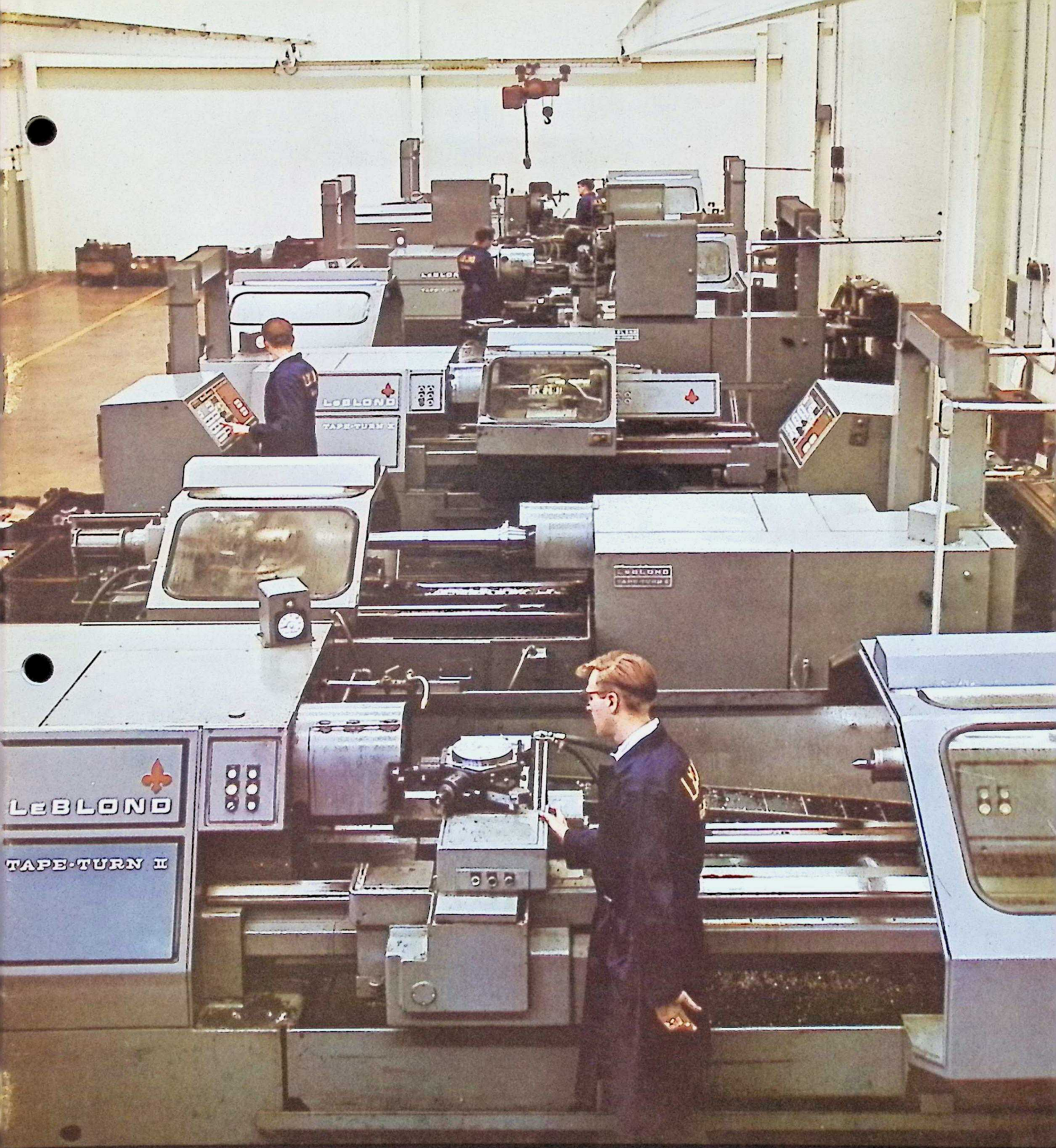


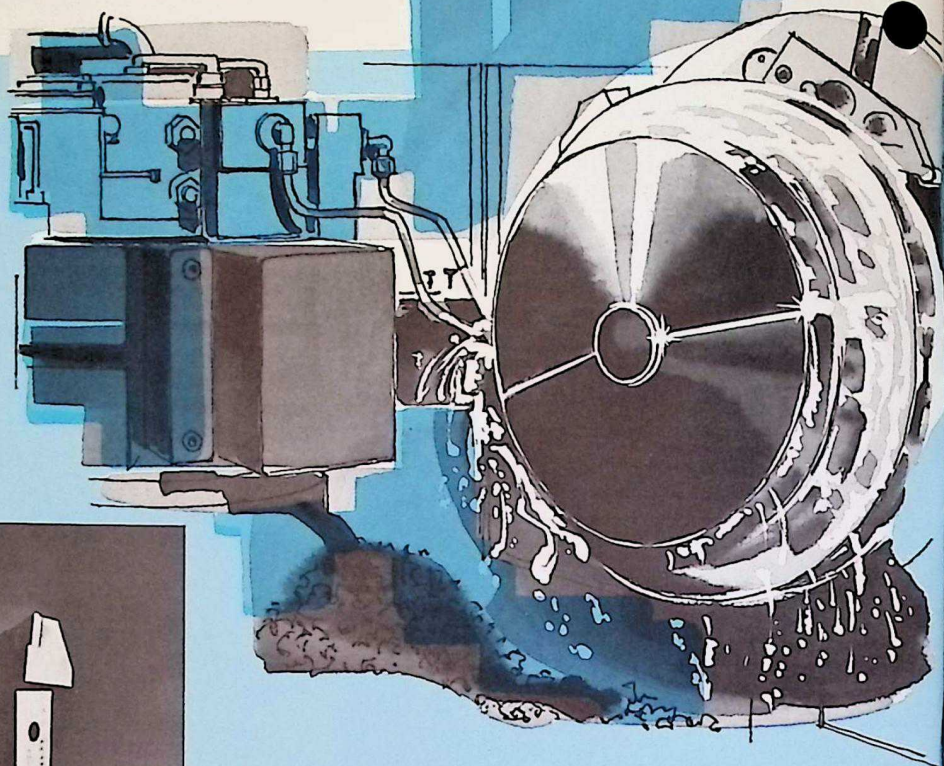
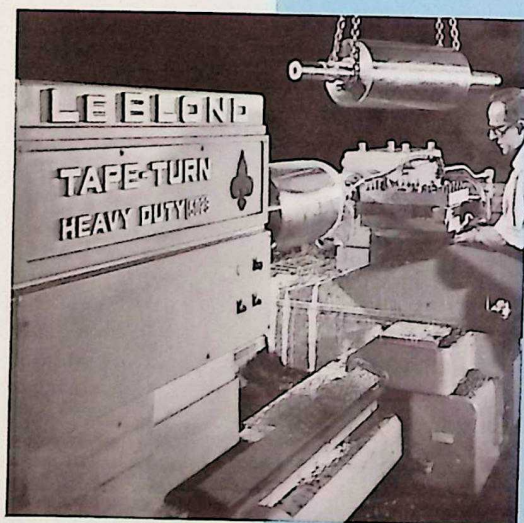
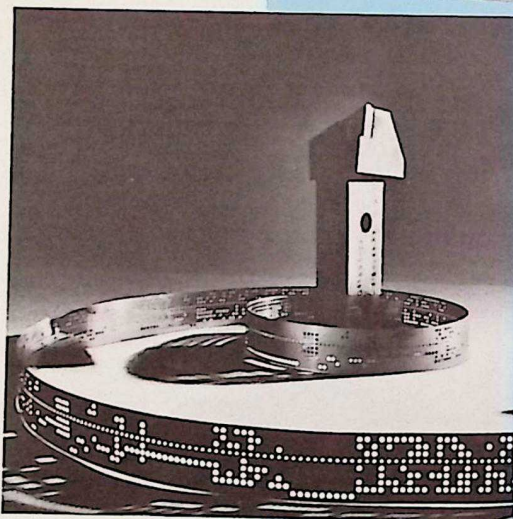


 **LEBLOND MACHINE TOOLS**



WORLD'S LARGEST BUILDER OF A COMPLETE LINE OF LATHES

NUMERICALLY CONTROLLED LATHES



Numerical control expands management control. NC moves decisions from the shop floor to the front office, and increases management choice and predictability.

To make the toolpoint more directly responsive to management commands, very few companies have done as much as LeBlond. In addition to Tape-Turn Lathes, LeBlond has also developed supporting software which gives you programming speed and design flexibility which you have never known before.

LeBlond expands your control over prime management functions: planning and handling of manpower and management of cost structures.

We invite you to expand your knowledge about LeBlond Tape-Turn Systems.

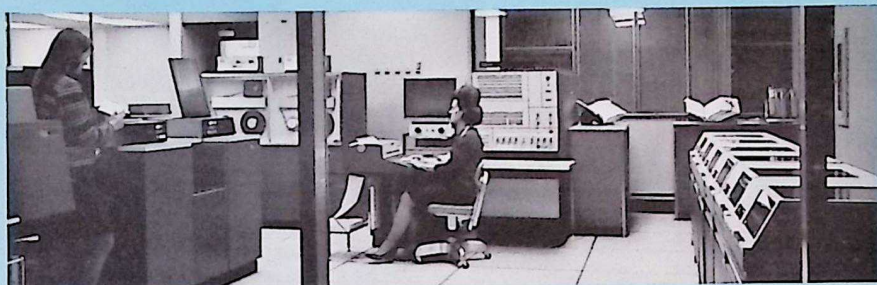
The descriptions, specifications and illustrations contained herein were correct at the time of printing. Machines built since then may differ slightly due to the LeBlond policy of continuous product improvement.

LeBLOND'S NUMERICAL CONTROL TURNING SYSTEM

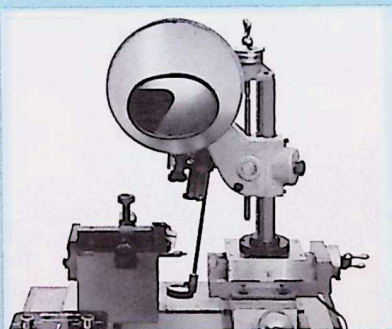
All models of LeBlond Tape-Turn Lathes are offered as part of a system. This system provides computer programming. No longer need the complexities of computer language and application limit the profit-producing possibilities of tape control. Now, add to this a choice of tooling, standardized cutting tools and precision tool setting. The result is an exclusive combination.

which will enable lathe users everywhere to justify LeBlond continuous path turning.

In addition to the lathe itself the LeBlond N/C Turning System offers (1) LeBlond processors, post processors and pre-processors; (2) optical tool setting gage; (3) set of cutting tools; (4) tooling arrangement option; (5) tooling library with tooling simulator.

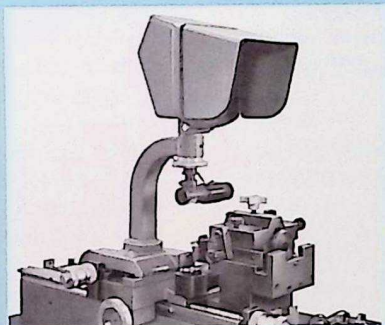


OPTI-SET



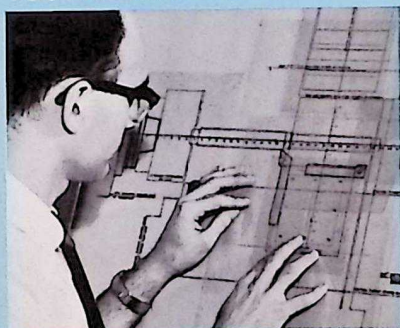
LeBlond's optical setting gage makes it possible to adjust a cutting tool in a fixture so that the tool will be in the precise programmed position in the turret block.

OPTI-GAGE



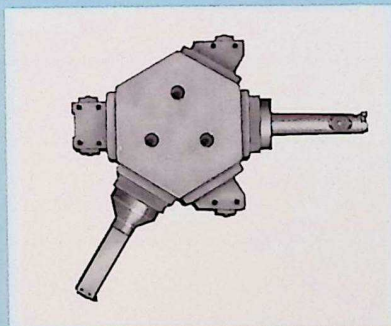
Similar to the Opti-Set gage except that it can be used for single point tooling, and also with boring bars up to 14" overhang.

TOOLING SIMULATOR



LeBlond's tooling simulator, is a 1/2 scale tooling model which your programmer can use to preplan the tool path and visually check clearances for all motions.

STANDARD INSERT TOOLING



Indexable turrets permit use of standard insert tooling, and reduce the number of tools for all basic operations.

CONVENTIONAL LATHES



World's largest builder of a complete line of lathes . . .

There's practically always a LeBlond lathe suited ideally to your turning requirements. No need to choose from a limited line, thereby making your investment less profitable.

Pick any one of nine Heavy Duty Models that will serve you best.

Many lathe users do not need the weight and horsepower of the Heavy Duties. The Regal is for them. The low priced lathe with the BIG LATHE features, is offered in six models—the widest range of such turning equipment on the market.

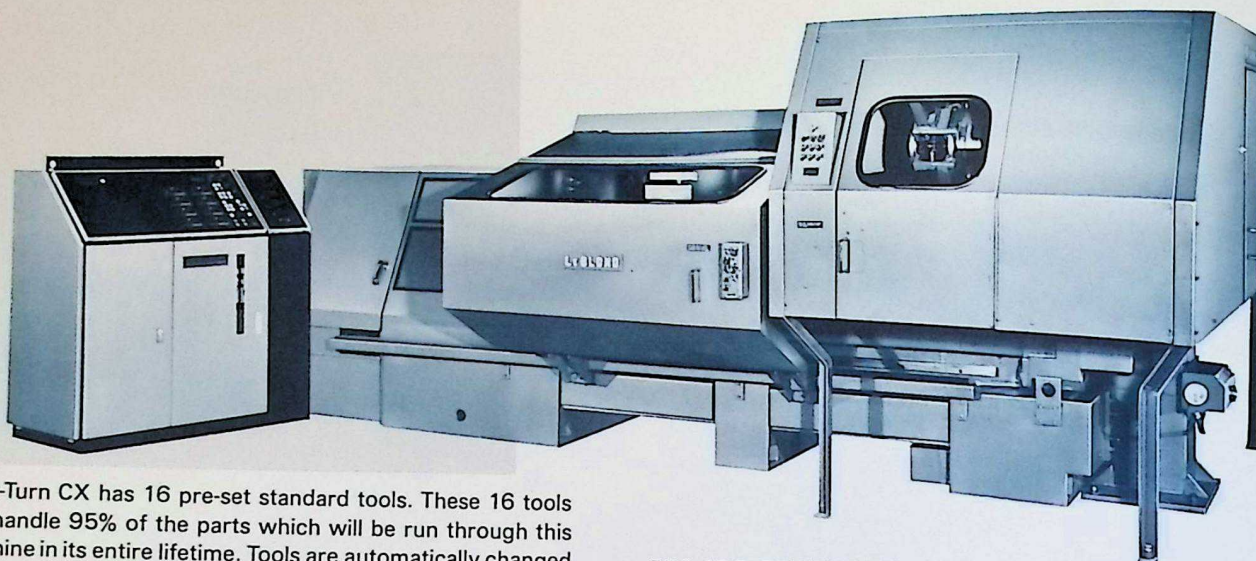
Perhaps tracers are for you. We will apply any one of three tracing systems.

Lathes for special needs round out the line. There are Roll, Missile, Toolroom, Gap Bed and Hollow Spindle Models.



LEBLOND

TAPE-TURN CX



Tape-Turn CX has 16 pre-set standard tools. These 16 tools will handle 95% of the parts which will be run through this machine in its entire lifetime. Tools are automatically changed by tape command, loaded into cutting position and cutting within 30 seconds, *without interrupting the turning cycle.*

Set up time for Tape-Turn CX is only 3 to 5 minutes, as opposed to the several hours required by most other machines.

