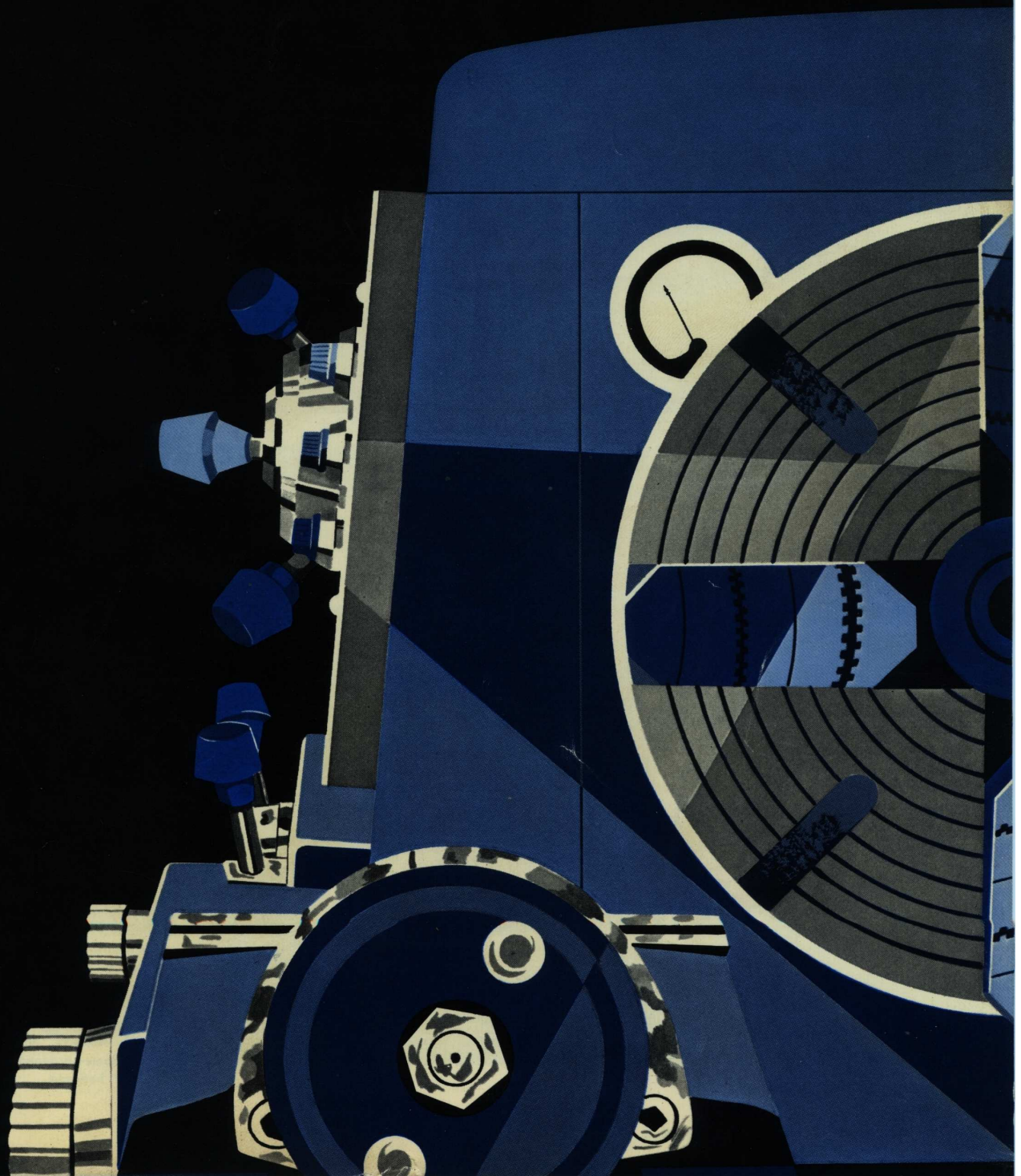


# ***Lodge & Shipley***

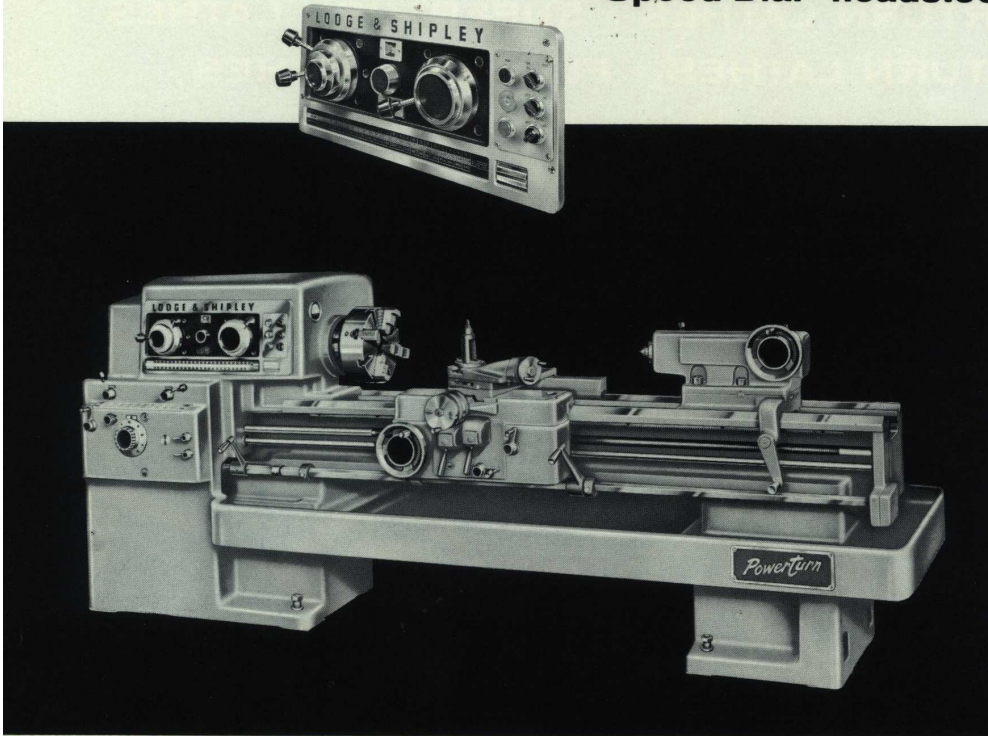
**POWERTURN LATHES • SUPERTURN LATHES  
HI-TURN LATHES • FLOTURN LATHES**



# POWERTURN LATHES —engine, toolmaker and gap

## Models 1610, 2013 and 2013-7

### "Speed Dial" headstock



The POWERTURN models shown on this page can be equipped with either a Speed Dial headstock or the Powershift headstock described below. It provides 24 spindle speeds —up to 2000 R.P.M. and 20 H.R.

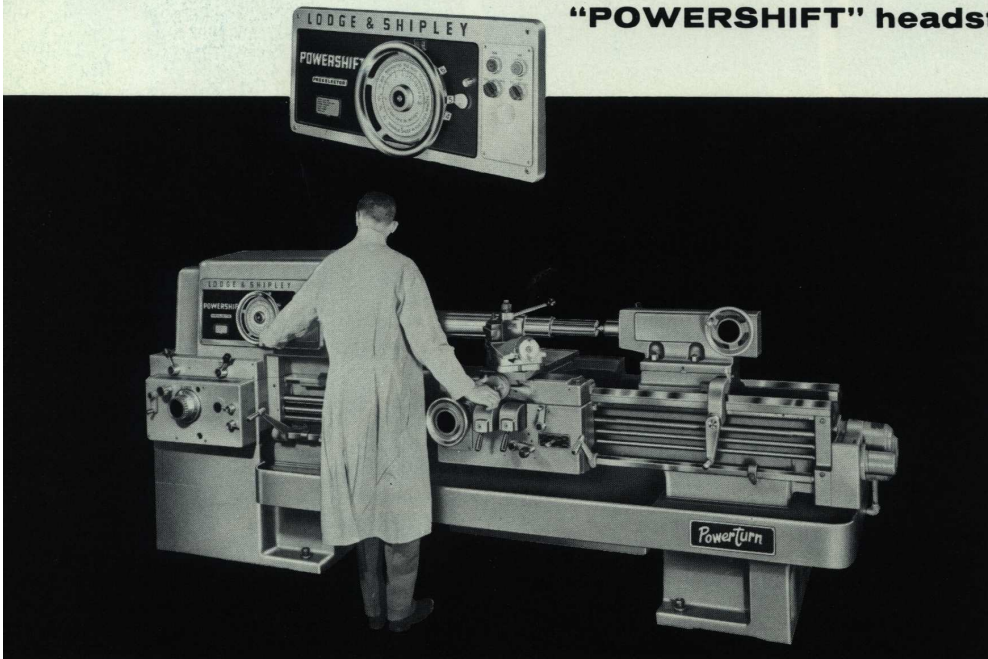
The Speed Dial head makes quick, easy and accurate speed setting almost automatic. It eliminates operator calculations, substituting three simple steps as described on the opposite page.

The Speed Dial headstock has an all alloy steel spur gear transmission, featuring shaved and flame hardened gearing, hardened and ground alloy steel shafting and oversize precision antifriction bearings. The main spindle is carried on three tapered roller bearings. The intermediate bearing seat is bored in an extra heavy rib, cast integral with the headstock. Drive to the spindle is through a large size, multi-disc combination clutch and brake which provides quick starts, smooth stops and a neutral position for shifting gears.

Automatic lubrication to the entire headstock is provided with a full-flow oil filter from a separate reservoir.

In every other respect, these Speed Dial POWERTURN lathes are identical with their Powershift brothers below.

