" overall height precision machined swivel vise with removable grade steel jaws, key base and removable crank type handle. The full swivel base is graduated over 180° and may be locked in any position.

SPECIFICATIONS

SPINDLE.

Size of taper..... No. 9 B&S
Hole through spindle..... 3/16"

SPEEDS..

3000P with low speed pulley..... 125 to 512 R.P.M.
with high speed pulley..... 225 to 1100 R.P.M.

(Both pulleys supplied as standard equipment)

3000PQ—Same speeds as 3000P with additional speeds in back gear.

With low speed pulley..... 18 to 100 R.P.M.
With high speed pulley..... 36 to 190 R.P.M.

(Both pulleys supplied as standard equipment)

FEEDS

Longitudinal (with hand-screw)..... 12" *
Longitudinal (with hand-lever)..... 10"
Transverse..... 5 1/2"
Vertical (maximum distance table top to center line of spindle)..... 9 1/4"

Longitudinal power feed on Model 3000PQ machines provide table feeds of .0008", .0016", .0032", and .0064" per spindle revolution.

Longitudinal power feed on Model 3000P machines provide table feeds of .003", .005", and .008" per spindle revolution.

TABLE

Size..... 5 1/2" x 20"
Number of Tee Slots..... 1
Width of Tee Slots..... 7/16"

Table is arranged for coolant with two troughs and two drain cups, cast as integral unit.

WISE

Width of jaws..... 4"
Depth of jaws..... 1 3/16"
Opens with steel jaws..... 3"
Opens without steel jaws..... 3 1/2"
Overall height with swivel base..... 3 1/4"
Overall height as plain vise..... 2 3/16"

MOTOR

Horsepower and speed recommended for maximum efficiency of operation.... 1 HP x 17 R.P.M.

DIMENSIONS AND WEIGHTS

Height overall..... 62"
Floor space required..... 29" x 39"
Base dimensions..... 18" x 24"
Net weight (approx.)..... 800 lbs.
Domestic shipping weight (approx.)... 900 lbs.
Weight, boxed for export (approx.).... 1000 lbs.

STANDARD EQUIPMENT:

Machine is mounted on pedestal, completely arranged for motor drive, less motor and electrical equipment. Includes two-step cone motor pulley hinged motor bracket, fully enclosed variable speed unit with hand-wheel control, ball-bearing counter shaft, and all necessary belts and pulleys.

SHELDON 10^{1/2}"

Tool Room Precision Type

The L Series SHELDON Precision Tool Room Lathes were developed to meet the needs of many factories, shops and schools, small moderate priced lathes with Tool Room accuracy and lathe performance. This has been accomplished. It was made possible by the combination of good design, special lathe building machinery and extensive tooling with innumerable jigs and fixtures.

Though belt guards and housing covers are cast aluminum to make them lighter, and handier, the total weight of these lathes is greater than that of any other lathe of this price. More important still is the scientific distribution of this metal mass to increase the rigidity and strength of the bed, headstock and carriage, with a resultant increase in accuracy and operating capacity.

**E: Sheldon Lathes come crated, completely assembled, with drives. Motors however, are extra, are not included in the base prices.*

Features

SPINDLE

Ground and hardened, with large hole that gives extra collet capacity.

BEARINGS

Large, precision machine tool tapered roller bearings sustain accuracy at high or low speed.

HEADSTOCK

Heavy, one piece solid end construction. Both bearings set in line—bored recesses.

APRON

Worm feed apron with power cross feed. Full double walled construction supports all gear shafts at both ends.

BED

Big lathe design—two "V" ways and two flat ways.

DRIVE

All "V" belt drive (motor to drive—drive to 4-step cone) gives eight spindle speeds. All belts fully guarded.

GEARS

All gears are hob-cut.

CARRIAGE

Wide and heavy with extra bearing on bed. All dovetails have take-up gibs.

APPEARANCE

Solid, substantial, quality appearance.

-44 This is the same lathe with the same specifications as the L-44, except that it is mounted on a steel bench and has an "E" type underneath motor drive.

This lathe may also be purchased with a pedestal base. Both the pedestal base and steel bench type can also be supplied either with "E" drive or "U" drive. See illustrations of "E" drive and "U" drive on pages 9, 11.

Other L-Series Lathes Available (Not Illustrated).

Bench Type with Horizontal Drive		Mounted on Pedestal Base	
L-38	38" Bed 20" C. D.*	"E" Drive (Underneath Drive)	
L-56	56" Bed 36" C. D.	EL-38P	38" Bed 20" C. D.*
L-62	62" Bed 42" C. D.	EL-44P	44" Bed 26" C. D.
Mounted on Steel Bench		EL-56P	56" Bed 36" C. D.
"E" Drive (Underneath Drive)		EL-62P	62" Bed 42" C. D.
EL-38	38" Bed 20" C. D.	Mounted on Pedestal Base	
EL-56	56" Bed 36" C. D.	"U" Drive (Underneath Drive)	
Mounted on Steel Bench		UL-38P	38" Bed 20" C. D.
"U" Drive (Underneath Drive)		UL-44P	44" Bed 26" C. D.
UL-38	38" Bed 20" C. D.	UL-56P	56" Bed 36" C. D.
UL-44	44" Bed 26" C. D.	UL-62P	62" Bed 42" C. D.
UL-56	56" Bed 36" C. D.		