The 2 station turret allows the programmer to plan clearance for just one tool. This virtually eliminates tool interference. And tool layouts are no longer required.

Tape-Turn CX increases machine cutting time which, in turn, increases both production and profits. Production level is constant, dependable, and predictable, and profits climb with increased, predictable production.

MAJOR FEATURES

- Tape-Turn CX is the first N/C chucking lathe with a non-interruptive tool changer. It continues to manufacture parts while the tools are changed automatically by tape command.
- The rotating magazine or tool storage rack has a capacity for 16 pre-set tools. It handles a complete variety of lathe tools: roughing, contouring, threading, drilling and boring up to 15 inches.
- With the availability of tools, set up time is lowered to 3 to 5 minutes. Tape-Turn CX can produce more quality parts in less time: 7 times faster than a conventional chucking lathe and 2 times faster than most other N/C chucking lathes.

SPECIFICATIONS/TAPE-TURN CX

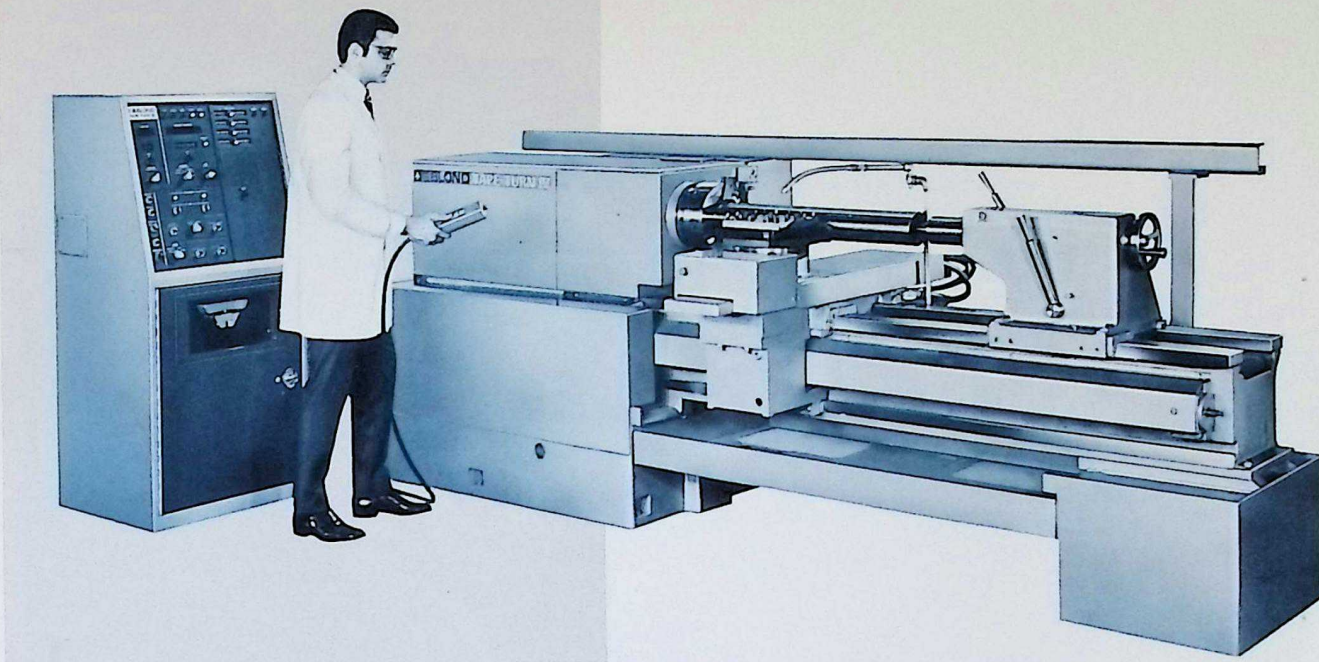
GENERAL	
Swing over bed and carriage wings	30"
Swing over cross slide	20"
Stroke, length axis—base length of bed	43-1/2"-11'6"
HEADSTOCK	
Spindle speeds, range (rpm)	9-1200
Speed points in each clutch range	90
Speed points in each gear range	540
Spindle nose	11" A-1
CARRIAGE & SLIDES	
Length on ways	40"
Power turret, tape commanded, positions	2
Bridge width	15-1/2"
FEEDS	
Length or cross, in. per min.	0 to 100
Increment of feeds, in. per min.	.1
TOOL CHANGER—Type, Non-Interruptive	
Tool capacity	16
Maximum tool weight, lbs.	80
MOTOR	
Maximum motor hp and rpm (standard)	40,280/1700/2800
SHIPPING DATA	
Domestic shipping weight, base length with average accessories, and electrics	21,000 lbs.
Floor space, base length	198" x 105"
Floor space, electric console	38" x 28"

EQUIPMENT LISTINGS

Basic Lathe Equipment
Fully supported headstock on L-bed construction.
Precision feed screws—length and cross—with preloaded, recirculating ball bearing unit.
Hardened and ground steel bed ways—front and rear.
Hardened and ground cross slide ways.
Turret.
Chip pan.
Power track for electrics, and hydraulics to carriage.
Pressurized turret compartment.
One-year warranty on complete machine including all electrical controls.
16 tool adapters.
Hydraulic and pneumatic power supplies.
Pump and piping and coolant manifold.
Threading capability.

LEBLOND

TAPE-TURN IV



The LeBlond Tape-Turn **IV** is the lowest priced, big capacity completely Numerically Controlled lathe ever offered by any builder. It is an all new design built for years of three shift, rugged, accurate and predictable production.

MAJOR FEATURES

- The only utility requirement for Tape-Turn **IV** is 3-phase 230/460 electrical power. There is no need for compressed air and no need for cooling water.
- The machine is available with turrets for turning, chucking

and boring. Turrets may be changed in a matter of minutes 9½ inch coupling diameter assures heavy cut rigidity. Hydraulic indexing is precise to any of 12 positions and standard tooling may be used in any of the turrets.

- An all new bed design combines the best of the slant bed and flat bed configurations. It provides unequalled stability while eliminating any chip disposal problem.
- The chuck is positioned at the front of the headstock giving unequalled access to the workpiece without machine interference.

SPECIFICATIONS-TAPE TURN IV

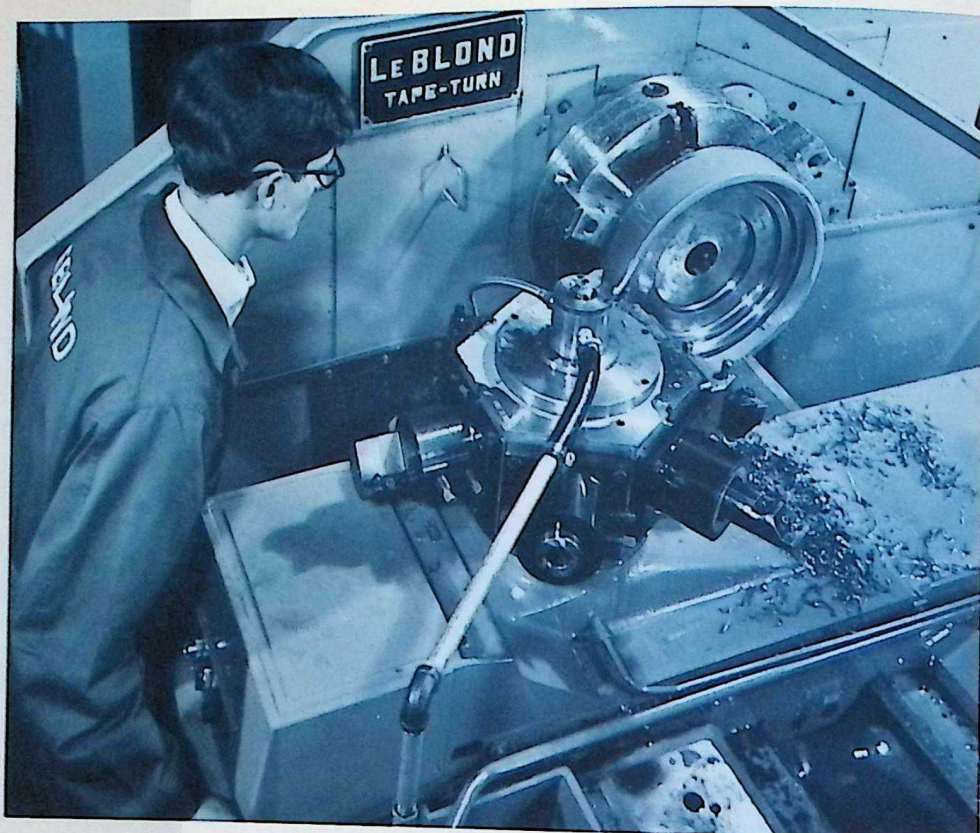
GENERAL	
Swing over bed and carriage wings	20"
Swing over cross slide	12"
Distance between centers	54" to 126" Max.
HEADSTOCK	
Clutch ranges, by tape	2
Spindle speeds, tape commanded	50-2500 rpm
Speed points in each clutch range	99
Spindle nose	8" A-1
TAIL STOCK	
Spindle diameter	3-5/8"
Spindle travel	10"
CARRIAGE & SLIDES	
Turret slide travel	17"
Power turret, tape commanded, positions	12
Coupling, diameter	10"
FEED	
Length or cross, in. per rev.	0-.9999"
Increment of feeds, in. per rev.	.0001
BED	
Width	16-1/2"
MOTOR DATA	
Motor and rpm (standard)	20 H.P. (continuous duty)/1800
SHIPPING DATA	
Domestic shipping weight, base length with average accessories, and electrics	9,000 lbs.,
Floor space, base length	134" x 41"

EQUIPMENT LISTING

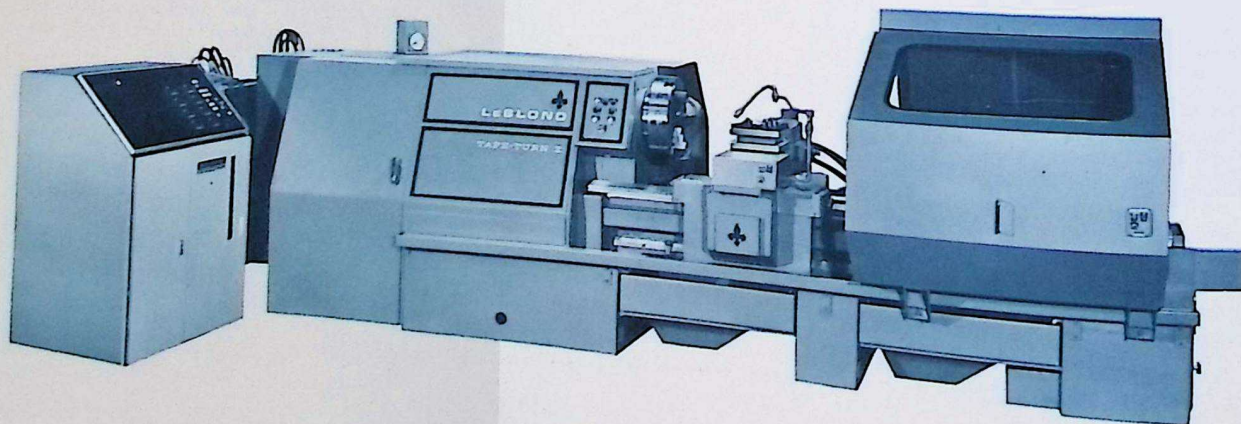
BASIC LATHE EQUIPMENT
 Hardened and ground steel bed/tailstock ways
 Hardened and ground steel cross slide ways
 Turret—Universal square
 Chip Pan
 In-built anti-friction tailstock spindle
 Coolant Shield
 Pump piping and coolant manifold
 Hydraulic power supply
 Threading capability
 LCCL feedback system



LEBLOND TAPE-TURN II



TAPE-TURN IIC



TAPE-TURN IIS

MAJOR FEATURES

• This machine is offered in two basic forms. Tape-Turn IIS is arranged primarily for between-centers operations while Tape-Turn IIC is ideal for chucking work.

• Low initial investment for Tape-Turn II opens the possibility to create an N/C turning center, consisting of two lathes under the supervision of one operator.

• Do not overlook the advantages of the N/C package concept reviewed on the previous page.

• All LeBlond Tape-Turn lathes can earn dramatic savings in setup time, reduced number of operations, floor to floor time, tooling costs, measuring time, ratio of machining to non-cutting time, operator learning time, operator efficiency, inventory space and taxes.

Precision feed screws—length and cross—with preloaded, recirculating ball bearing unit and automatic compensation

• hardened and ground steel bed ways, front and rear • hardened and ground cross slide ways • pump and piping • chip pan • coolant shield • centers and necessary wrenches • General Electric contouring control system • LeBlond magnetic control panel and necessary cabling • one-year warranty on complete machine including all electrical controls.

TAPE-TURN IIS ONLY:

12-position, tape controlled, square turret at front • small face plate • heavy duty, anti-friction tailstock—worm and rack design • 30 hp, SCR 1.6 constant hp DC motor, 90 speed points

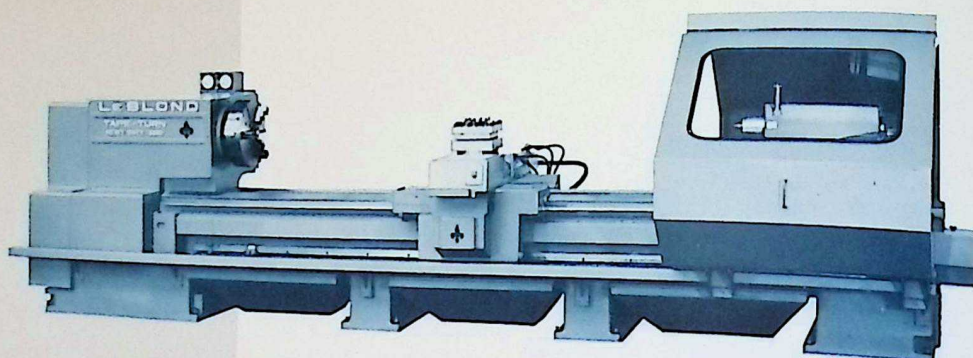
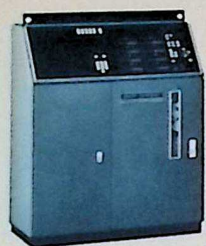
TAPE-TURN IIC ONLY:

12-position hexagonal turret • 40 hp, SCR 1.6 constant hp DC motor, 90 speed points

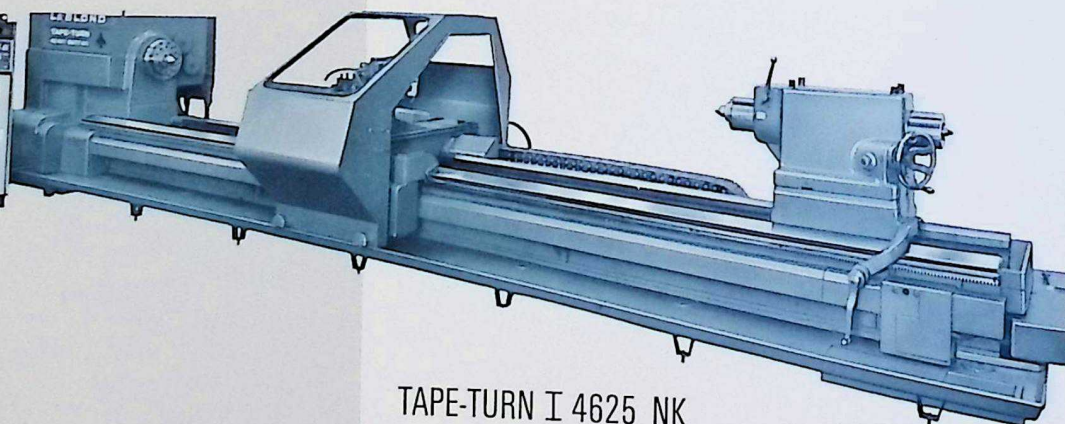
SPECIFICATIONS—Tape-Turn II	IIS	IIC
GENERAL CAPACITY		
Swing over bed and carriage wings.....	26"	30"
Swing over cross slide.....	13"	20"
Basic center distance.....	54"	42" stroke
HEADSTOCK		
Spindle speeds, number.....	1080	1080
Spindle speeds, range in rpm.....	5 to 1800	3 to 1200
Spindle, size of center, Morse No.....	4	4
Spindle nose, taper key drive, size.....	8" A1	11" A1
BED		
Width.....	20"	20"
CARRIAGE & SLIDES		
Length on ways.....	32"	40"
Power turret, tape commanded, positions.....	12	12
Curvic coupling, diameter.....	9"	11"
FEEDS		
Length or cross, in. per min.....	0 to 200	0 to 200
Increment of feeds, in. per min.....	.1	.1
TAILSTOCK		
Spindle diameter.....	4½"	
Spindle travel.....	12½"	
MOTOR DATA:		
HP and rpm (1.6 constant HP).....	30HP 280/1700/2800	40HP 280/1700/2800
SHIPPING DATA		
(For basic machine with average accessories and electrics)		
Domestic shipping weight.....	17,400 lbs.	17,760 lbs.
Floor space, basic machine.....	164" x 52"	164" x 52"