### "POWERSHIFT" headstock



POWERTURN Lathes are also available as POWERSHIFT PRESELECTOR models, featuring the Powershift Preselector headstock with additional time and step-saving features.

Feed and Thread gearing on both versions of these POWERTURN models provide 81 quick changes in a totally enclosed gear box. A special feature of all POWERTURN Toolmaker Lathes is the apron-controlled-reverse to leadscrew which permits reversal of carriage travel without changing direction of spindle rotation.

POWERTURN models shown here are available as Engine, Toolmaker, or Gap Bed Lathes. They all feature flame-hardened and ground replaceable bedways and cross slide ways, carriages with extra-width bridges for the utmost rigidity, pressure lubrication to bedways and cross slide ways. Aprons have pressure lubrication, anti-friction bearings and direct reading dials for length, cross-slide and compound. Tailstock barrels are hardened, ground, graduated and fitted with a tang slot. Bed construction is Lodge & Shipley's exclusive "elliptical girth" design with two flame-hardened and ground replaceable "vee" bedways.

HORSEPOWER	8	8.5	10	12	15	18	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20				
CUTTING SPEED			19	23	27	33	40	49	58	71	86	104	127	155	187	226	271	331	400	493	587	716	873	1047	2
REV. PER MIN.	24	29	36	43	52	64	77	93	112	136	165	199	242	295	357	431	518	632	765	923	1122	1368	1657	2000	

	ENGINE—TOOLMAKERS LATHES			GAP BED LATHES		
	1610	2013	2013-17	1610	2013	2013-17
swing over bed	18"	20½"	24⅝"	18"	20½"	24⅝"
swing over cross slide	10"	13"	17¾"	10"	13"	17¾"
swing through gap				28"	31"	36"
gap admits in front of nose				11½"	11½"	11½"
center distance—base length	30"	30"	30"	30"	30"	30"
number of spindle speeds	24	24	24	24	24	24
spindle speeds—low range	14-1160	14-1160	14-1160	14-1160	14-1160	14-1160
intermediate range	21-1740	21-1740	21-1740	21-1740	21-1740	21-1740
high range	24-2000	24-2000	24-2000	24-2000	24-2000	24-2000
maximum HP of motor	20	20	20	20	20	20
number of threads and feeds	81	81	81	81	81	81
range of threads per inch	1-256	1-256	1-256	1-256	1-256	1-256
range of feeds—thous. per rev.	.0007"- .187"	.0007"- .187"	.0007"- .187"	.0007"- .187"	.0007"- .187"	.0007"- .187"
approx. net weight—base length (lbs.)	7800	8300	8600	8050	8550	8850

3

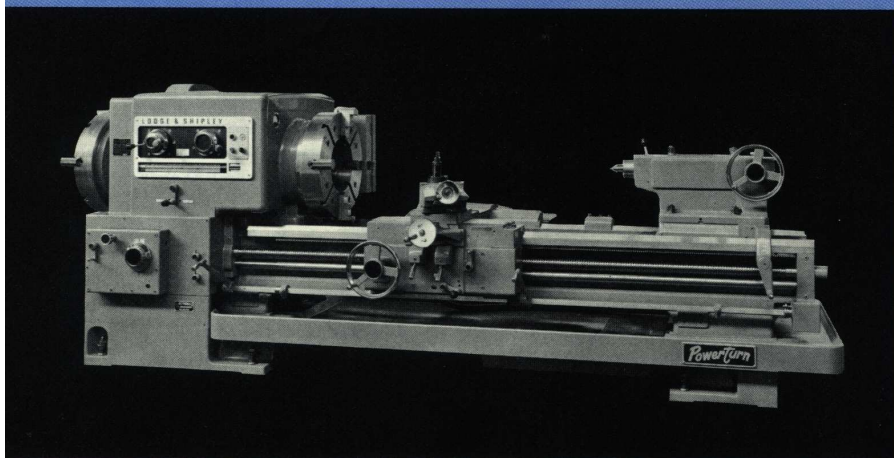
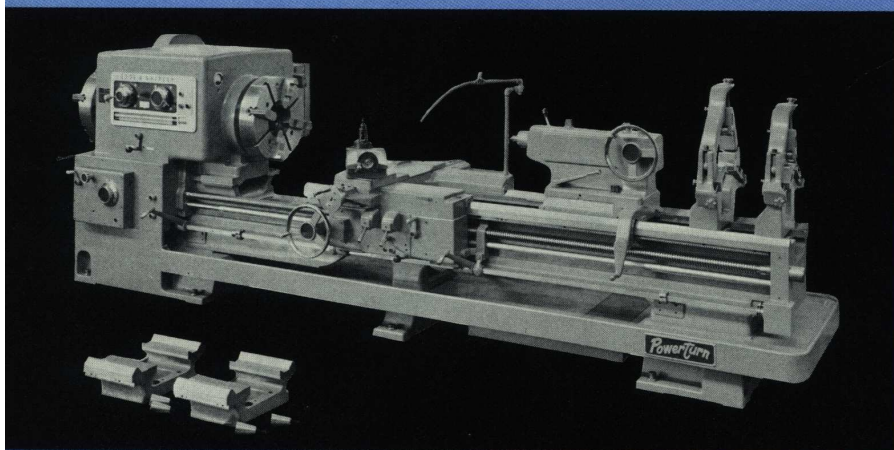
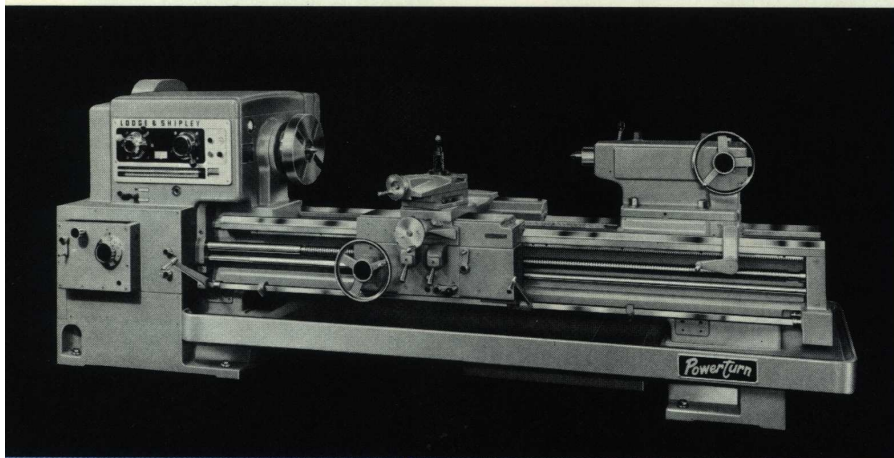
# POWERTURN LATHES . . . . . engine,