*Center Distance

SHELDON PRECISION LATHES

10^{1/2}" Swing and 3/4" Collet Capacity

SPECIFICATIONS

10" Lathes

CAPACITY AND CLEARANCES

Swing over bed	10 ^{1/2} "
Swing over cross slide	6 ^{3/16} "
Distance between centers	20", 26", 36" or 42"
Carriage length	11"
Carriage bridge width	3 ^{3/4} "
Bed lengths	38", 44", 56" or 62"
Bed width	7"
Bed height	5 ^{1/2} "

THREADS AND FEEDS

Threads per inch (R.H. and L.H.)	48
Screw threads per inch	4, 4 ^{1/2} , 5, 5 ^{1/2} , 5 ^{3/4} , 6, 6 ^{1/2} , 7, 8, 9, 10, 11, 11 ^{1/2} , 12, 13, 14, 16, 18, 20, 22, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112, 128, 144, 160, 176, 184, 192, 208, 224
Longitudinal feeds through friction clutch	.0005 to .026
Cross feeds through friction clutch	.0008 to .024
Lead screw dia. and threads per inch	3/4" x 8 T.P.I.

HEADSTOCK

Hole through spindle	1 ^{1/16} "
Maximum collet capacity—bar type	3/4"
Maximum Collet capacity—Spindle nose type	1"
Front spindle bearing	I.D. 1.75 O.D. 3.34
Rear spindle bearing	I.D. 1.43 O.D. 2.83
Headstock spindle taper—Morse	No. 4
Size of center—Morse taper	No. 2
Spindle nose diameter and T.P.I.	1 ^{3/4} " x 8 T.P.I.
Back gear ratio	5.4:1
Size of spindle "V" belts	B Section
Large face plate diameter	9"
Small dog plate diameter	5 ^{1/2} "

SPINDLE SPEEDS

"E" Type Underneath Motor Drive

R.P.M. of spindle, open belt	280-482-788-1355
R.P.M. of spindle, back gears engaged	50-87-142-244

"U" Type Underneath Motor Drive

R.P.M. of spindle, open belt	190-280-475-700
R.P.M. of spindle, back gears engaged	30-45-80-115

Horizontal Motor Drive

R.P.M. of spindle, open belt	316-491-755-1195
R.P.M. of spindle, back gears engaged	59-91-140-222

COMPOUND REST

Cross slide will travel	6 ^{7/8} "
Angular feed of cross slide	2 ^{1/4} "

TOOL POST

Size of opening for tool holder shank	1/2" x 1 ^{3/8} "
Size of cutter bit tool holder takes	1/4"

TAILSTOCK

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

MOTOR

Horse power recommended	3/8 or 1/2 H.P.
R.P.M. recommended	1725 R.P.M.

STANDARD EQUIPMENT INCLUDES—...

Necessary Belts	Small Dog Plate
Tool Post Complete	Thread Chasing Dial
Headstock Center	Tailstock Center
Center Sleeve	Necessary Wrenches
Book, "The Care and Operation of a Lathe"	

L-44



10 $\frac{1}{8}$ " Swing, $\frac{3}{4}$ " Collet Capacity, Taper Roller Bearings



EL-44

SHELDON 11"

Tool Room Precision Lathes

"Zero Precision" Tapered Roller Bearings

The Sheldon T S-56 is a modern precision machine tool, a product of intense engineering development, embodying the latest accepted advances in lathe design and quality tool construction features. It is specially designed to fulfill today's dual needs—a lathe that will operate efficiently both with standard tools at normal speeds and feeds and with the recently developed cutting materials and tools that require much extra power and speed.

To insure extreme precision and the permanence of this accuracy, the spindle of the T S-56 is mounted in "Zero Precision" tapered roller bearings—the most accurate obtainable. "Zero Precision" bearings are "specials" throughout their manufacture—are specially made and treated to exact size. These are bearings heretofore found only in the most costly machine tools. Here is accuracy never before given, nor even pretended, in a moderate priced lathe, accuracy unsurpassed at any price.

FEATURES

"Zero Precision" Tapered Roller Bearings of size exceeding normal spindle load requirements.

Bed, cast in one piece, with two V ways and two flat ways ground to precision tolerances.

Drive is mounted underneath. Two B section V belts operate from drive to the spindle. Simple adjustment is provided for belt tension.

Heavy headstock with solid bored bearing housing for tapered roller bearings.

Spindle hardened and ground.

Double walled apron with power cross feed.

Carriage has unusually large bearing surface and is accurately hand scraped and fitted to the bed ways.