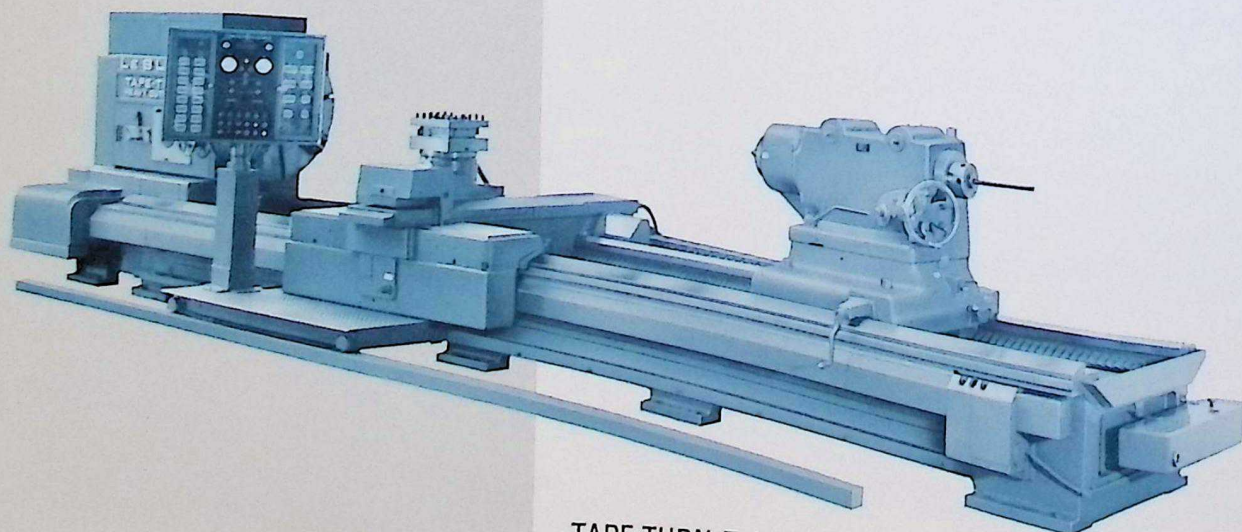
LEBLOND TAPE-TURN I



TAPE-TURN I 3220 NF



TAPE-TURN I 4625 NK



TAPE-TURN I 6640 WB

MAJOR FEATURES

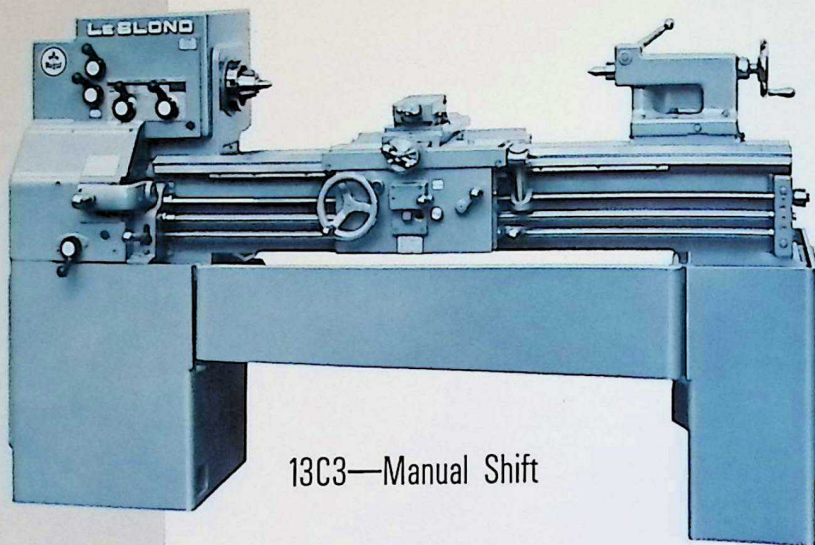
- Tape-Turn I is the most sophisticated form of N/C lathe offered by LeBlond. It was the first machine tool to be teamed up with the General Electric Mark Century contouring control. This is a static, solid-state, continuous path control with no relays, stepping switches or electronic tubes in its logic circuits. Data input is from an 8-channel tape.
- Control commands three modes of operation: (1) straight lines, parallel to Z or X axes or at any angle to them; (2) clockwise or counter-clockwise circular arcs up to 10" radius, including compound curves blended to many arcs; and (3) dwells for speed changing, turret indexing, corner cleanup, etc.
- Tape also commands feeds, speeds, tool turret indexing and miscellaneous functions such as planned stops for checking, coolant on-off and feed gear range. Thread chasing may be programmed into the cycle as required.
- The Mark Century has a repeat electrical positioning accuracy of ± 0.000060 " with a system feedback resolution of 0.000050 ". Zero offset is provided over the full range of travel. Duplicated control functions on console permit operator to override the tape manually.
- Standard, insert-type tooling is accepted by the 4 available turret tool holders. Repeatability of turret position is ± 3 seconds of angle.

STANDARD EQUIPMENT

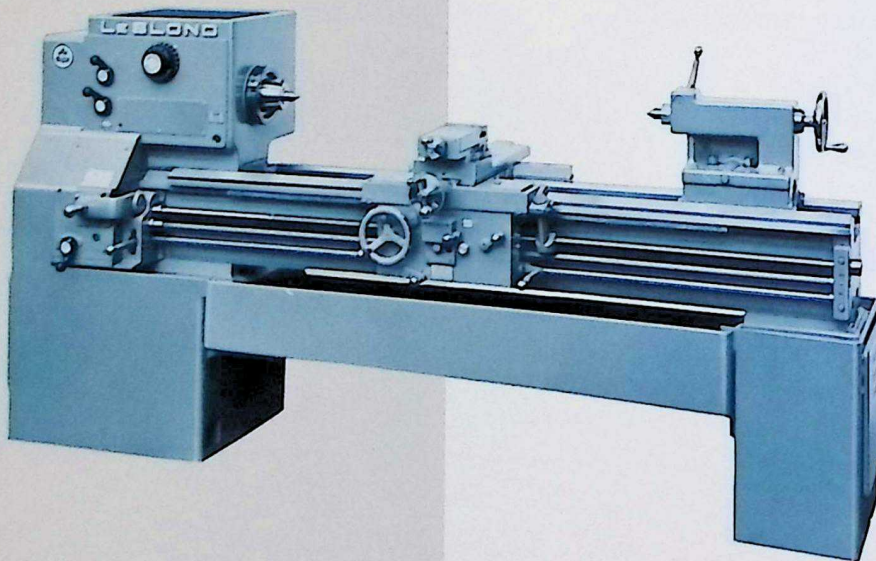
Precision feed screws—length and cross—with preloaded, recirculating ball bearing unit and automatic compensation

- hardened and ground steel bed ways, front and rear
- hardened and ground cross slide ways
- pump and piping
- chip pan
- centers and necessary wrenches
- General Electric contouring control system
- one-year warranty on complete machine including all electrical controls.

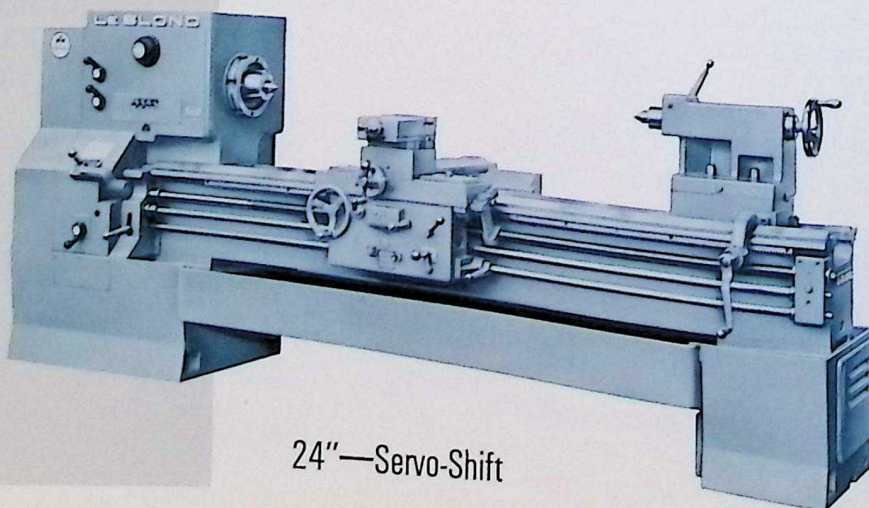
SPECIFICATIONS—TAPE-TURN I	3220 NF	4625 NK	6640 Wide Bed
GENERAL CAPACITY Swing over bed and carriage wings..... Swing over cross slide..... Basic center distance.....	32" 20" 72"	46" 25" 60"	66" 40" 72"
HEADSTOCK Spindle speeds, number..... Spindle speeds, range in rpm..... Spindle, size of center, Morse No..... Spindle nose, std. taper key drive, size.....	540 7 to 1075 5 11" A-1	540 1 to 666 6 L-3	Optional Head NK 60 or 180 .75 to 300 4-1/2" dia. flange Face Plate Drive
BED Width.....	24-1/2"	34"	60"
CARRIAGE AND TURRET SLIDE Carriage, length on ways..... Turret slide travel..... Turret, standard.....	40" 22-1/2" 11" Square	46-3/4" 28" 15" Square	78" 43-1/2" 15" Square
FEEDS Range of feeds, in. per min.....	0 to 100	0 to 50	0 to 50
TAILSTOCK Spindle diameter..... Spindle travel.....	6" 15"	8" 18"	12" 6" (22" Extension) 13" Optional Power
MOTOR DATA HP up to.....	50	75	100
SHIPPING DATA Net wt., basic machine with average accessories and electrics..... Floor space, basic machine.....	27,800 lbs. 143" x 59"	41,750 lbs. 170" x 87"	61,700 lbs. 204" x 108"



13C3—Manual Shift



19E7—Servo-Shift



24"—Servo-Shift

PRODUCTION LATHES

MAJOR FEATURES

- Designed and built with the same care as LeBlond Heavy Duty Lathes, Regals give long life, precision production, minimum maintenance and dependability expected only from much higher priced machines.
- Manual speed shift standard; Servo-Shift optional at slightly higher cost. Speed preselection saves further time on Servo-Shift machines.
- Combination gear-belt drive with 8 geared and 4 timing belt speeds. Spindle supported by three anti-friction, high capacity bearings for heavy loads. Precision aligned to exacting standards.
- Bed has compensating guideways, assuring long-time accuracy and minimum wear. Equipped with both feed rod and leadscrew. Automatically lubricated quick-change box through which 48 feed and thread changes are provided.
- Rigid apron and carriage guarantee accurate tool guidance and efficient feed-power transmission. Rugged tailstock

features positive spindle clamping. Large chip pan slides out for easy chip removal.

STANDARD EQUIPMENT

Small face plate • hardened and ground replaceable steel bedways • graduated compound rest • tool post • taper spindle sleeve • levelling plates • apron spindle control • chasing dial • chip pan • feed drive safety clutch • centers • necessary wrenches • machine arranged for multiple V-belt motor drive but not including motor, electrical controls or brake.

OPTIONAL EQUIPMENT

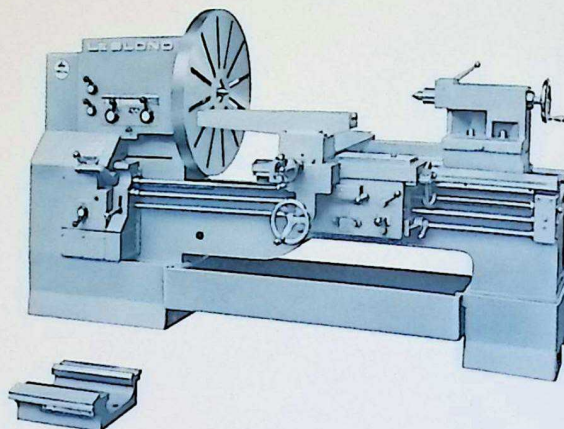
Servo-Shift • Tracers • turret tool post • taper attachment • large face plate • connected rest • steady rest • follow rest • ball chasing stop • micrometer carriage stop • six position multiple length stop • adjustable thread cutting stop • special centers • metric transposing gears • pump and piping • chucks • tools.

SPECIFICATIONS	13C3	15C5	17E5	19E7
GENERAL CAPACITY				
Swing over bed and carriage wings.....	15½"	15½"	19¼"	19¼"
Swing over cross slide.....	9½"	9½"	12¼"	12¼"
*Center distance range (in increments of 12").....	42" to 78"	42" to 78"	54" to 126"	54" to 126"
HEADSTOCK				
Spindle speeds, number.....	12	12	12	12
Spindle speeds, range in rpm (low).....	30 to 1200	30 to 1200	25 to 1000	25 to 1000
Spindle speeds, range in rpm (high).....	45 to 1800	60 to 2400	40 to 1600	45 to 1800
Spindle, size of center, Morse No.....	3	3	4	4
Spindle, diameter of hole, straight.....	1½/32"	1½/32"	1½/16"	1½/16"
Spindle nose, taper key drive, size.....	L-0	L-0	L-1	L-1
BED				
Width.....	12½/16"	12½/16"	14¾"	14¾"
CARRIAGE				
Bearing surface, square inches.....	62	62	86	86
Bridge width.....	6¼"	6¼"	7¾"	7¾"
Cross slide travel.....	8¾"	8¾"	11¼"	11¼"
FEED AND THREAD RANGE				
Feed changes, number.....	48	48	48	48
Thread changes, number.....	48	48	48	48
Range of feeds per revolution.....	.0018" to .104"	.0018" to .104"	.0018" to .104"	.0018" to .104"
Range of threads per inch.....	4 to 224	4 to 224	2 to 112	2 to 112
TAILSTOCK				
Spindle diameter.....	1½/16"	1½/16"	2½/16"	2½/16"
Spindle travel.....	5"	5"	7"	7"
MOTOR DATA				
HP.....	3	5	5	7½
SHIPPING DATA (For basic machine with average accessories)				
Net weight, approximate.....	2,430 lbs.	2,430 lbs.	3,860 lbs.	3,860 lbs.
Floor space required (With taper attachment).....	90" x 40"	90" x 40"	112" x 50"	112" x 50"

* Longer lathes available on special order.