## Models 2516, 2516-27, 3220 and 3220-32

These larger and heavier Lodge & Shipley Lathes are specifically designed to provide ample power and rigidity for the heaviest cuts. They are engineered to meet the highest standards of workmanship and although large in size, ease of operation is an outstanding characteristic. Controls at head and carriage are conveniently grouped. The massive, but compactly designed headstock transmits maximum horsepower and provides a multiplicity of spindle speeds. There are speeds low enough for efficient

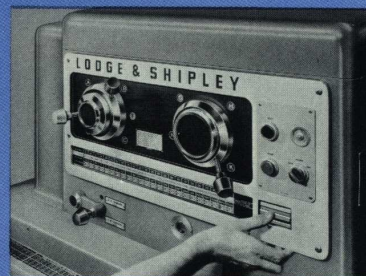
chasing and high enough to use with the newest cutting tools.

Only Lodge & Shipley offers elliptical girth bed construction which provides sustained torsional rigidity no other lathe can equal. Replaceable hardened and ground alloy steel outside bedways insure long lived accuracy. Your purchase of a POWERTURN Lathe assures you of the finest machine tool your money can buy.

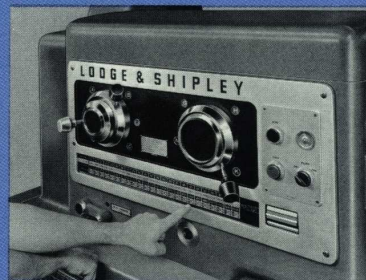


### FEATURING THE SPEED SELECTOR HEAD

The color-coded Speed Selector Head featured on these POWERTURN Lathes makes quick, easy and accurate speed setting almost automatic. It eliminates calculations, substitutes three simple steps:



Rotate drum-type cut speed indicator to show workpiece diameter. Read spindle speed directly below recommended surface speed (SFM).



Locate lever positions on easy-to-read chart. Maximum safe horsepower is also indicated and can be checked by referring to horsepower ammeter.



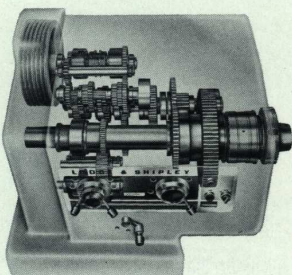
Set levers to proper position either by letter or by matching color.

## toolmaker, gap and hollow spindle

# LATHES



### headstock



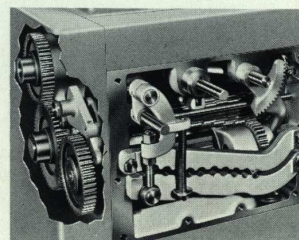
**24 spindle speeds—  
up to 1000 RPM  
up to 30 HP**

The Speed Selector headstock has an all-alloy steel spur gear transmission featuring shaved and flame-hardened gearing, hardened and ground alloy steel shafting and oversize precision anti-friction bearings. The headstock spindle has a three bearing mounting. The two front bearings are tapered and pre-loaded. They are positioned as close to the spindle nose as design will allow. The rear spindle bearing is a double row roller bearing. Spindle drive is through a large built-in multi-disc clutch providing 24 forward and 16 reverse speeds. A mechanical cone-type brake provides positive stopping of the spindle.