Cross slide and compound rest have feed screws of a full one-half inch diameter, with milled threads.

Lead screw is $\frac{7}{8}$ " diameter milled on a precision thread miller to a tolerance of lead error of .0005" in any one inch.

Tailstock hand scraped to the ways and accurately aligned to headstock.

Thread chasing dial is standard equipment.

Steel bench has a solid steel plate top which acts as a chip pan, rigidly supported on a heavy fabricated base.

S-56P This is the same lathe with the same specifications as the TS-56 above, except that it is mounted on a pedestal base. The chip pan and motor are extra. This type of lathe may also be purchased with a shorter or a longer bed.

Other sizes of lathes available (not illustrated)

Mounted on Steel Bench—"E" Drive	Mounted on Pedestal Base—"U" Drive
TS-44 44" Bed 24" C. D.*	TU S-44P 44" Bed 24" C. D.*
Mounted on Steel Bench—"U" Drive	TU S-56P 56" Bed 35" C. D.
TU S-44 44" Bed 24" C. D.	TU S-70P 70" Bed 48" C. D.
TU S-56 56" Bed 35" C. D.	
Mounted on Pedestal Base—"E" Drive	Also available in three sizes as bench model with headstock mounted motor drive. See price list for details.
TS-44P 44" Bed 24" C. D.	
TS-70P 70" Bed 48" C. D.	

*Center Distance

SHELDON "E" Type

Underneath Motor Drive

Double countershaft permits operation through standard 1-piece lathe d. Double V-belts to spindle prevents slippage delivers full power. Step cones give wide speed range. Over release for belt shifting. Adjustable take-up for all belts.



SHELDON PRECISION LATHES

11 1/4" Swing and 1" Collet Capacity

SPECIFICATIONS

11" Lathes

CAPACITY AND CLEARANCES

Swing over bed	11 1/4"
Swing over cross slide	8"
Distance between centers	24", 35", 48"
Carriage length	13"
Carriage bridge width	4 1/2"
Bed lengths	44", 56" or 70"
Bed width	8"
Bed height	6 3/8"

THREADS AND FEEDS

Threads per inch (R.H. and L.H.)	48
Screw threads per inch	4, 4 1/2, 5, 5 1/2, 5 3/4, 6, 6 1/2, 7, 8, 9, 10, 11, 11 1/2, 12, 13, 14, 16, 18, 20, 22, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104, 112, 128, 144, 160, 176, 184, 192, 208, 224
Longitudinal feeds through friction clutch	.0005 to .026
Cross feeds through friction clutch	.0008 to .024
Lead screw dia. and threads per inch	7/8" x 8 T.P.I.

HEADSTOCK

Hole through spindle	1 3/8"
Maximum collet capacity—Bar type	1"
Maximum collet capacity—spindle nose type	1 3/8"
Front spindle bearing	I.D. 2 1/4" O.D. 4 1/8"
Rear spindle bearing	I.D. 2" O.D. 3 5/8"
Headstock spindle taper—Morse	No. 5
Size of center—Morse taper	No. 3
Spindle nose diameter and T.P.I.	2 1/4" x 8 T.P.I.
Size of spindle "V" belts (2), B Section	11 5/8"
Large face plate diameter	11"
Small dog plate diameter	5 1/2"

SPINDLE SPEEDS

"E" Type Underneath Motor Drive

R.P.M. of spindle, open belt	280-482-788-1355
R.P.M. of spindle, back gears engaged	50-87-142-244

"U" Type Underneath Motor Drive

R.P.M. of spindle, open belt	190-280-475-700
R.P.M. of spindle, back gears engaged	30-45-80-115

Headstock Motor Drive

R.P.M. of spindle, open belt	280-423-730
R.P.M. of spindle, back gears engaged	47-70-119

COMPOUND REST

Cross slide will travel	7"
Angular feed of cross slide	2 5/8"

TOOL POST

Size of opening for tool holder shank	1/2" x 2"
Size of cutter bit tool holder takes	1/4"