REGAL PLAIN BED GAP LATHES

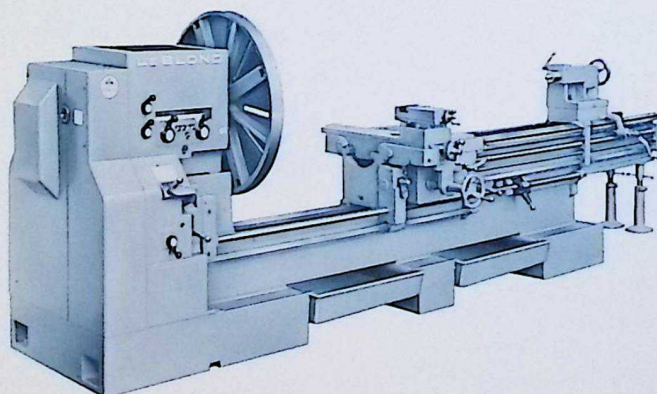
This lathe permits the turning of odd shapes or workpieces with wide flanges or projections. Swing through the gap is increased about 50%. These machines have a special carriage with cross slide to the left for more efficient tool placement.



SPECIFICATIONS	24"
Swing through gap.....	37"
Distance, face plate to end of gap.....	12"
Carriage length on ways.....	27"
Cross slide travel.....	19-1/2"

REGAL SLIDING BED GAP LATHES

With bed closed, this machine functions as a regular engine lathe. Its special bed slides open to form a gap for odd shaped parts and large diameter jobs. Between center distance is increased up to 50% with bed fully extended. Both the above views show the bed extended and supported by jacks supplied for that purpose.

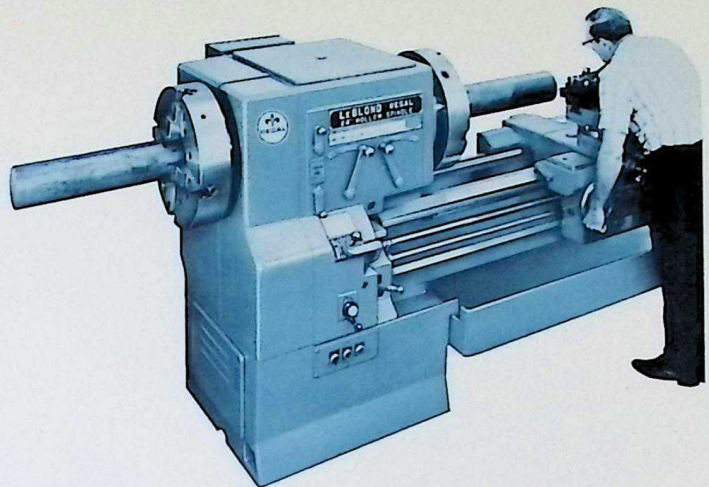


SPECIFICATIONS	19E7/36"	24"/52"
Swing through gap.....	36"	52"
Distance, face plate to end of gap, bed extended (basic mach.)..	20"	36"
Center distance, bed closed (basic machine).....	30"	48"
Center distance, bed extended (basic machine).....	50"	84"
Bed width.....	14 3/4"	17"
Carriage length on ways.....	22"	27"
Cross slide travel.....	15 1/2"	19 1/2"

PRODUCTION LATHES

REGAL HOLLOW SPINDLE LATHE

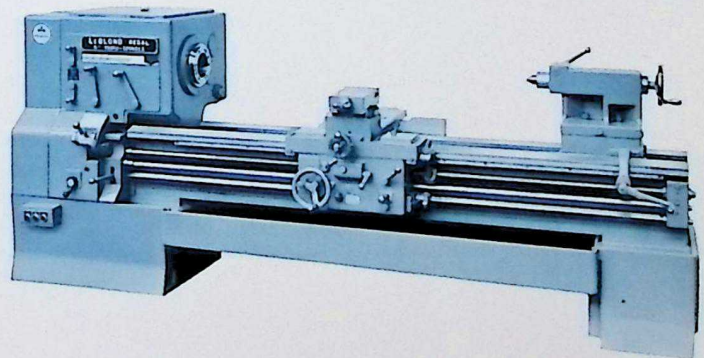
Parts can be turned which are considerably longer than the normal center distance. This is accomplished by extending the workpiece through the hollow spindle, which has a 9" hole. Chucks may be fitted to both ends of the spindle.



SPECIFICATIONS	24"
Spindle speeds, number.....	12
Spindle speeds, range in rpm.....	6 to 400
Spindle nose flange diameter.....	15"
Size of hole through spindle.....	9"
Max. hp.....	15

REGAL 24" THRU-SPINDLE

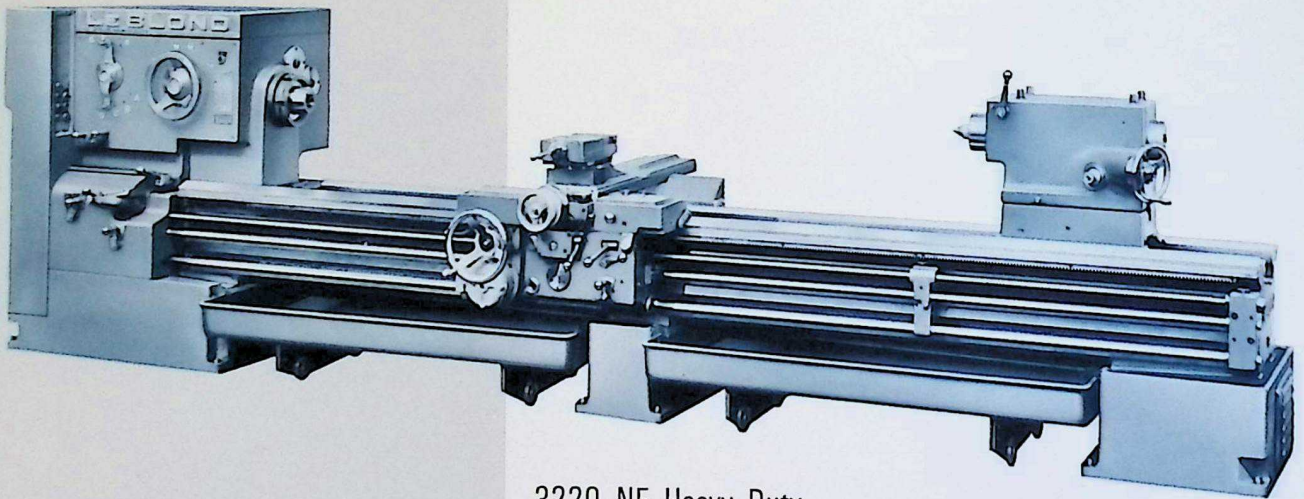
Here is a 20 hp lathe, the hole in the spindle of which will accept work up to 5" in diameter. Long shafts or tubes may be extended through the spindle for machining, eliminating the need for more costly, long bed lathes for such occasional jobs. A center adapter can be applied for between center operations.



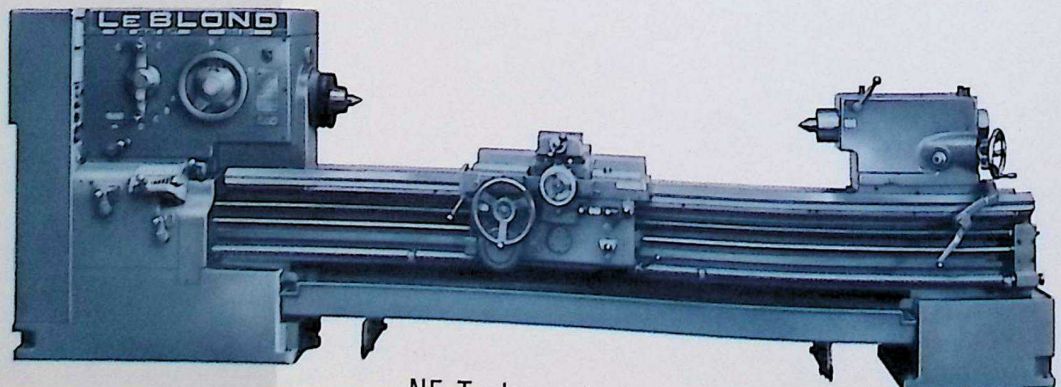
SPECIFICATIONS	24"
Spindle speeds, number.....	12
Spindle speeds, range in rpm.....	12 to 900
Spindle nose flange diameter.....	8"
Size of hole through spindle.....	5 1/4"
Max. hp.....	20



LEBLOND NF HEAVY DUTY



3220 NF Heavy Duty



NF Toolroom Lathe

HEAVY DUTY LATHES

MAJOR FEATURES

- 36 speeds with accurately ground spindle driven through heavy spur gears. Spindle runs in 4 high capacity, precision, anti-friction bearings.
- At any given speed, only gears and shafts transmitting power are engaged.
- Combination electric clutch and brake for starting, stopping and jogging, with rheostats to give full control over the widest range of workpiece sizes.
- Bed cast "L" shape to provide extra-solid headstock support at rear.
- Replaceable bed ways of hardened and ground steel. Compensating vee-way design assures accurate alignment and at the same time directs cutting forces into the massive bed.
- Sturdy carriage guided on the front way only; drive from rack or leadscrew is directly below front way.
- Hardened and ground, replaceable, square lock, cross slide ways reduce wear; provide more strength and allow more accurate movement with less maintenance.
- Four-way power rapid traverse saves tool positioning time.

• Feed and thread changes through totally enclosed quick change box. Feeds can be reversed at the apron.

• Tailstock worm and rack locks the spindle against thrust, provides extra spindle travel and gives full support even when spindle is fully extended.

STANDARD EQUIPMENT

Hardened and ground crossfeed screw and compensating crossfeed nut • hardened and ground replaceable steel bed ways, front and rear • small face plate • compound rest • No. 2 tool post • chasing dial • ball chasing stop • shear wipers • electric clutch and brake • motor drive sheave • hardened and ground cross slide ways • tailstock mover • four-directional power rapid traverse • centers and necessary wrenches.

OPTIONAL EQUIPMENT

Apron control rpm selector and rpm calculator • six-speed headstock • two-speed tailstock • anti-friction tailstock spindle • large face plate • tracers • taper attachment • chip pan • steady rest • follow rest • face plate jaws • turret tool block • pump, piping and tank • connected rests • plain block rests • positive length stops • single or multiple positive cross stops • coarse threading attachment • metric transposing gears • reverse to leadscrew • air lift tailstock.

SPECIFICATIONS	2516 NF	3220 NF		2516 NF	3220 NF
GENERAL CAPACITY			FEED AND THREAD RANGE		
Swing over bed and carriage wings.....	25"	32"	Feed changes, number.....	60	60
Swing over cross slide.....	16"	20"	Thread changes, number.....	60	60
*Range of center distances (in increments of 24").....	48" to 360"	48" to 360"	Range of feeds per revolution.....	.0045" to .269"	.0045" to .269"
			Range of threads per inch.....	1 to 60	1 to 60
HEADSTOCK			TAILSTOCK		
Spindle speeds, number.....	36	36	Spindle diameter.....	6"	6"
Spindle speeds, range in rpm.....	10 to 1300	10 to 1300	Spindle travel.....	15"	15"
Spindle, size of center, Morse No.....	5	5			
Spindle, diameter of hole, straight.....	2 ³ / ₁₆ "	2 ³ / ₁₆ "	MOTOR DATA		
Spindle nose, taper key drive, size.....	L-2	L-2	HP.....	40	40
BED			SHIPPING DATA (For basic machine with average accessories)		
Width.....	24 ¹ / ₂ "	24 ¹ / ₂ "	Net weight, approximate.....	17,000 lbs.	17,400 lbs.
CARRIAGE			Floor space required.....	185" x 80"	185" x 80"
Bearing surface, square inches.....	260	260			
Bridge width.....	11"	11"			
Cross slide travel.....	18 ¹ / ₂ "	18 ¹ / ₂ "			

* Longer lengths available upon request.

NF TOOLROOM LATHES

The NF design machines are offered in Toolroom models which will satisfy the most exacting requirements and provide extra versatility.

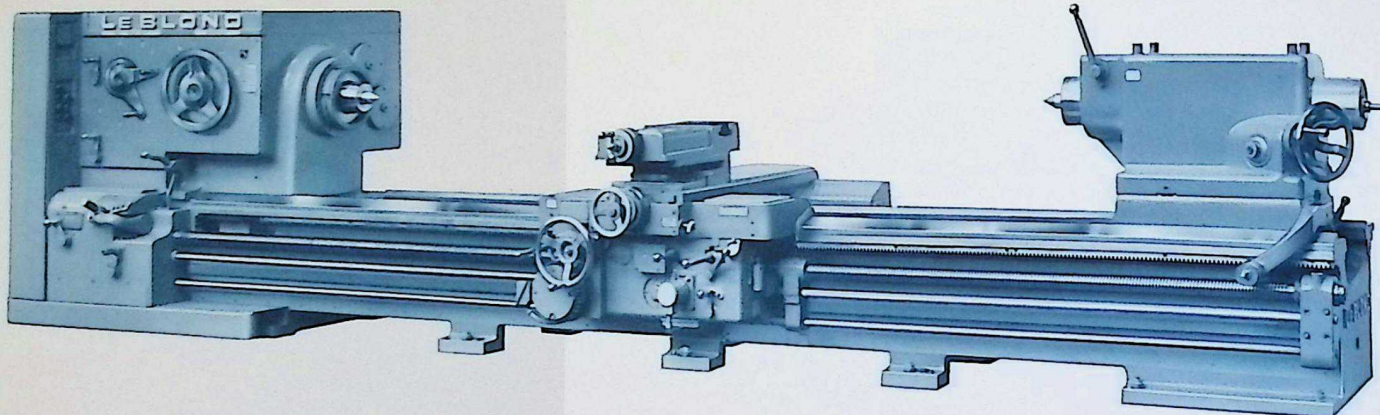
They conform to—and in many ways exceed—NMTBA specifications for toolroom tolerances and alignments. Even more important, they conform to the true craftsman's concept of an exceptionally versatile lathe. Specifications in

general are the same as those for the standard models. See table above.

Standard equipment includes apron controlled leadscrew reverse, single automatic length stop in both directions of carriage travel, chip pan, micrometer carriage stop, large face plate and steady rest. These items are furnished in addition to the standard equipment listed above.



LEBLOND NK HEAVY DUTY



4025 NK Heavy Duty

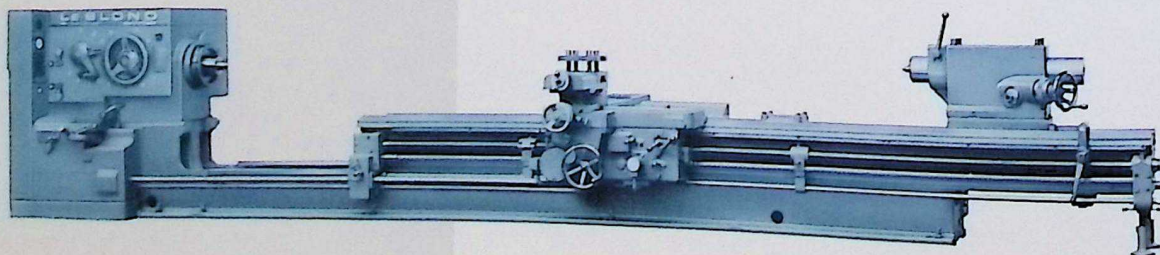


4025 NK Hollow Spindle

NK HOLLOW SPINDLE LATHE

Parts can be turned which are considerably longer than the normal distance between centers. This is accomplished by extending the workpiece through the hollow spindle, which has a $1\frac{1}{2}$ " hole. Chucks may be fitted to both ends of the spindle.