The spindle nose is hardened, and is ground on both OD and ID surfaces.

Automatic lubrication to the entire headstock is provided; a replaceable element full-flow oil filter guards the lubrication supply.

### feed & thread gearing



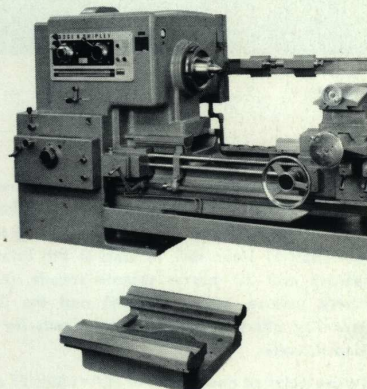
**55 quick changes in totally-enclosed gear box**

Arrangement of levers and easily-read index plate insures quick, easy selection of feeds, right and left-hand threads. Special gearing is easily applied. Totally enclosed to keep lubrication in, dirt out, entire gear box is automatically lubricated.

### specifications

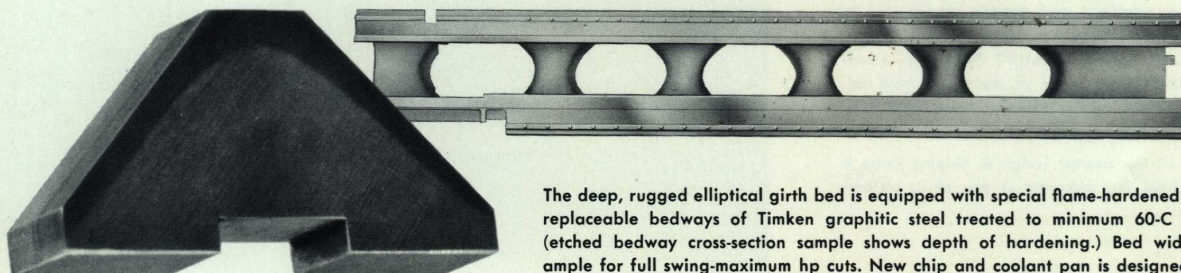
	ENGINE— TOOLMAKER		ENGINE		HOLLOW SPINDLE	
	2516	2516-27	3220	3220-32	2516— 8 7/8"	2516— 11 1/2"
swing over bed	26 1/2"	32 1/4"	34 1/2"	40 1/2"	26 1/2"	26 1/2"
swing over cross slide	20"	27 1/2"	26"	33 1/4"	20"	20"
swing through gap on gap lathe	40"	48"	48"	54 3/4"	40"	40"
gap admits in front of nose	16 1/2"	16 1/2"	19 1/8"	19 1/8"	16"	16"
center distance—base length	48"	48"	48"	48"	48"	48"
number of forward spindle speeds	24	24	24	24	24	24
spindle speeds—low range	9-500	9-500	7 1/2-422	7 1/2-422	8-451	6-338
intermediate range	12-650	12-650				
high range	18-1000	18-1000	9-500	9-500		
number of reverse spindle speeds	16	16	16	16	16	16
spindle speeds—low range	9-125	9-125	7 1/2-104	7 1/2-104	8-111	6-83
intermediate range	12-163	12-163				
high range	18-250	18-250	9-125	9-125		
maximum HP of motor	30	30	30	30	20	20
number of threads and feeds	55	55	55	55	55	55
range of threads per inch	1-64	1-64	1-64	1-64	1-64	1-64
range of feeds—thous. per rev.	.0025" to .160"	.0025" to .160"	.0025" to .160"	.0025" to .160"	.0025" to .160"	.0025" to .160"
approx. net weight—base length (lbs.)	12,000	12,500	18,000	18,500	13,750	14,500

### POWERTURN gap lathe



The specially constructed bed maintains rigidity, even with gap block removed. Tapered sleeves assure perfect alignment of the gap block. The gap allows swinging of work up to 50% larger in diameter than nominal swing capacity. Gap lathe carriage is provided with shortened head end carriage wings to permit moving the bridge and cross slide as close as possible to the gap opening. This feature reduces tool overhang.