TAILSTOCK

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

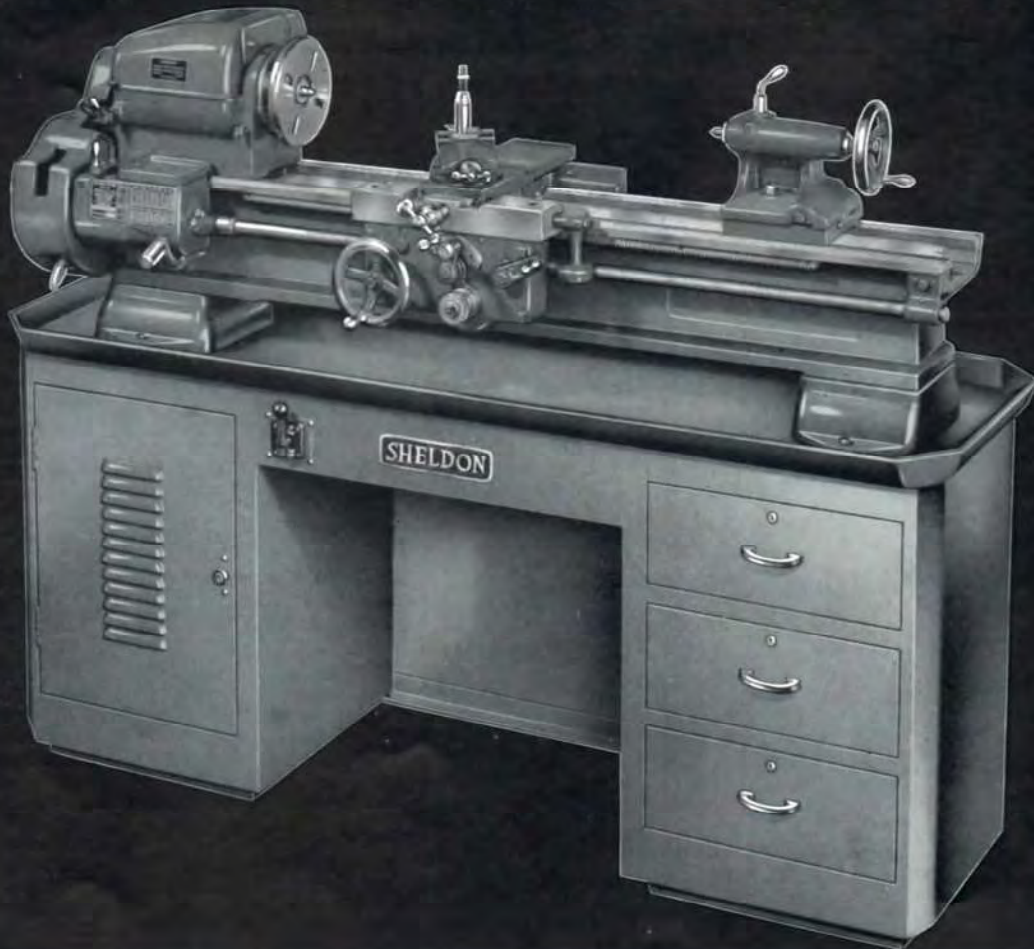
MOTOR

Horse power recommended	1 H.P.
R.P.M. recommended	1725 R.P.M.

STANDARD EQUIPMENT INCLUDES

Necessary Belts	Small Dog Plate
Tool Post Complete	Thread Chasing Dial
Headstock Center	Tailstock Center
Center Sleeve	Necessary Wrenches
Book, "The Care and Operation of a Lathe"	

T-S56



11¼" Swing, 1" Collet Capacity, "Zero Precision" Taper Roller Bearings



TS-56P

Accessories and Attachments for SHELDON Lathes

BENCHES, Lathe Steel

No. **51367** 44" Bed
 No. **51366** 56" Bed
 No. **51368** 70" Bed

The Sheldon steel lathe bench is of the latest design with improved bracing and securely welded joints to give solid support to the lathe. The top of the bench is of heavy sheet steel and also serves as a chip pan. Suitable foot pads with bolt holes are furnished for securely anchoring the bench to the floor. Three large bench drawers that can be independently locked provide ample storage space for tools and work in progress.

BOOK,

"Care and Operation of a Lathe"

This book or manual has been prepared to assist the beginner to better understand the development of modern metal cutting lathes, their parts and their function. The book also explains the proper set-up, care and maintenance of a lathe together with explaining grinding of lathe tools, their setup, work piece setups, etc., including complete descriptions of various lathe operations. Books are available with either a heavy paper or fabricoid cover.

CENTER, Crotch

No. **K223A** (No. 2 Morse Taper)
 No. **S1446** (No. 3 Morse Taper)

Used in tailstock as a "V" block support for drilling round stock. Width and angle of "V" on face $1\frac{1}{4}" \times 90^\circ$, face diameter $1\frac{3}{4}"$, overall length 4".

CENTER, Drill Pad

No. **K221A** (No. 2 Morse Taper)
 No. **S1447** (No. 3 Morse Taper)

Used in tailstock as a supporting face for drilling miscellaneous flat stock. Face diameter 4", face width $\frac{1}{2}"$, overall length $3\frac{3}{4}"$.

CENTER, Lathe, Male

No. **K42** (No. 2 Morse Taper)
 No. **S1448** (No. 3 Morse Taper)

Standard 60° centers for supporting stock between the headstock and the tailstock. Centers are made from steel, hardened and ground all over. Available with No. 2 or No. 3 Morse Taper shanks for tailstock spindles and interchangeable with respective size of Morse Taper hole in head stock spindle sleeves.

CENTER, Lathe, Half-Male

No. **582** (No. 2 Morse Taper)
 No. **S1449** (No. 3 Morse Taper)

Standard 60° center partially cut away as illustrated for use in tailstock spindle for facing and squaring ends of stock supported between centers.