SPECIFICATIONS	4025
Spindle speeds, number.....	12
Spindle speeds, range in rpm.....	5 to 213
Spindle nose flange diameter.....	17 $\frac{3}{4}$ "
Size of hole through spindle.....	1 $\frac{1}{2}$ "
Max. hp and rpm recommended.....	30-1800



NK Sliding Bed Gap Lathe

HEAVY DUTY LATHES

MAJOR FEATURES

- 36 speeds with accurately ground spindle driven through heavy spur gears. Spindle runs in 4 high capacity, precision, anti-friction bearings.
- At any given speed, only gears and shafts transmitting power are engaged.
- Combination electric clutch and brake for starting, stopping and jogging, with rheostats to give full control over the widest range of workpiece sizes.
- Bed cast "L" shape to provide extra-solid headstock support at rear. Legs are cast integral with bed for further rigidity. Design also provides convenient chip disposal to the rear.
- Replaceable bed ways of hardened and ground steel. Compensating vee-way design assures accurate alignment and at the same time directs cutting forces into the massive bed.
- Sturdy carriage guided on the front way only; drive from rack or leadscrew is directly below front way.
- Hardened and ground, replaceable, square lock, cross slide ways reduce wear, provide more strength and allow more accurate movement with less maintenance.
- Four-way power rapid traverse saves tool positioning time.

• Feed and thread changes through totally enclosed quick change box. Feeds can be reversed at the apron.

• Tailstock worm and rack locks the spindle against thrust, provides extra spindle travel and gives full support even when spindle is fully extended.

STANDARD EQUIPMENT

Hardened and ground crossfeed screw and compensating crossfeed nut • hardened and ground replaceable steel bed ways, front and rear • small face plate • compound rest • No. 2 tool post • chasing dial • ball chasing stop • shear wipers • electric clutch and brake • motor drive sheave • hardened and ground cross slide ways • tailstock mover • four-directional power rapid traverse • centers and necessary wrenches.

OPTIONAL EQUIPMENT

Apron control rpm selector and rpm calculator • six-speed headstock • infinitely variable speed • hydraulic feed to carriage • two-speed tailstock • air-lift tailstock • anti-friction tailstock spindle • large face plate • tracers • taper attachment • chip pan • steady rest • follow rest • face plate jaws • turret tool block • pump, piping and tank • connected rests • plain block rests • positive length stops • single or multiple positive cross stops • coarse threading attachment • metric transposing gears.

SPECIFICATIONS	4025 NK		4025 NK
GENERAL CAPACITY		FEED AND THREAD RANGE	
Swing over bed and carriage wings.....	40"	Feed and thread changes, number.....	48
Swing over cross slide.....	25"	Range of feeds per revolution.....	.004" to .250"
*Range of center distances (in increments of 24").....	60" to 444"	Range of threads per inch.....	¼ to 46
HEADSTOCK		TAILSTOCK	
Spindle speeds, number.....	36	Spindle diameter.....	8"
Spindle speeds, range in rpm.....	5.4 to 600	Spindle travel.....	18"
Spindle, size of center, Morse No.....	6		
Spindle, diameter of hole, straight.....	3 1/16"	MOTOR DATA	
Spindle nose, taper key drive, size.....	L-3	HP up to.....	100
BED		SHIPPING DATA (For basic machine with average accessories)	
Width.....	34"	Net weight, approximate.....	30,550 lbs.
CARRIAGE		Floor space required.....	210" x 105"
Bearing surface, square inches.....	415		
Bridge width.....	15"		
Cross slide travel.....	23 1/2"		

* Longer lengths available upon request.

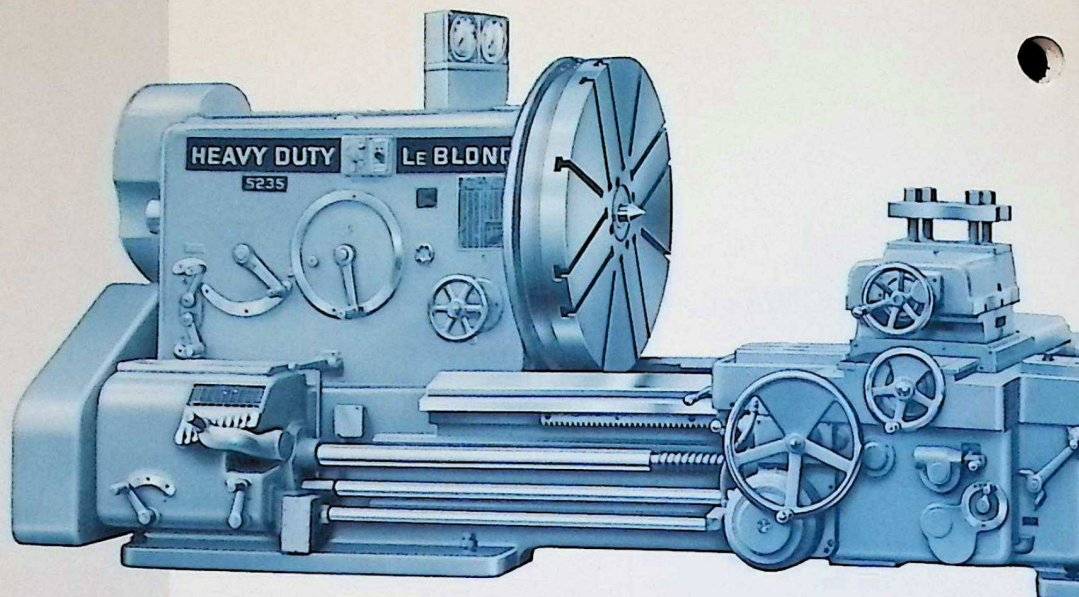
NK SLIDING BED GAP LATHE

With bed closed, this machine functions as a regular engine lathe. Its special bed slides open to form a gap for odd shaped parts and large diameter jobs. Between center distance is increased up to 50% with bed fully extended.

SPECIFICATIONS	4025/65		4025/65
Swing over bed and carriage wings.....	39"	Center distance, bed closed (basic machine).....	72"
Swing over cross slide.....	25"	Center distance, bed extended (basic machine).....	108"
Swing through gap.....	65"	Bed width.....	31"
Distance, face plate to end of gap, bed extended (basic mach.).....	36"	Carriage length on ways.....	46 1/4"
		Cross slide travel.....	35"



LEBLOND NQ-NR HEAVY DUTY



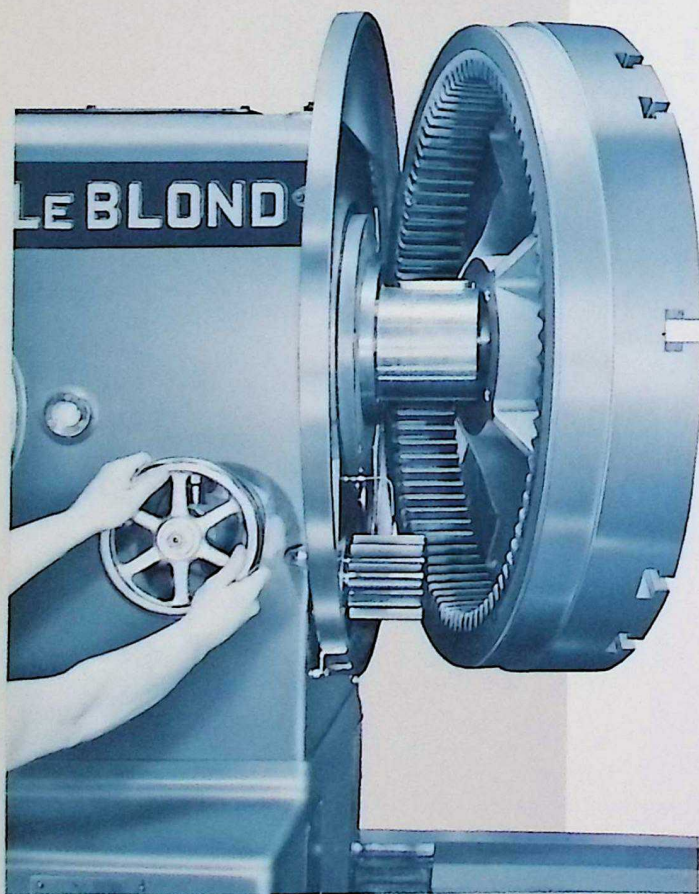
5235 NR Heavy Duty

VARIABLE SPEED DRIVE

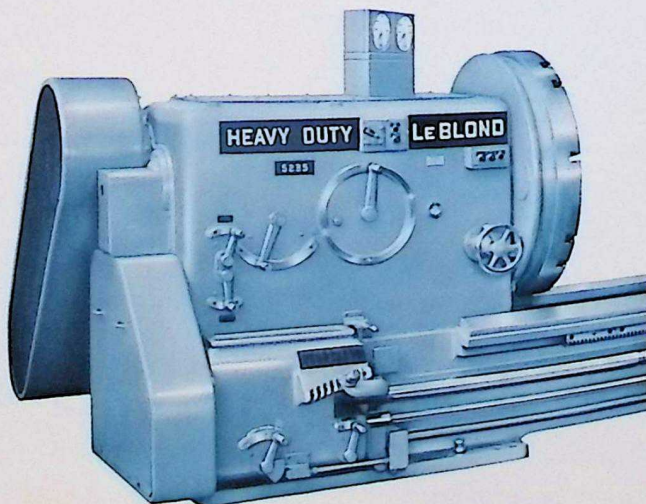
Variable speed drive allows selection of the exact speed needed for optimum efficiency on every cut.

Spindle speeds are infinitely variable in 6 ranges, 4 of which are periphery driven. The needed range is selected by shifting one or, at most, two levers at front of headstock. Controls on right carriage wing include a speed setting potentiometer and a jog button. Duplicate jog button is at front of headstock; speed and load meters mounted on top of headstock.

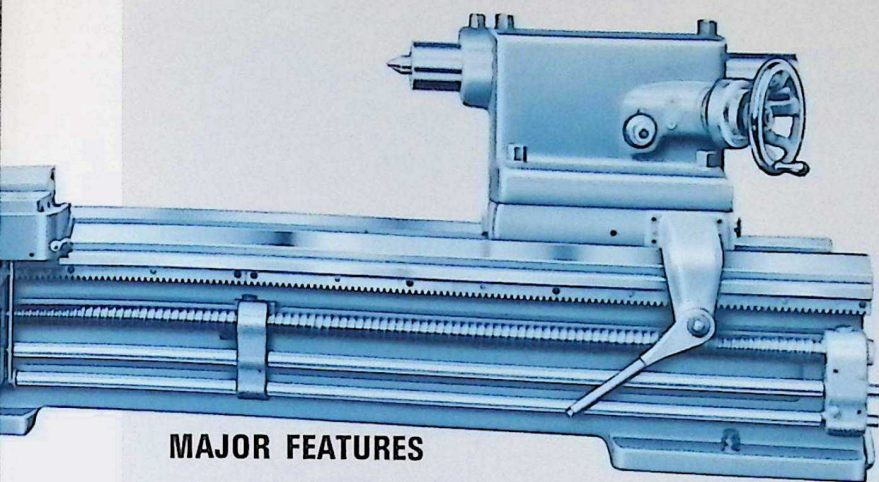
Overall speed range to suit customer's requirements—typical range with a 2 to 1 motor, 2.5 to 185 rpm; with a 3 to 1 motor, 2.5 to 218 rpm. Spindle is mounted on 4 anti-friction bearings with low speed, high torque gear near double, front, tapered, roller bearings to absorb heavy radial loads.



View with face plate partially removed, illustrating manner in which power is transmitted far out from work axis.



HEAVY DUTY LATHES



MAJOR FEATURES

- 6 speeds, including 4 through face plate drive for the ultimate in power delivery on large diameter work.
- Accurately ground spindle driven through massive spur gears. Spindle runs in 4 high capacity, precision, anti-friction bearings, largest diameter at bearing being 10 1/4".
- Replaceable bed ways of hardened and ground steel. Compensating vee-way design assures accurate alignment and at the same time directs cutting forces into the massive bed.
- Sturdy carriage guided on the front way only; drive from rack or leadscrew is directly below front way.
- Turcite-clad carriage bearing surfaces improve "stick-slip" characteristics and resist wear.
- Hardened and ground, replaceable, square lock cross slide ways reduce wear, provide more strength and allow more accurate movement with less maintenance.
- Six-way power rapid traverse saves tool positioning time. Top slide furnished with power angular feed and four-stud tool post assembly.
- Feed and thread changes through totally enclosed quick change box. Feeds can be reversed at the apron.
- Tailstock worm and rack locks 8" diameter spindle against

thrust, provides extra spindle travel and gives full support even when spindle is fully extended. Direct reading dial gives quick and accurate depth measurement.

STANDARD EQUIPMENT

Hardened and ground crossfeed screw and compensating crossfeed nut • hardened and ground replaceable steel bed ways, front and rear • large face plate driven from center or periphery • compound rest with power angular feed • four-stud tool post assembly • six-way power rapid traverse • formica-clad carriage bearing surfaces • chasing dial • drill sleeve with tang driver • tailstock mover • leadscrew supports • shear wipers • centers and necessary wrenches.

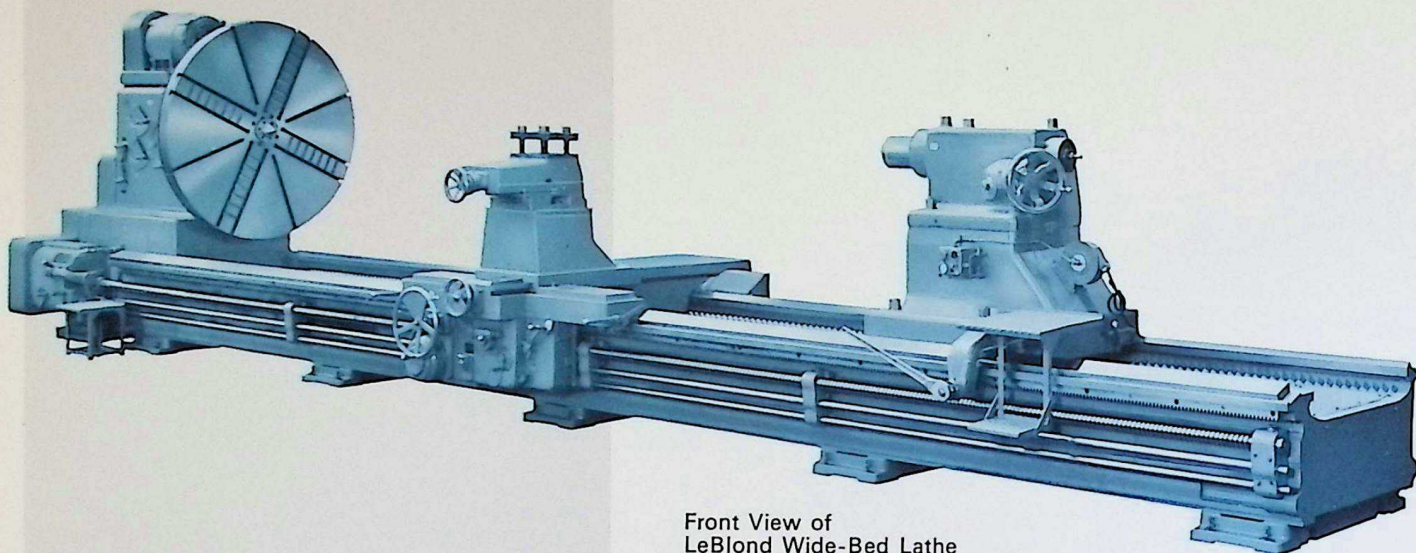
OPTIONAL EQUIPMENT

Dual carriages • independent hydraulic carriage feed • tracers • heavy duty roll turning slide • taper attachment (standard or geared) • face plate jaws • chip pan • steady rest • follow rest • connected rest • plain block rest • turret tool post • coolant system • positive length stops • single or multiple positive cross stops • coarse threading attachment • 12" diameter tailstock spindle • metric transposing gears.