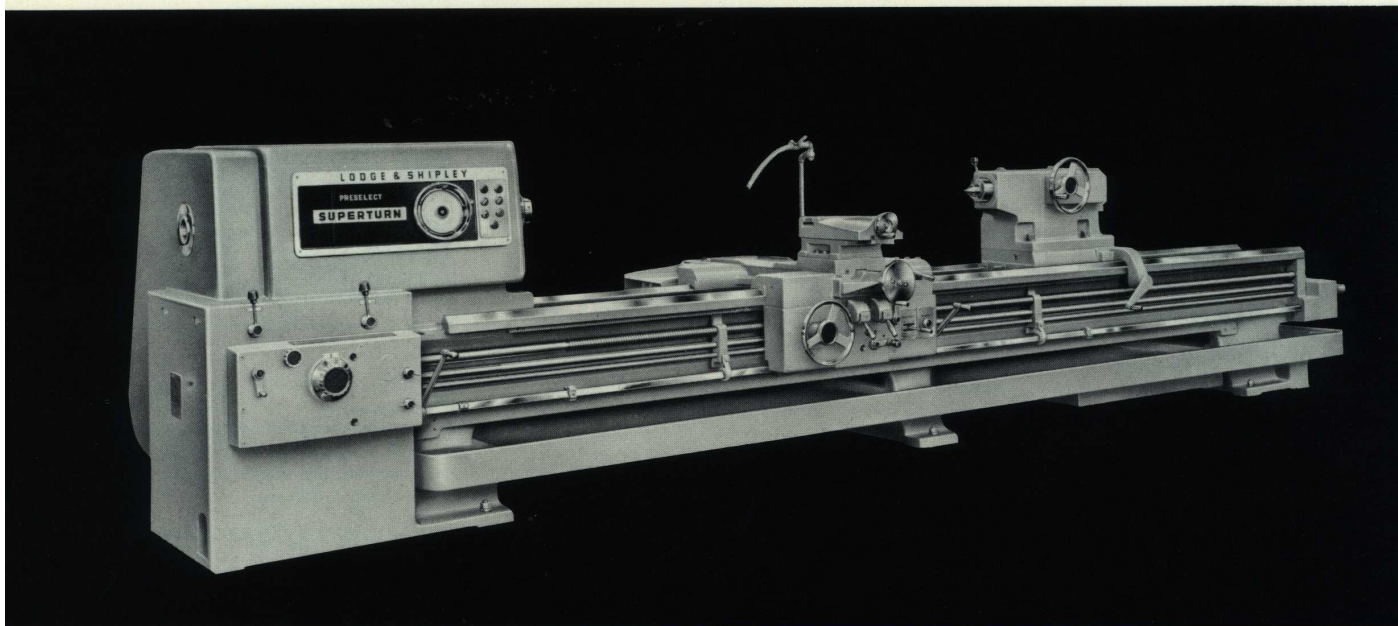
### bed and bedways—foundation of strength and accuracy



The deep, rugged elliptical girth bed is equipped with special flame-hardened alloy two-vee steel replaceable bedways of Timken graphitic steel treated to minimum 60-C Rockwell hardness (etched bedway cross-section sample shows depth of hardening.) Bed width and depth are ample for full swing-maximum hp cuts. New chip and coolant pan is designed for easy removal of chips; coolant sump and chip screen are built in near the tail end leg to keep screen and sump from loading up with chips.

# SUPERTURN ENGINE LATHE

## Models 2516 and 2516-21



All the advantages of POWERSHIFT preselection are brought to large, heavy turning jobs in this new SUPERTURN ENGINE LATHE capable of using up to 60 H.P. The POWERSHIFT Headstock as used in this lathe provides 32 forward and 32 reverse spindle speeds, (equipped with electric reverse—optional extra) and the Quick Change Gear Box offers 55 quick change feeds for right or left-hand threads.

A more detailed description of POWERSHIFT operation is to be found on page 3 of this catalog.

Four-way rapid power traverse is applied to the carriage and cross slide of the SUPERTURN to facilitate fast set-ups. Two adjustable automatic stops are also provided on the carriage, one for each direction of carriage longitudinal travel, operable when feeding only.

Long, dependable service under the roughest usage is assured with automatic lubrication to the headstock, driving pulley assembly, apron, quick change gear box, and gearing and tailstock ways on the bed. Force-feed lubrication is automatically applied to carriage ways on the bed and to the carriage cross slide ways.

The Lodge & Shipley SUPERTURN can be equipped with either a 45° COPYMATIC or a 90° COPYMATIC Hydraulic Tracer Unit as described on the next page. In combination, the COPYMATIC with the POWERSHIFT Preselector headstock brings to SUPERTURN users all the time-saving advantages inherent in each, along with the power and stamina to handle the heaviest turning jobs.

More information on this newest Lodge & Shipley lathe is readily available from the company or any of its authorized distributors.