CENTER, Lathe, Female

No. **K274** (No. 2 Morse Taper)
 No. **S1450** (No. 3 Morse Taper)

Used to support conical or pointed work or stock with integral male centers.

Drilled and countersunk with standard center drill.

CENTERS, Cup, in Sets

No. **A2024** (No. 2 Morse Taper)
 No. **A2025** (No. 3 Morse Taper)

For turning armatures on shafts that have no centers. Set provides 1 live cup center for tailstock, 1 solid cup center for the headstock.



CENTERS, Live

No. **A1908** (No. 2 Morse Taper)
 No. **A2007** (No. 3 Morse Taper)

The anti-friction bearing live center is designed to permit deeper cuts at higher spindle speeds, to turn heavier loads with greater safety, to save operating time and cost of replacing and re-conditioning worn out solid centers, and to support a variety of types of stocks which work on specially designed center point supports. Each live center is furnished with a standard 60° male point. See price list for interchangeable points.

CHUCK, Center Rest

No. **100** (No. 2 Morse Taper)
 No. **100C** (No. 3 Morse Taper)

The center rest chuck is mounted in the tailstock of the lathe and permits the turning of round work without the use of a center support. The bronze chuck jaws are adjustable to the appropriate diameter for the stock and can be locked in position to provide a steady bearing support. Chuck capacity is $\frac{1}{4}"$ to $\frac{3}{4}"$.

CHUCK, Drill, 3-Jaw

Nos. **34** and **36** (No. 2 Morse Taper)
 Nos. **34C** and **36C** (No. 3 Morse Taper)

Used in tailstock spindle for general drilling, reaming, etc. and in headstock spindle for centering stock miscellaneous drilling, etc. The chuck jaws are made of high tempered steel and are moved by strong forceful screw action capable of a powerful grip. The chuck is furnished complete with a key and an arbor support. Chuck No. 34 has $0"$ to $\frac{1}{2}"$ capacity and Chuck No. 36 has a $\frac{3}{16}"$ to $\frac{3}{4}"$ capacity. When ordering specify No. 2 or No. 3 Morse Taper shank arbor.

CHUCK, Independent 4-Jaw

Nos. **64-6", 84-8", 104-10"**

The jaws are set independently for round or irregular work, either concentric or eccentric with lathe spindle. Furnished in 6", 8", or 10" sizes. When ordering chucks fitted to spindle, specify whether for $1\frac{3}{4}"$ or $2\frac{1}{4}"$ threaded diameter spindle and serial number of lathe.

CHUCK PLATE

Chuck plates, threaded and fitted to spindle nose are available specially for those wanting to fit their own lathe chucks. When ordering, specify make of chuck, chuck size, whether for $1\frac{3}{4}"$ or $2\frac{1}{4}"$ threaded diameter spindle, and serial number of lathe.

CHUCK, Spindle (Hollow Arbor)

No. **18**

This chuck is fitted to a hollow arbor that replaces the headstock spindle sleeve and center and permits machining of long bars, rods, etc. that extend through the hollow arbor and lathe spindle. When ordering, specify No. 4 or No. 5 Morse Taper arbor and serial number of lathe.

CHUCK, Universal 3-Jaw, (Scroll Operated)

Nos. **53-5", 63-6", 83-8"**

This chuck is exceptionally handy for general lathe work as it is automatically self-centering. It is furnished with two sets of jaws for inside and outside chucking. When ordering, specify whether for $1\frac{3}{4}"$ or $2\frac{1}{4}"$ threaded diameter spindle and serial number of lathe.

A2024

Accessories and Attachments for SHELDON Lathes

COLLET CHUCK ATTACHMENT, Handwheel Draw-In Type

No. **L462A**-10" ($\frac{3}{4}$ " Collet Cap.)
No. **SM462A**-11"-12" (1" Collet Cap.)

The standard handwheel type draw-in collet attachment is useful for general precision work on a variety of sizes of standard bar stock. The complete attachment includes the hollow draw bar with handwheel, hardened and ground collet adaptor sleeve, thrust bearing, spacer sleeve, spindle nose cap and spanner wrench. The attachment is available for both $\frac{3}{4}$ " (4-C) and 1" (5-C) collet capacity lathes. When ordering, specify whether $\frac{3}{4}$ " or 1" collet capacity attachment is desired and serial number of lathe.

COLLET CHUCK ATTACHMENT, Handlever Draw-In Type

No. **L462H**-10" ($\frac{3}{4}$ " Collet Cap.)
No. **SM462H**-11"-12" (1" Collet Cap.)