SPECIFICATIONS	4628 NQ	5235 NR		4628 NQ	5235 NR
GENERAL CAPACITY			CARRIAGE		
Swing over bed and carriage wings.....	46"	52 1/2"	Bearing surface, square inches.....	482	482
Swing over cross slide.....	28 1/2"	35 1/2"	Bridge width.....	20 1/2"	20 1/2"
*Range of center distances (in increments of 24").....	60" to 516"	60" to 516"	Cross slide travel.....	27 1/2"	27 1/2"
HEADSTOCK			FEED AND THREAD RANGE		
Spindle speeds, number.....	6	6	Feed and thread changes, number.....	54	54
Spindle speeds, range in rpm.....	variable	variable	Range of feeds per revolution.....	.005" to .332"	.005" to .332"
Spindle, size of center, Morse No.....	6	6	Range of threads per inch.....	1/2 to 30	1/2 to 30
Spindle, diameter of hole, straight.....	3 1/4"	3 1/4"	TAILSTOCK		
BED			Spindle diameter.....	8"	8"
Width.....	41 1/8"	41 1/8"	Spindle travel.....	20"	20"
			MOTOR DATA		
			HP up to.....	125	125
			SHIPPING DATA (Basic machine with average accessories)		
			Net weight, approximate.....	42,460 lbs.	44,460 lbs.
			Floor space required.....	200" x 85"	200" x 85"

* Longer lengths available upon request.

LEBLOND WIDE-BED



Front View of
LeBlond Wide-Bed Lathe

These massive machines are for the contour turning of aerospace components, rolls or any other workpieces requiring a lathe with great swing capacity. The complex work geometry often found in such work demands tracer controlled tooling of the highest order.

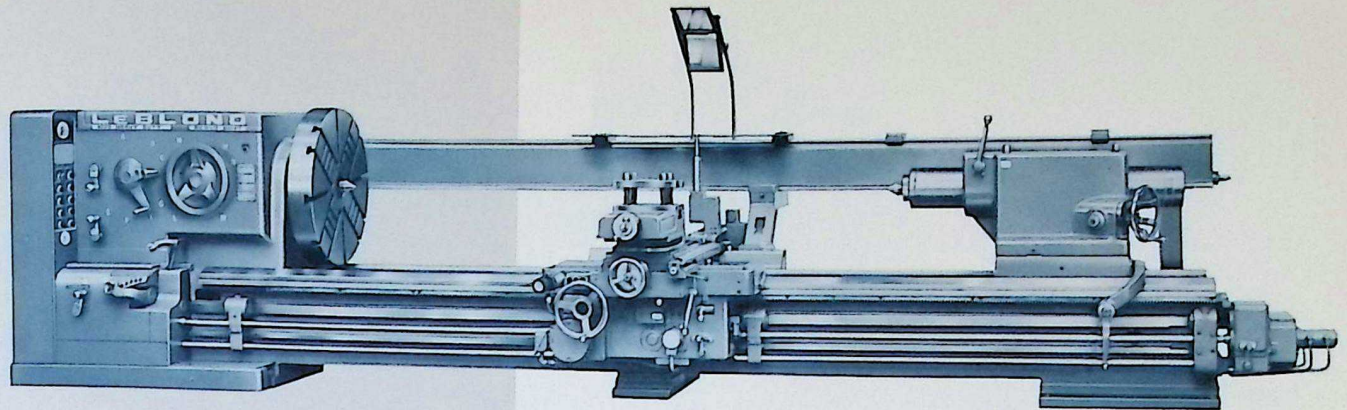
Four models are offered, the largest of which will swing 93" over the bed. Many of the basic features are much the same as in the NQ and NR Heavy Duty Lathes already described. Either one of 2 tracing systems is available.

• **TWO-DIRECTIONAL TRACER.** Tool motion, length and cross, is powered by 2 hydraulic motors, controlled through a single valve. This tracer will radius turn up to 180° as a continuous cut, a requirement when work with particularly complex geometry must be machined. Attached to the rear of the 60" wide bed is the special template carrier, necessary in the handling of extraordinarily large components.

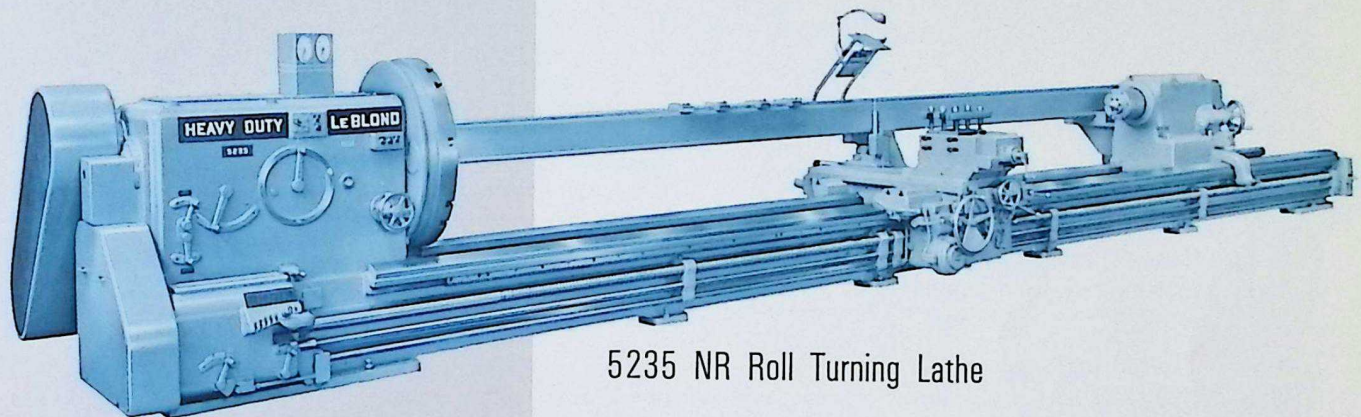
SPECIFICATIONS	6642	7552	8462	9372
GENERAL CAPACITY				
Swing over bed and carriage wings.....	66"	75"	84"	93"
Swing over cross slide.....	42"	52"	62"	72"
Distance between centers, base length†.....	72"†	72"†	72"†	72"†
HEADSTOCK				
Spindle speeds, number.....	6	6	6	6
Spindle speed range, rpm, all models.....		2.3 to 165		
Spindle, size of center, Morse No.....	6	6	6	6
Spindle, hole diameter, straight.....	3¼"	3¼"	3¼"	3¼"
BED				
Width.....	60"	60"	60"	60"
CARRIAGE				
Bearing surface, square inches.....	630	630	630	630
Bridge width.....	19¼"	19¼"	19¼"	19¼"
Cross slide travel.....	56"	56"	56"	56"
FEED AND THREAD RANGE				
Number of changes.....	54	54	54	54
Feed range per rev., all models.....		.005 to .332		
Range of threads per inch.....	½ to 30	½ to 30	½ to 30	½ to 30
TAILSTOCK				
Spindle diameter*.....	8"*	8"*	8"*	8"*
Spindle travel.....	20"	20"	20"	20"
MOTOR DATA				
Max. hp.....	75	75	75	75
SHIPPING DATA (Basic machine with average accessories)				
Net weight, lbs., approx.....	48,000	51,000	55,000	59,000

† Increases in increments of 24".
* 12" to 13" optional.

LEBLOND ROLL TURNING



4025 NK Roll Turning Lathe



5235 NR Roll Turning Lathe

LeBLOND ROLL TURNING

LeBlond Roll Turning Lathes with Two-Directional Tracer are offered in 7 Models. Choice depends primarily on the size of the rolls to be turned.

- Model 4025 NK is intended for rolls up to a maximum body diameter of 25". Basically this machine is the same as the NK Heavy Duty Lathes described on pages 16 and 17.

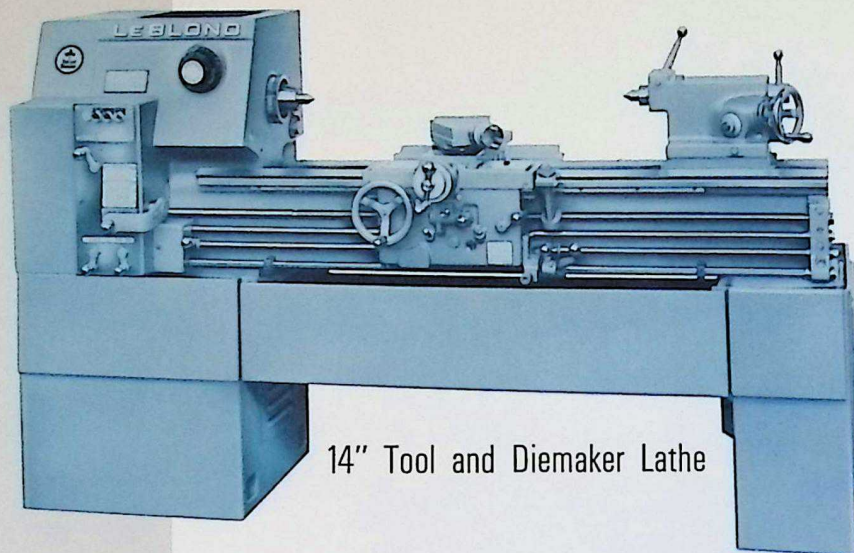
- Models 4628 NQ and 5235 NR and Wide Bed provide the greater capacity required when larger rolls must be turned. The base machines in this case are the NQ and NR Heavy Duty Lathes discussed on pages 16 and 17.

- The Two-Directional Tracer has many advantages when turning rolls. Hundreds of expensive forms tools are eliminated. Rolls need not be matched in pairs. The operator cannot modify the roll shape. Roll necks and face may be handled during the same setup. Both rough and finish passes are taken using the same template.

SPECIFICATIONS	4025 NK	4628 NQ	5235 NR
Swing over bed and carriage wings.....	40"	46"	52½"
Swing over cross slide.....	25"	28½"	35½"
Range of center distance (in increments of 24") (Longer lengths available on special order).....	60" to 444"	60" to 516"	60" to 516"
Spindle speeds, number.....	36	6	6
*Spindle speeds, range in rpm.....	5.4 to 600	variable	variable
Spindle, size of center, Morse No.....	6	6	6
Bed width.....	34"	41⅞"	41⅞"
Carriage bearing surface, square inches.....	415	482	482
Carriage bridge width.....	15"	18¾"	18¾"
Carriage cross slide travel.....	23½"	27½"	27½"
Feed range.....	.004" to .250"	.005" to .332"	.005" to .332"
Thread range.....	¾ to 46	½ to 30	½ to 30
Tailstock spindle diameter.....	8" 12" optional	8" 12" optional	8" 12" optional
Tailstock spindle travel.....	18"	20"	20"
Maximum hp and rpm recommended.....	75-1800	75 hp	75 hp
Net weight, approximate.....	32,100 lbs.	44,460 lbs.	46,460 lbs.

* Speed range varies according to main drive motor selected.

LEBLOND TOOL AND DIEMAKER



14" Tool and Diemaker Lathe

MAJOR FEATURES

- Servo-Shift speed change with speed pre-selection, 3-bearing spindle uses "zero" precision Timken bearings guaranteed to a maximum runout of .00015". Electric Clutch and brake. Multiple thread indexing, providing 2, 3, 4, 6 and 8 starts.

- "L" shape cast into head end of bed for extra-solid headstock support. Replaceable bed ways of hardened and ground, graphitic tool steel. Compensating vee-way design assures accurate alignment as carriage is guided on front way only. Drive from rack or leadscrew is directly below front way.

- Chip pan slides forward for ease of clean-out.

- Totally enclosed gear box. Separate leadscrew and feed rod. Apron controlled leadscrew reverse. Automatic, single length stops in both directions.

STANDARD EQUIPMENT

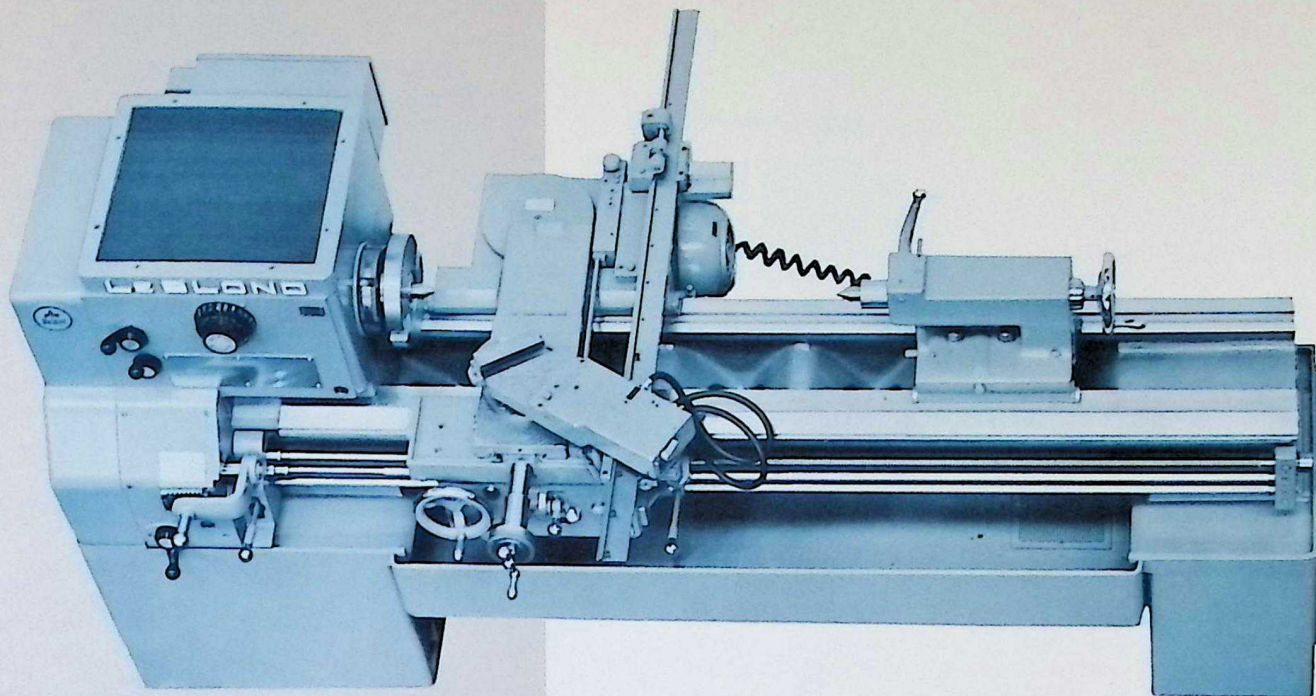
Servo-Shift with speed preselection • zero precision spindle bearings • electric clutch and brake • multiple thread index arrangement • small face plate • taper spindle sleeve • centers • leadscrew and feed reverse control from apron • single stops for feeding and thread chasing in each direction, with spindle forward only • feed drive safety clutch • graduated compound rest • chasing dial • tool post • ball chasing stop • tang driver in tailstock spindle • hardened and ground steel bedways • chip pan • set of levelling plates • necessary wrenches • arranged for multiple vee-belt motor drive but not including motor or electrical controls.

OPTIONAL EQUIPMENT

Tracers • taper attachment • large face plate • stops • steady rest • follow rest • compound and plain connected rest • tool blocks • metric transposing gears • revolving center • jaw chucks • collet chucks • drill chuck • coolant system.