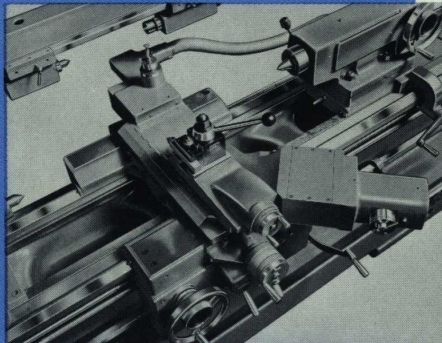
### specifications

	2516	2516-21
swing over bed and carriage	28	32½
swing over cross slide	16	21
swing through gap on gap beds	41½	44½
gap admits in front of nose	23%	23%
center distance—base length	48	48
number of forward spindle speeds	32	32
spindle speeds—low range	8-1016	8-1016
intermediate range	10-1246	10-1246
high range	12-1528	12-1528
number of reverse spindle speeds	32	32
spindle speeds—low range	8-1016	8-1016
intermediate range	10-1246	10-1246
high range	12-1528	12-1528
maximum HP of motor (high range)	60	60
number of quick change feeds and right hand and left-hand threads	55	55
range of threads per inch	1-64	1-64
feeds per revolution of spindle	.0025 to .160	.0025 to .160
approx. net weight—base length (lbs.)	18,000	18,500



## COPYMATIC TRACER CONTROLLED LATHES

### 45° COPYMATIC



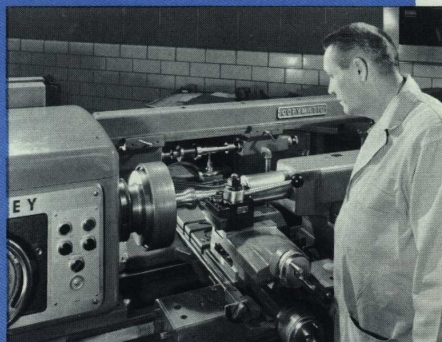
Lodge & Shipley's famous Copymatic hydraulic tracer controlled lathes combine distinctive features that result in outstanding accuracy and productive capacity. Because Lodge & Shipley offers a choice of hydraulic tracer lathes, you are assured of the correct type for your particular requirement. All Lodge & Shipley tracer lathes can be instantly changed over to standard lathe operation.

Shown here is the 45° COPYMATIC lathe. Using uninterrupted carriage feed, it turns any contour involving diameters or bores connected to faces by curves. Turning, facing or cross-center facing operations are performed with ease. All hydraulic control assures low maintenance, great sensitivity, accuracy and fine finish. Round or flat templates can be used. Electronic type variable speed drive providing constant cutting speed is available at extra cost.

#### specifications

	2013	2013-17	2516	2516-27	3220	3220-32
swing over bed & carriage wings	20½"	24¾"	26½"	32¼"	34½"	40½"
swing over cross slide	9¼"	14"	14"	21"	20¾"	28"
swing thru gap (gap bed lathes)	31"	34"	40"	48"	48"	54¾"
max. center distance (no center sup.)	78"	78"	72"	72"	96"	96"
length of stroke	52½"	52½"	6½"	6½"	6½"	6½"
maximum diameter change	8"	8"	9"	9"	9"	9"
shipping weight—base length	9,000	9,600	12,500	13,000	18,500	19,000

### 90° COPYMATIC

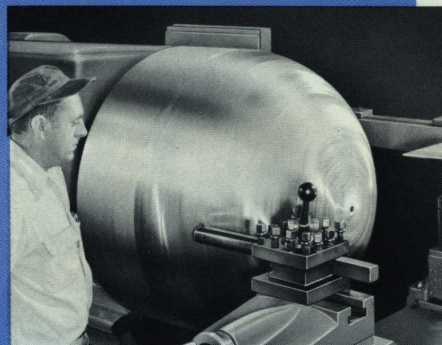


Controls quick, accurate duplication of square shoulders, grinding necks, tapers in both directions, chamfers, curved contours and straight diameters in both turning and boring operations and chasing of tapered threads; traces in either direction toward head or tail; minimum tail-stock interference; maximum tracing capacity; used with round or flat templates. New inverted stylus design on the 1610, 2013 & 2013-17 POWERTURN Lathes promotes safety, convenience and ease of set-up. Machine illustrated has POWERSHIFT pre-selected headstock and 4-Way Power Rapid Traverse apron, both optional at extra cost.

#### specifications

	1610	2013	2013-17	2516	2516-27	3220	3220-32
swing over bed & carriage wings	18"	20½"	24¾"	26½"	32¼"	34½"	40½"
swing over cross slide	8½"	11½"	16¾"	16¾"	19¾"	22"	28"
swing thru gap (gap bed lathes)	28"	31"	34"	34"	34"	43"	43"
max. center distance (no center sup.)	78"	78"	78"	72"	72"	96"	96"
length of stroke	4½"	4½"	4½"	4½"	4½"	4½"	4½"
maximum diameter change	9"	9"	9"	9"	9"	9"	9"
shipping weight—base length	8,300	9,000	9,600	12,500	13,000	18,500	19,000

### 360° DUAL TRACER

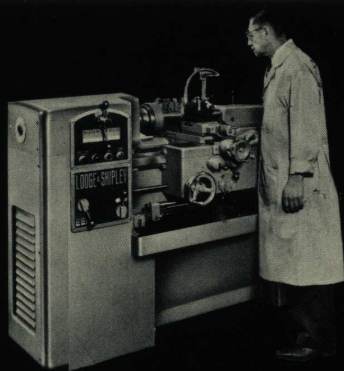


Jobs impossible on a conventional tracer lathes are handled with ease on a Lodge & Shipley 360° Dual Tracer. Complex curves and work pieces with a great variation in diameters are machined with all the versatility of a standard engine lathe. The job illustrated here is only typical of the many jobs this equipment can handle. More information on the Dual Tracer is readily available for the asking.