The standard handlever type draw-in collet attachment is very useful for rapid repetitive manufacture of duplicate parts from standard bar stock or rod, eliminating the necessity of stopping the lathe to feed the bar stock or rod through the collet. By regulating the main body sleeve of the adjustable chuck closer, the holding force of the collet may be set to any degree of resistance. The complete attachment includes the lever attachment, hollow draw bar, hardened and ground collet adaptor sleeve, spindle nose cap and spanner wrench. The attachment is available for both $\frac{3}{4}$ " (4-C) and 1" (5-C) collet capacity lathes. When ordering, specify whether $\frac{3}{4}$ " or 1" collet capacity attachment is desired and serial number of lathe.

COLLET CHUCK ATTACHMENT, Spindle Nose Type, Handlever

No. **A2020**-10" ($\frac{3}{4}$ " Collet Cap.)
No. **A2021**-11"-12" (1" Collet Cap.)

The lever operated collet chuck attachment can be operated without stopping the spindle. The positive lock of the closing collar holds the work firmly in position while in operation.

COLLET CHUCK ATTACHMENT, Spindle Nose Type, Handwheel

No. **A2022**-10" ($\frac{3}{4}$ " Collet Cap.)
No. **A2023**-11"-12" (1" Collet Cap.)

Spindle nose type collet chuck attachments permit use of collets up to the full inside diameter of spindle (or larger) with very little overhang of chuck.

COLLET RACK, Metal

No. **KB647-5** 11"-12"

This collet rack provides a convenient holder for collets, lathe centers and spindle sleeve. The rack is easily mounted on the back way of any lathe bed. Space is provided for 16-5C collets, 2 centers and one spindle sleeve.

COLLET RACK, Wood (Drawer)

No. **S36**-11"-12"

This liner unit placed in a drawer of the steel bench provides a clean and handy holder for 16-5C collets or 12-4C collets, draw-bar for draw-in collet attachment, collet adaptor sleeve, spindle nose cap, spindle center sleeve, spanner wrenches, headstock and tailstock centers and tool post.



COLLETS, (Standard)

Round Square Hexagon

Standard collets for use with standard handwheel or handlever type collet attachments are available in Model 4-C for the $\frac{3}{4}$ " collet capacity lathe and in Model 5-C for the 1" collet capacity lathe. The collets are very accurately made from high grade tool steel hardened and ground inside and outside. When ordering collet, specify Model and specific size desired. Special decimal or metric size round, square, hexagon or step collets can also be furnished with prices on request.

Collets for spindle nose type chucks are stock items, but chuck number must be specified.

DOGS, BENT TAIL, Drop Forged

Improved design, finest quality, drop forged from special open hearth steel, heat treated to extreme toughness with alloy steel screws. When ordering, specify if "Square Head" or "Headless" screws are desired. (See price list for stock numbers.)

DOGS, CLAMP TYPE, Drop Forged

Nos. 11 and 12

As a clamp or lathe dog, the drop forged steel clamp dog, properly heat-treated, securely grips a variety of shapes of stock. Construction of upper bar allows for considerable tilting without bending screws.

GRINDERS, Tool Post

No. 14—1/4 h.p., No. 11—1/5 h.p.,
No. 44—1/4 h.p.

No. 14 for Sheldon 10" and 11" lathes for light duty precision work.—two speeds, 10,000 or 22,500 r.p.m.

No. 11 or 44 for all size lathes; for precision external and internal work, with speeds of 6,000 to 38,000 r.p.m.

LAMP, LATHE, Adjustable

No. **A1909**

This all metal lathe lamp was selected for its light centering efficiency and its adjustable arm with 3 ball socket elbows enabling lamp to be placed in any position. Back of shade and entire arm has non-reflecting surface. Lamp bolts to back of lathe bed and is removable. Comes complete with cord and plug.

METRIC TRANSPOSING ATTACHMENT

The metric transposing attachment consists of an auxiliary end gearing quadrant lever, compounding gears, compound gear mounting, a set of seventeen change gears, and a metric thread cutting chart.

The attachment facilitates cutting of 43 standard metric threads from .200 to 7.000 millimeters. To use the metric transposing attachment it is necessary to remove the standard end gearing assembly and replace with the special metric arrangement.

For complete information ask for metric attachment bulletin No. "SMQ" and specify serial number of lathe.

Accessories and Attachments for SHELDON Lathes

MILLING and KEYWAY CUTTING ATTACHMENT

Nos. **L411A-10"**, **K411A-11"**, **M411A-12"**

A handy and economical attachment that is ideal for small shops not having enough work for a regular milling machine or to relieve the regular milling machine when additional facilities are needed. The attachment is mounted on the lathe saddle and is capable of swiveling 360° in the horizontal plane and 90° either side of the center in the vertical plane and is graduated 180 degrees. The vertical travel of the slide is 3" and the vertical adjusting screw is furnished with a micrometer graduated collar. Width of vise jaws 3½", depth of jaws 1½", opening of vise jaws with 3" x 90° V-way jaw plate in position 1½", without screw plates 2¼". Maximum distance from center of lathe spindle to face of bottom jaw at bottom of travel 1½". When ordering, specify size and serial number of lathe.