SPECIFICATIONS	14"
GENERAL CAPACITY	
Swing over bed and carriage wings.....	15"
Swing over cross slide.....	9"
Center distance range.....	30" to 78"
HEADSTOCK	
Spindle speeds, number.....	16
Spindle speeds, range in rpm.....	31 to 2400
Spindle, size of center, Morse No.....	4
Spindle, diameter of hole, straight.....	1 ¹⁷ / ₃₂ "
Spindle nose, taper key drive, size.....	L-1
BED	
Width.....	12 ³ / ₁₆ "
CARRIAGE	
Bearing surface, square inches.....	62
Bridge width.....	6 ¹ / ₄ "
Cross slide travel, without taper attachment.....	8 ⁷ / ₁₆ "
FEED AND THREAD RANGE	
Feed and thread changes, number.....	48
Range of feeds per revolution.....	.0006" to .104"
Range of threads per inch.....	4 to 224
TAILSTOCK	
Spindle diameter.....	2 ³ / ₁₆ "
Spindle travel.....	8"
MOTOR DATA	
Maximum hp and rpm recommended.....	5-1800
SHIPPING DATA (Basic machine with average accessories)	
Net weight, approximate.....	3,080 lbs.
Floor space required.....	81" x 38"

LEBLOND HYDRA-TRACE

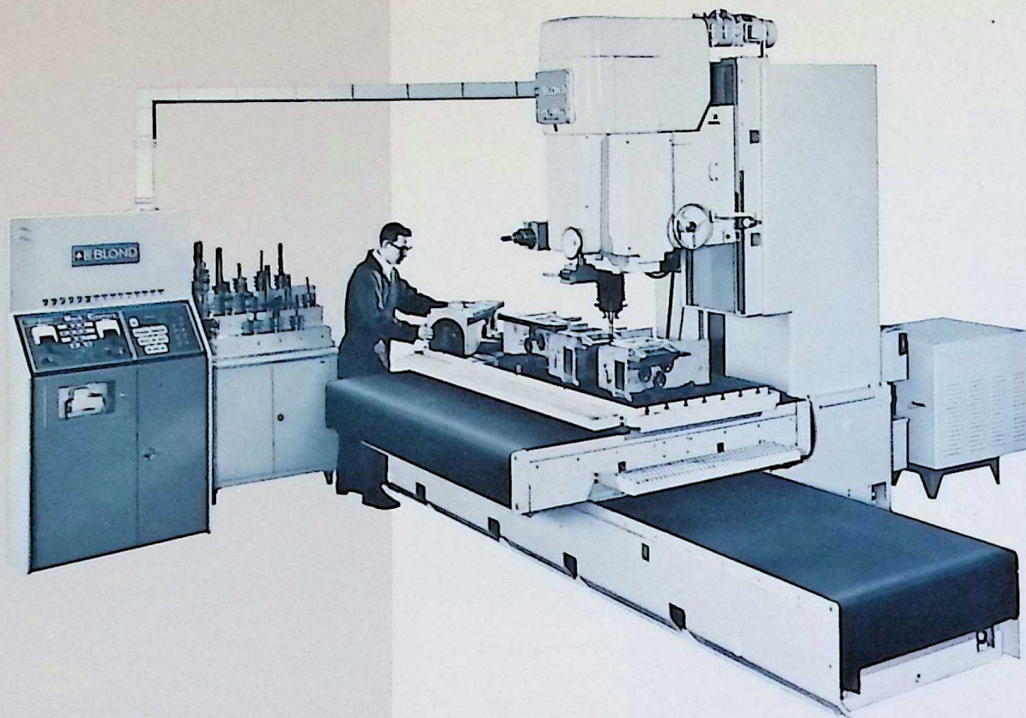


MAJOR FEATURES

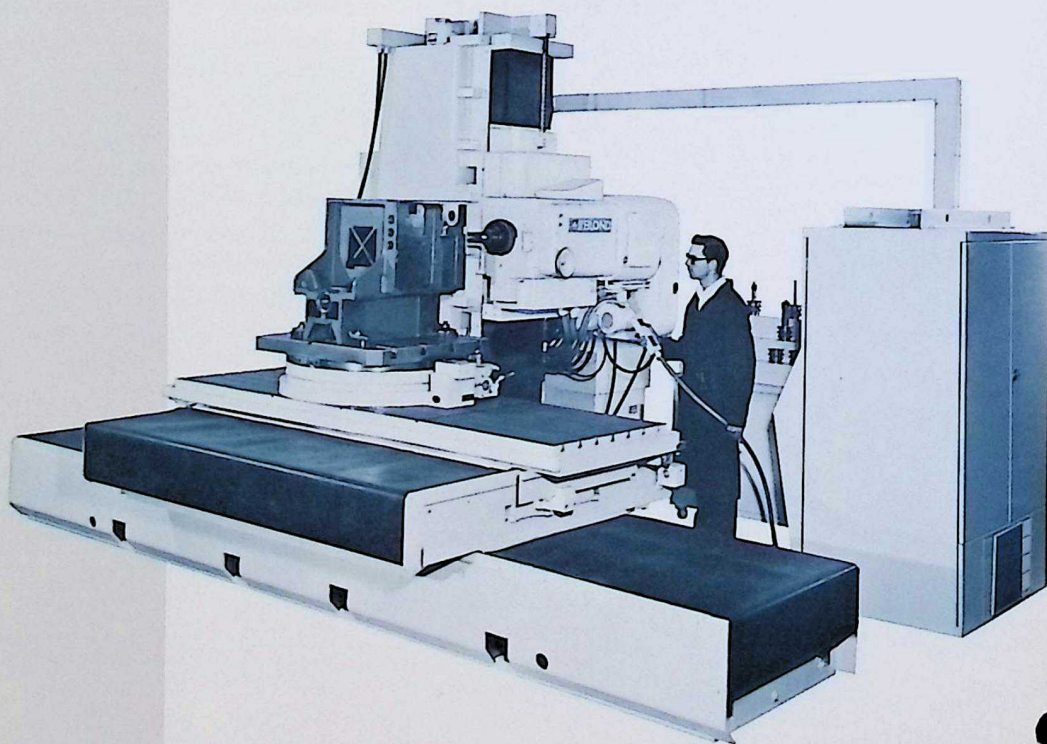
- Doesn't reduce swing. You don't have to buy a more costly lathe with built-in equipment just for your tracing jobs.
- Duplicates to $\pm .0005"$ tolerances. The tracing unit provides a compact, rigid link between template and workpiece. Even under the heftiest cut, Hydra-Trace responds smoothly and accurately to the slightest stylus motion.
- Swivels to increase versatility. Since the hydraulic slide unit can swivel 45° to the right or 40° to the left, you can contour turn in either direction, and select the best cutting angle for your work.
- Will face as well as turn and bore. You can set the template carrier of the Hydra-Trace unit at right angles to the spindle for contour facing.
- Uses inexpensive flat templates. Easy and inexpensive to make, flat templates pay for themselves quickly. Long templates can be made in sections for easy storage.
- Saves steps and setup time. The operator can mount and adjust the template at the front of the machine. At the same time, the carrier keeps the template in automatic alignment with the workpiece.
- Sets up and demounts fast. You can set up or demount the Hydra-Trace unit in less than 15 minutes, so you get maximum use of your lathe for both tracing and conventional turning.
- Maintains optimum pressure. A variable volume pump maintains optimum hydraulic pressure for all cuts, and minimizes the heating of oil.

Basic Machine Size	Std. Template Support Bar Length	Max. Template Support Bar Length	Length of Tracer Stroke	Max. Radius Reduction Slide at 30°	Max. Radius Reduction Slide at 45°	Stylus Pressure
13C3-15C5 Regal	60"	120"	$3\frac{1}{2}"$	$3\frac{1}{16}"$	$2\frac{1}{2}"$	8-10 oz.
17E5-19E7 Regal	60"	120"	$3\frac{1}{2}"$	$3\frac{1}{16}"$	$2\frac{1}{2}"$	8-10 oz.
24" Regal	60"	120"	5"	$4\frac{1}{4}"$	$3\frac{1}{2}"$	8-10 oz.
Tool and Diemaker	60"	120"	$3\frac{1}{2}"$	$3\frac{1}{16}"$	$2\frac{1}{2}"$	8-10 oz.
2516 NF	66"	126"	$6\frac{1}{8}"$	$5\frac{1}{2}"$	$4\frac{1}{2}"$	8-10 oz.
3220 NF	66"	126"	$6\frac{1}{8}"$	$5\frac{1}{2}"$	$4\frac{1}{2}"$	8-10 oz.
4025 NK	90"	190"	$6\frac{1}{8}"$	$5\frac{1}{2}"$	$4\frac{1}{2}"$	10-12 oz.

LEBLOND TAPE DRILL III



Vertical Tape-Drill III with
manually-loaded automatic tool
changer.



Horizontal Tape-Drill III with
manual tool change and
rotary index table.

More for your dollar than any other machining center in its capacity range.

Tape-Drill III—horizontal or vertical—starts with the decade-proved management tool called numerical control and builds from there: in greater work load capacity, greater speed, more job flexibility, and the speed and accuracy of automatic tool changing without its cost.

In all, Tape-Drill III is a sound management decision: the only machining center in its size and capacity range that can back you with accountability—down-the-line proof.

THREE TON WORK LOAD CAPACITY

Work carrying capacity of 6,000 pounds in single or multiple pieces on tables ranging in size from 28" x 56" to a giant 36" x 104".

VERSATILITY

Drill, mill, bore, tap. 200 programmable speeds within 60 to 2800 rpm range, infinitely variable. 20 programmable feeds within .0003" to .125" ipr range, infinitely variable, or directly programmed feeds from a .060 to 50.000 ipm range. *12-inch spindle travel with unlimited depth settings.

MUSCLE

Drills 3" hole in 1018 steel at 80 surface feet, .006 ipr feed.

Taps up to 8 threads, utilizing the wide feed range. Mills 10 cubic inches of cast iron or 7 cubic inches of 1018 steel per minute. All with 7½ hp drive (10 hp available).

PRECISION

The hydrostatic spindle quill bearing is superior in both rigidity and accuracy to any other type of bearing. Preloaded round way roller bearings have much greater carrying capacity than other anti-friction bearings. Precision ground ball screws (table and saddle positioned to .001" in 2 feet).

3-AXIS NUMERICAL CONTROL

X,Y,Z programming, with plus or minus programming for X and Y and full floating zero for zero reference at any point on the workpiece. Plus other features and options (see page 6).

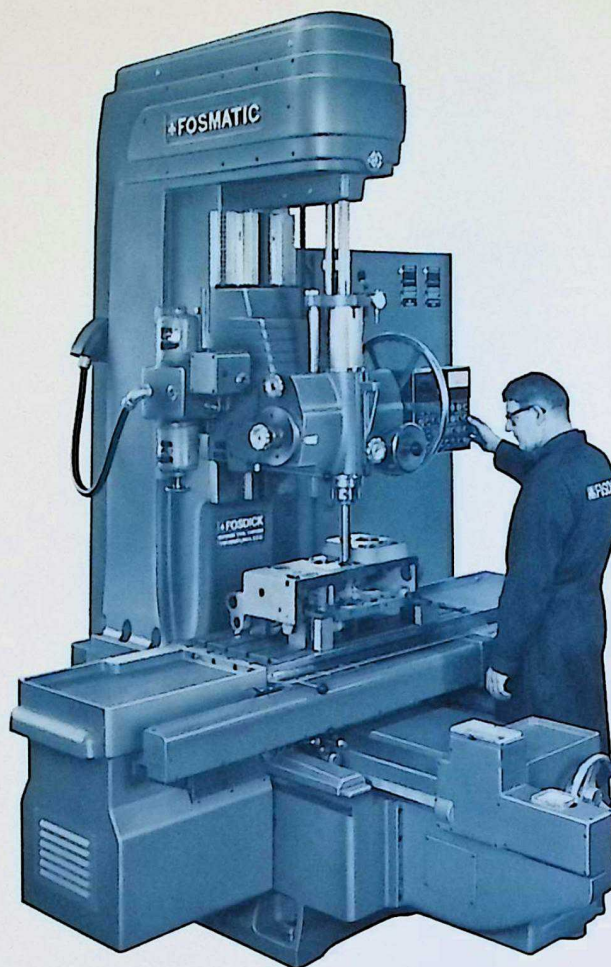
TOOL CHANGERS

There is available for Tape-Drill III both a manually loaded tool changer or a 50-tool Tool Changer. The lower cost manually loaded Tool Changer enables the operator to preload the changer with the next tool to be used. The 50-tool Tool Changer, from N/C command, selects the new tool (with no physical coding necessary) and transfers to the spindle and returns the used tool to storage.

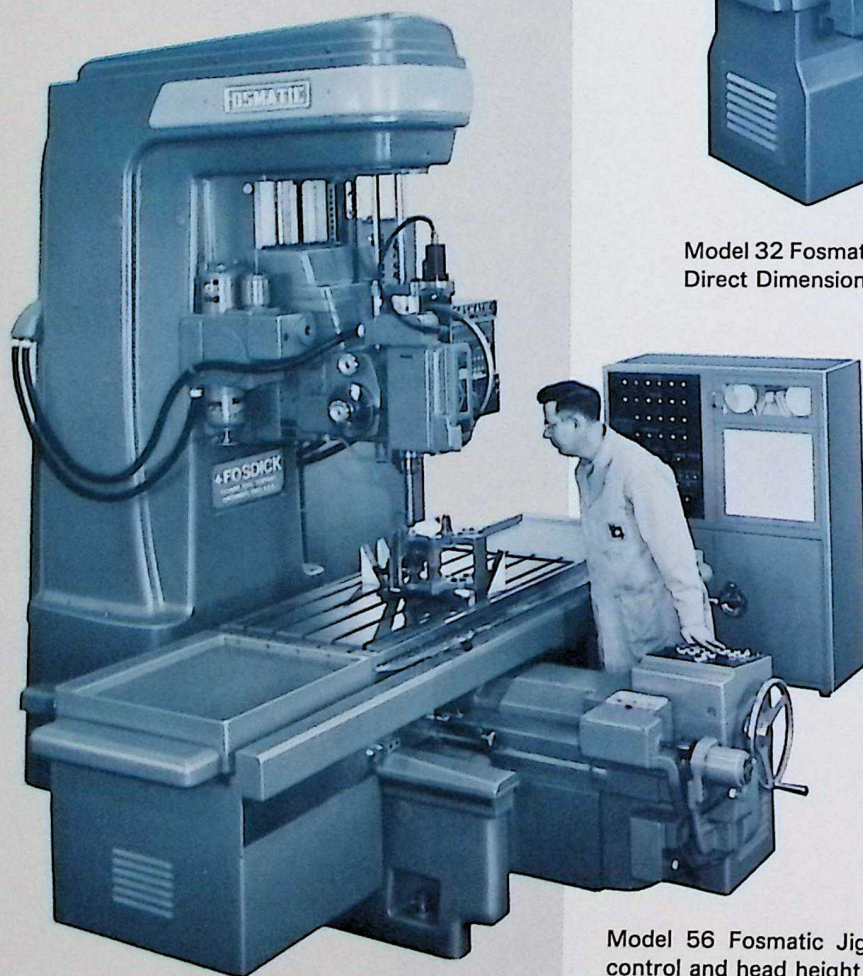
*Varies with control ordered.

Specifications	Vertical	Horizontal
Table-Working Surface	28" x 56" to 36" x 104"	28" x 56" to 36" x 104"
Table-Maximum Load	6000 lbs.	6000 lbs.
Head Travel	25" (37" Optional)	36" (48" Optional)
Spindle Travel	12"	12"
Spindle Center to Column Face	28-3/16"	
Spindle Center to Column Throat	34" (42" Optional)	
Spindle Nose to Table Top (Max.)	30" (42" Optional)	
Spindle Nose to Table Top (Min.)	0"	
Spindle Center to Table Top (Max.)		36" (48" Optional)
Spindle Center to Table Top (Min.)		0"
Table and Saddle Traverse Rates	150 I.P.M. 150 I.P.M. 60 I.P.M.	150 I.P.M. 150 I.P.M. 150 I.P.M.
Spindle Traverse Rate	3/4 I.P.M. to 25 I.P.M.	3/4 I.P.M. to 25 I.P.M.
Head Traverse Rate	.0003 to .125 I.P.R. or	.0003 to .125 I.P.R. or
Milling Feed Rate—Infinitely Variable	.060 to 500 I.P.M.*	.060 to 500 I.P.M.*
Spindle Feeds—Infinitely Variable		
Spindle Speeds—Infinitely Variable	60 to 2800 R.P.M. or 30 to 1400 R.P.M.	60 to 2800 R.P.M. or 30 to 1400 R.P.M.
Spindle Drive Motor	7-1/2 H.P. (10 H.P. Optional)	7-1/2 H.P. (10 H.P. Optional)
Spindle Quill Diameter	4-5/8"	4-5/8"
Spindle Nose	#50 Erickson "Quick Change"	#50 Erickson "Quick Change"
Overall Height, Machine	123" or 135"	88" or 100"
Net Weight, Approx. (28" x 56" Table)	19,000 lbs.	23,000 lbs.
(36" x 104" Table)	30,000 lbs.	34,000 lbs.
Positioning Accuracy	±.001" in 24" ±.003" Overall	±.001" in 24" ±.003" Overall
Drilling Capacity	3" hole in 1018 Steel at 80 Surface Feed .006 I.P.R. Feed 7 Cubic Inches of 1018 Steel per minute, 4" Shell End Mill Up to 8 Threads Up to 8 Threads Within .0003" roundness, Straightness up to 6" depth .0003"	
Milling Capacity		
Tapping Capacity		
Boring Capacity		

*Subject to control options



Model 32 Fosmatic Jig Borer with automatic positioning and Direct Dimension Measuring system.