#### specifications

	2516	2516-27	3220	3220-32
swing over bed	28"	35¾"	36¾"	43¾"
swing over carriage wings	26½"	32¼"	34½"	40½"
swing over cross slide—front tools only	15"	22¾"	23"	30½"
front & rear tools	15"	22¾"	..	..
max. workpiece dia.—front tools only—turning	15"	22¾"	23"	30½"
facing	28"	35¾"	34½"	40½"
facing—gap lathe	..	..	48"	54¾"
max. work piece dia.—front & rear tools	15"	17¼"	..	..
max. cross slide travel—front tools only	18½"	18½"	20"	20"
front & rear tools	14"	12¼"	..	..
max. center distance—center support	Specify as Required			
shipping weight—base length	12,750	13,250	18,750	19,250

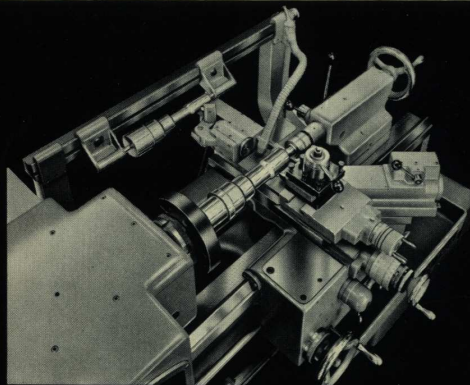
## HI-TURN LATHES



**HI-TURN PRODUCTION**

The Lodge & Shipley 10" HI-TURN Lathe is a completely new concept in lathes . . . new in size, design and even in price. It provides high speed turning, boring and facing capacity for production departments, where the use of a leadscrew is of no consequence.

**45° COPYMATIC** The Hi-Turn with 45° Copymatic Tracer Slide offers a precision tracer lathe at only 1/2 the cost of many lathes of comparable horsepower and rigidity. It's a big value in production, power, speed and accuracy. Can be instantly changed to standard production lathe work. Variable speed drive unit providing infinitely variable spindle speeds, available at extra cost.

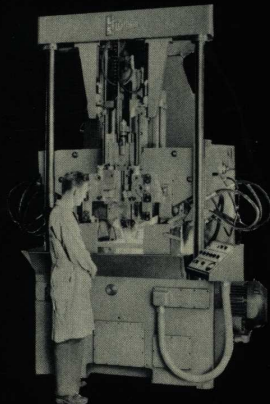


**HI-TURN 45° COPYMATIC**

### specifications

	HI-TURN PRODUCTION	HI-TURN 45° COPYMATIC
swing over bed and carriage wings	14 1/2"	14 1/2"
swing over cross slide	8"	5"
center distance—base length	20"	20"
number of spindle speeds	9	9
range of speeds—high RPM	202-3000	202-3000
motor horsepower	5	5
number of feeds	9	9
range of feeds—thous. per rev.	1.5-24	1.5-24
net weight—base length (lbs.)	3,400	3,600
length of stroke (45° tracer slide)	.....	2 1/4"
max. depth of contour on facing oper.	.....	1 3/4"
max. dia. change, one cross slide setting	3 1/2"	3 1/2"
max. cross slide travel, hand/prw. feed	8 3/4"	8 3/4"
max. dia. of round templates	.....	2 1/2"

## FLOTURN MACHINES



Originated by Lodge & Shipley, FLOTURN offers startling advantages in precision metal forming. FLOTURN starts with either a simple flat blank, machined blank, machined forging, drawn cup, wrapped and welded cylinder or centrifugal casting.

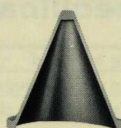
The FLOTURN Machine applies great pressure against the blank, causing the metal to flow, in a cold state, to the precise shape of the mandrel. These machines have been proved on parts for missiles, jet engines, ordnance, housewares and scientific utensils.

capacities from 12" x 15" (dia. & length) to 120" x 120" (dia. & length)

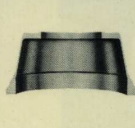
### typical vertical FLOTURN parts



stainless missile  
nose cone



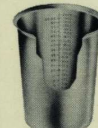
copper shaped  
charge cone



alloy steel  
motor mount



stainless  
mixing bowl



stainless  
engraved beaker



**THE Lodge & Shipley COMPANY**

**3055 COLERAIN AVENUE • CINCINNATI 25, OHIO**

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