MILLING ARBOR, for Milling and Keyway Cutting Attachment

No. **KM352-10"** (¾" Collet Cap.)
No. **SM352 11"-12"**

1" arbor accurately machined, hardened and ground. Has two ½" spacers and ¼" spacer. Capacity (between shoulder and tightening nut) 1¾". When ordering, specify whether No. 4 Morse Taper shank for ¾" collet capacity lathes, or No. 5 Morse Taper shank for 1" collet capacity lathes is desired.

MOTORS

Motors are not included in the list price of Sheldon machine tools, but can be supplied at extra cost. We supply standard frame, ball bearing, 1800 RPM reversing motors made by dependable electric motor manufacturers.

Stock motors are A.C., 110/220 Volt, 60 cycle, 1 phase, or 220/440 volt, 50/60 cycle, 3 phase; also some odd voltage and D.C. motors. Special motors are available.

Motors ordered with the machine are fitted and wired at the factory at no additional cost. Motors shipped to the factory by the customer or dealer will be fitted and wired at a flat additional price, regardless of size or type.

Be sure to give complete motor voltage, phase, and cycle requirements when placing orders for machines. Use recommended horsepower ratings as indicated on the catalog pages and price sheet.

PANS, Oil and Chip

Oil and chip pans are made of heavy gauge sheet steel with rolled rim and welded corners and will serve as both chip pan and oil reservoir for coolant pump. Pans are available for underneath motor driven lathes and should be ordered with the lathe to permit fitting at the factory. When ordering pans for lathes already in service, specify model and serial number of lathe. One pan leg and one new floor leg must be ordered with chip pan for all underneath motor driven pedestal base floor model lathes. Two pan legs and two new floor legs must be ordered with chip pans for all headstock mounted motor driven floor leg model lathes. No credit allowed for old floor legs.

PISTON TURNING FIXTURE

No. **L1346-10"** (¾" Collet Cap.)
No. **S1346 11"-12"**

A very convenient self chucking attachment for turning pistons 2½" to



L411A



KM352



K182



M182



K183



A1906



A1907



L1346



L209A

4" O.D. The unit consists of two cone rings, one flat centering ring, one arbor, and a large and small driving dog. When ordering, specify size and serial number of lathe. Tapered arbor fits in spindle nose.

PLATE, DOG

No. **K182-10"**

Small semi-steel face plate designed to drive lathe dog when supporting work between centers. Has two clamp slots and two aligned holes. Accurately machined and threaded to fit lathe spindle nose thread. When ordering, specify whether for 1¾" or 2¼" threaded diameter spindle and serial number of lathe.

PLATE, FACE, Large Size

No. **K183-10"** (¾" Collet Cap.)
No. **LT183-11"**, No. **KT185-12"**

Large face plate for supporting and revolving flat stock, or clamped on jigs or fixtures used for miscellaneous machining operations. These face plates are made of semi-steel with ribbed reverse inforced back, have eight clamp slots and are accurately threaded to fit the lathe spindle nose. When ordering, specify if 9", 11", or 12" diameter plate is desired and give the serial number of your lathe.

PLATE, HANDWHEEL

No. **S182-11"**, No. **M182-12"**

Accurately machined combination dog and face plate with 4 indexed clamp slots with smoothly rounded rim to permit use as an inching wheel. When ordering, specify whether for 1¾" or 2¼" threaded diameter spindle and serial number of lathe.

PUMP, COOLANT, Portable

No. **A1907**

This portable unit, which can be set up in a few minutes on the floor adjacent to any machine tool, will supply a constant flow of coolant to the cutting point. It consists of motor, pump, strainer and reservoir with adjustments that permit close regulation of flow to requirements. Pump is furnished with necessary pipe and fittings.

PUMPS, COOLANT and CUTTING OIL

No. **A1906**

Light in weight, compact in design but still ample in capacity, this efficient coolant or cutting oil circulating system is recommended for lathes set up for production. Its motor operated pump is of positive pressure, curved fin type with a ventur inlet on the return side of the impeller, which assures the uniformity of flow (hydraulic efficiency as high as 70%) with minimum wear. Pump is furnished with necessary pipe and fittings.

REST, FOLLOWER, 2-Jaw

Nos. **L209A-10"**, **K209A-11"**, **M209A-12"**

The follower rest is attached to and moves with the lathe carriage saddle and supports long flexible and slender shafts in proper position to the cutting tool during miscellaneous machining operations to assure accurate results. The machined adjustable jaws can be set by adjustable screws and locked in place for any desired diameter of bar stock within the range of 3/16" to 3½" capacity. When ordering, specify size and serial number of lathe.

Accessories and Attachments for SHELDON Lathes

REST, STEADY, (Center) Hinged Type

L576A-10", K575A-11", M575A-12"

The steady rest is mounted at any desirable place on the bed locating on one "V" way and one flat way and is used to support long, flexible shafts, rods and tubes for various machining operations such as turning, boring, threading, etc. The steady rest is furnished with three quickly adjustable machined jaws that can be set by adjustable screws and locked in position for any desired diameter of stock within the range of $\frac{3}{16}$ " to $3\frac{1}{2}$ " capacity. The top of the steady rest is hinged to facilitate quick and easy insertion and removal of stock. When ordering, specify size and serial number of lathe.

REST SET, Wood Turning

L281A-10", K281A-11", M281A-12"

This hand rest for wood turning consists of a convenient base that slides into the tool post T-Slot, and one each 4" and 8" interchangeable T-rests.

STOP, CARRIAGE, Plain

No. K908A

An efficient, inexpensive carriage stop that clamps to the lathe bed locating one "V" way at any point, and that serves to indicate the stopping point on facing, boring operations, etc.

STOP, CARRIAGE, Micrometer

No. K693A

A precision stop with micrometer screw adjustment that clamps on the bed, locating on one "V" way at any point. A thumb nut locks the screw at any desired setting with a 1" screw travel either way.

STOP, THREAD-CUTTING, Adjustable No. K870A

Can be assembled to lathe carriage to regulate pre-determined depth of cut for turning or cutting screw threads.

SWITCHES, REVERSING

Nos. R-1-A-(1 phase), R4-(3 phase)

The starter switch is of the lever operated drum reversing type, having "forward," "off" and "reverse" positions. When ordering, specify if for single or three phase operation.

Direct current reversing switches are also available at prices given upon request. When ordering, give complete D.C. motor specifications.

TAIL STOCK, LEVER OPERATED

Nos. L72H-10", K72H-11", M72H-12"

The hand lever operated tailstock is primarily a production accessory designed for production, drilling, reaming, etc. Either the hand lever or handwheel of this tailstock can be used. The tailstock spindle has a $2\frac{3}{4}$ " travel.

TAPER ATTACHMENTS, Plain

Nos. LT210A-10", KT210A-11", MT210A-12"

Taper attachments are an important unit for use on lathes in taper turning and boring long tapers or where repetitive duplicate taper turning or boring is necessary. Accurate performance is obtained through the attachment's simplicity of design and sturdy construction.

The Sheldon plain taper attachment can be easily assembled and fitted to any Sheldon lathe carriage. The swivel bar is graduated in inches per foot on one end and in degrees on the other end



and permits turning or boring tapers up to 3" per foot, $7\frac{1}{2}$ " in length at any one setting.

TAPER ATTACHMENT, Telescopic Nos. LTT210A-10", KTT210A-11", MTT210A-12"

The new Sheldon telescopic taper attachment can also be assembled and fitted to any Sheldon lathe carriage and is furnished with a telescopic cross feed screw that eliminates the necessity of disengaging the cross feed screw nut as in the case of the plain taper attachment. This attachment has tapered gibs for adjusting the slide saddle for quick and even adjustment. The swivel bar is similar to the plain taper attachment, being graduated in inches per foot in one end and in degrees on the other end. Tapers up to $3\frac{1}{2}$ " per foot and $9\frac{1}{2}$ " in length may be turned or bored at any one setting.

THREAD CHASING DIAL

Ends need for reversing lathe when cutting threads. All even threads start on any dial graduation. Odd threads start on any numbered graduation. Half threads start on odd number graduations.

TOOL HOLDERS

Tool holders are permanent, multi-purpose tools. With a few cutters quickly ground from standard shapes of high speed steel, each tool holder effectively equals a complete set of solid tools. Embodying years of design refinement, each assures maximum efficiency at all speeds and feeds and will give many years of economical service. (See price list for stock numbers.)

TOOL POST (Double)

Handwheel w/compound L660A-10", K660A-11", M660A-12"
Handlever w/compound L664A-10", K664A-11", M664A-12"

The Sheldon Double Tool Post attachment provides a two way, front and back tool post operation that cuts job time in half. Available with either hand lever or hand wheel screw action with adjustable stops for both front and back tools. Recommended for forming, rounding, knurling, cutting off, etc., of duplicate parts. Please give serial number of lathe when ordering.

TOOL POST, TURRET, 12 Position Nos. A1967-10", A1968-11", A1969-12"

This all-steel 4-tool turret tool post production accessory with hardened alloy steel headless screws fits into the tool post T-Slot of the compound rest. It has 12 indexing positions (3 working positions for each tool). Holds standard square or rectangular bits, boring bars and cut-off blades.

TURRET, BED, Handwheel Nos. A1970-10" A1971-11" A1972-12"

Designed for rapid and accurate machining of duplicate parts, including such operations as turning, drilling, reaming, counter boring, threading, knurling, etc. The turret head automatically registers one-sixth of a turn with each back movement of the hand lever. Length of tool operations regulated by adjustable stops provided for each of the six indexed positions of the turret head. Suitable takeup gibs assure lasting accuracy. Turret takes standard diameter shank screw machine tools. Capacities— $4\frac{1}{4}$ " or $6\frac{1}{2}$ " stroke.