Model 56 Fosmatic Jig Borer with three-axis numerical control and head height control.

WIDEST CHOICE OF POSITIONING SYSTEMS (NON N/C)

1. **Rods and End Measures**—Low cost measuring for one-at-a-time jobs. Positioning is achieved by laying measuring rods (or duplicating bars) end to end in troughs. Power rapid traverse (standard equipment) speeds up the process. Power clamp and automatic lubrication are also standard equipment.
2. **Direct Dimension Measuring**—the only non-N/C system in which the operator can dial digital dimensions. The operator simply sets the dials for the table and saddle directly from the drawing. This easy to set measuring system also serves as a command position read-out and does incorporate a .0001" dial indicator for verification after the table and saddle are in final position.
3. **Automatic Positioning**—is a very significant timesaver when used with rods and end measures or direct dimension measuring. The operator simply presses a push-button per axis (or both at the same time) and automatically the machine unclamps, rapid traverses, finally positions, reclaims and relaxes tension in the traverse screw.
4. **Digital Readout**—for the table travel allows the operator to position the table by viewing a digital display. This further extends the machines inspection capability and reduces the initial setup time.

NUMERICAL CONTROL

1. **Two Axis N/C**—provides tape commanded table and saddle locations and selection of spindle speeds and feeds. The design is highly reliable and utilizes a total integrated circuit concept.
2. **Three Axis N/C**—provides everything the above two axis control does and also the "Z" axis (or spindle depth).

Standard features consist of spindle cycles, tool offsets, miscellaneous functions and control of the head position on the column.

3. **Tool Changers**—there is available for an N/C Jig Borer both a manually loaded tool changer or a 50-tool Tool Changer. The lower cost manually loaded Tool Changer enables the operator to preload the changer with the next tool to be used. The 50-tool Tool Changer, from N/C command, selects the new tool (with no physical coding necessary) and transfers to the spindle and returns the used tool to storage.

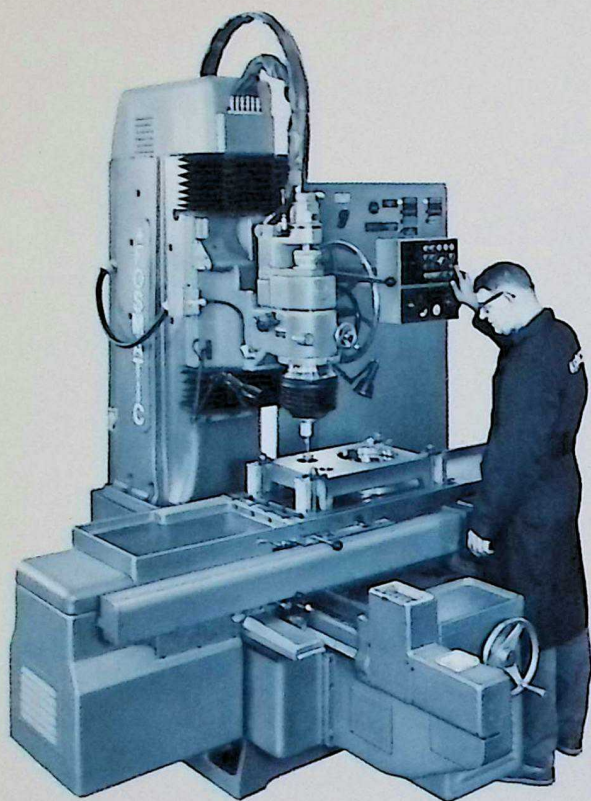
BUILT FOR THE MOST DEMANDING WORK:

1. Major castings have extra-margin stability.
2. Flat ways with center V-guideways eliminate gibs and compensate for wear.
3. Recirculating linear bearings support spindle quill.
4. Rugged head with flat ways, center V-guideway, metal-to-metal clamping.
5. Fast tool changing.
6. Rapid speed and feed selection.

STANDARD EQUIPMENT

Sixteen preselected spindle speeds on models 44, 54, and 56, infinitely variable spindle speeds including power speed change with tachometer on models 32 and 42; eight preselected spindle feeds, power traverse and clamp of table and saddle along with locating dial indicators for both, two .0001 inside micrometers, one set end measuring rods, depth dial indicator, anti-friction quill, BF spindle, one set Morse taper adapters and standard motor as shown in specifications.

SPECIFICATIONS	Model 32	Model 42	Model 44	Model 54	Model 56
Table working surface.....	18" x 32"	18" x 42"	22" x 44"	22" x 54"	28" x 56"
Table travel.....	30"	36"	42"	48"	48"
Saddle travel.....	18"	20"	22"	28"	28"
Spindle nose to table top.....	4" to 22-1/2"	4" to 28-1/2"	6" to 30"	6" to 30"	6" to 30"
Spindle center to column face.....	16-1/2"	16-1/2"	18-1/2"	18-1/2"	18-1/2"
Spindle center to column throat.....	21"	21"	25-1/4"	30-1/2"	30-1/2"
Column throat table top.....	16"	16"	22"	22"	22"
Head travel on column.....	9-1/2"	15-1/2"	15"	15"	15"
Spindle travel in head.....	9"	9"	9"	9"	9"
Speeds.....	Infinitely variable, 43-2000 rpm		16 speeds, 30-1800 rpm		
Feeds.....	.0005-.015 in/revolution		.0005-.015 in/revolution		
Motor.....	3 hp 1200 rpm	3 hp 1200 rpm	3 hp 900/1800 rpm		
Floor space, basic model.....	107" x 133"	107" x 141"	125" x 153"	133" x 162"	137" x 164"
Net weight.....	12,000 pounds	13,000 pounds	21,500 pounds	23,500 pounds	26,000 pounds



Model 32G Fosdick Jig Grinder with automatic positioning and Direct Dimension Measuring system.

A new degree of speed, convenience, and capacity is brought to precision grinding in the Fosdick Jig Grinders. All standard jig grinding operations and numerous production operations can be conveniently accomplished on the Fosdick and also many which were formerly known as "trick" operations. Both straight and tapered holes can be located and ground, along with contours consisting of radii and tangents or chordal surfaces. The angular and indexing device, built into the main spindle, and the slot grinding attachment permit quick, accurate grinding of any contour, regular or irregular. Chop grinding removes stock rapidly and makes contour grinding even faster.

STANDARD EQUIPMENT

Infinitely variable spindle speeds, infinitely variable spindle feed rates, contour grinding index controls, pressure regulators and gages for automatic feeds and grinding heads, automatic temperature control of spindle housing, air lubricator for automatic spindle feed, power traverse and clamp of table and saddle along with locating dial indicators for both, two .0001 inch inside micrometers, one set end measuring rods, dust protective guards, adjustable work light, wheel dresser, and 1/2 HP variable speed DC motor.

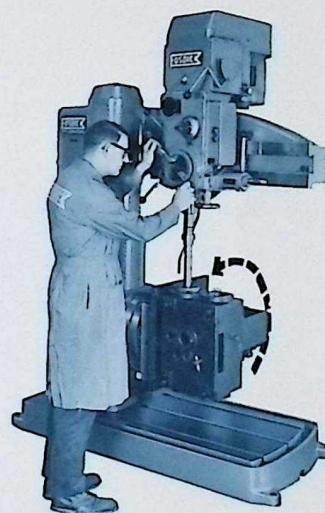
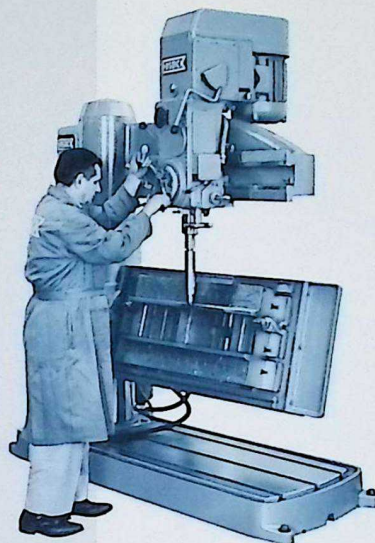
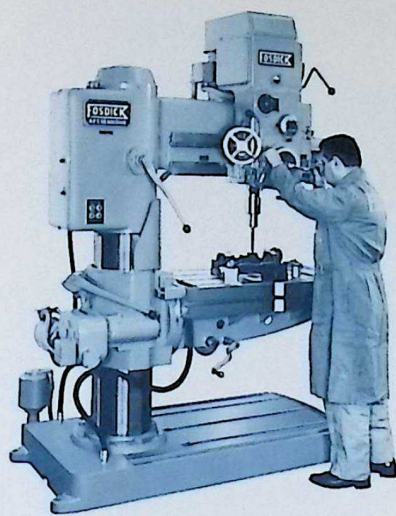
OPTIONAL EQUIPMENT

Two-axis numerical control, extra spindle height, power head elevation and clamp, dust exhaust system and additional grinding heads.

WIDEST CHOICE OF POSITIONING SYSTEMS (NON N/C)

1. Rods and End Measures
2. Direct Dimension Measuring
3. Automatic Positioning
4. Digital Readout

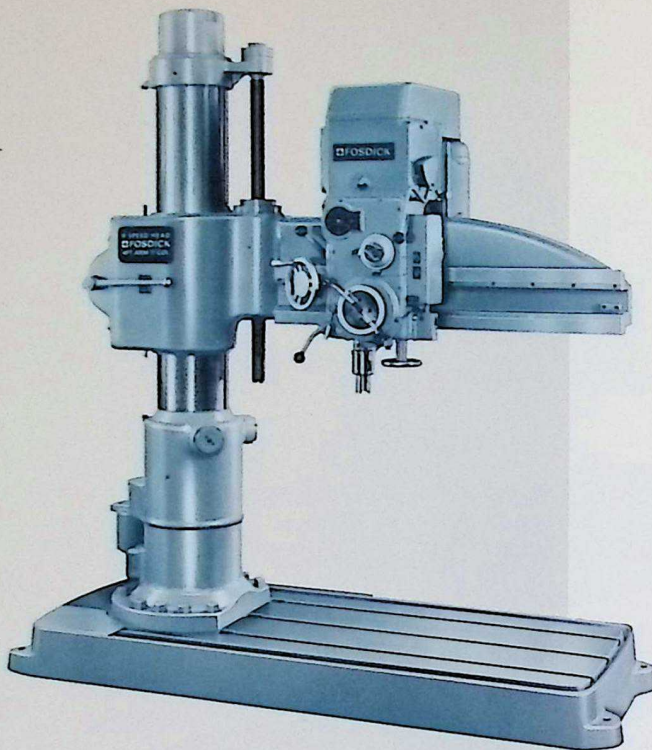
SPECIFICATIONS	Model 32G	Model 42G	Model 44G	Model 54G	Model 56G
Table working surface.....	18" x 32"	18" x 42"	22" x 44"	22" x 54"	28" x 56"
Table travel.....	30"	36"	42"	48"	48"
Saddle travel.....	18"	20"	22"	28"	28"
Table top to wheel collet.....	2" to 18-1/2"	2" to 24-1/2"	1" to 27-1/2"	1" to 27-1/2"	1" to 27-1/2"
Spindle speed.....	infinitely variable, 40-250 rpm				
Spindle to column face.....	16-1/2"	16-1/2"	18-1/2"	23-3/4"	23-3/4"
Spindle to column throat.....	21"	21"	25-1/4"	30-1/2"	30-1/2"
Head travel on column.....	13"	19"	23"	23"	23"
Spindle travel.....	3-5/8"	3-5/8"	3-5/8"	3-5/8"	3-5/8"
Floor space.....	107" x 133"	107" x 141"	125" x 153"	133" x 162"	137" x 164"
Net weight.....	10,000 lbs.	11,000 lbs.	19,500 lbs.	21,500 lbs.	24,000 lbs.



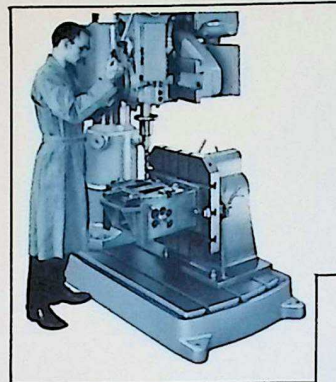
SPECIFICATIONS	3'	4'
Column diameter at table	12"	12"
Spindle to face of column at table, minimum	9"	9"
Spindle to face of column at table, maximum	36"	48"
Horizontal travel of head on arm	27"	39"
Table to spindle (max.)	23-1/4"	23-1/4"
Base to spindle (max.)	44-1/4"	44-1/4"
Base to spindle (min.)	32-1/4"	32-1/4"
Table to base (max.)	37-1/2"	37-1/2"
Table to base (min.)	21"	21"
Table travel, vertical	16-1/2"	16-1/2"
Table working surface (rectangular)	24" x 36"	24" x 48"
Base working surface	30" x 41"	30" x 53"
Base height	6-1/4"	6-1/4"
Spindle travel in head	12"	12"
Spindle Morse taper	No. 4	No. 4
Spindle diameter of nose	2"	2"
Spindle diameter least section	1-1/4"	1-1/4"
Spindle quill diameter	2-7/8"	2-7/8"
Motor hp	3	3
Face of arm	9"	9"
Length of head bearing on arm	12-3/4"	12-3/4"
Length of table bearing on column	18"	18"
Floor to top of column	79"	79"
Floor to top of head	95"	95"
Net weight	5800 lbs.	6100 lbs.

MOST CONVENIENT STEP BETWEEN UPRIGHT DRILLS AND LARGE RADIALS

To provide a machine no matter what the drilling requirements may be, the Fosdick Sensitive Radial Drill fills in a gap between the large Radial Drill and the Sensitive Drill. Instead of the conventional design of moving the arm up and down on the column, the Sensitive Radial Drill has a fixed height arm which can be swung 360°, and has a movable table which moves up, down, and around the column. Either a rectangular or a trunnion table is furnished. The design places the table in the proper position for any job suitable for this machine. If greater capacity is required, the table may be swung out of the way and the work mounted on the base.

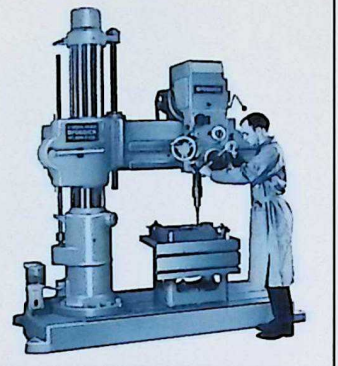


Front view of Fosdick 11" column Radial Drill.

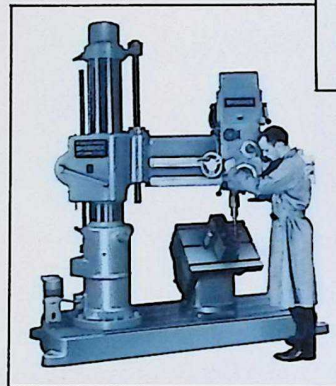


Trunnion Type

Universal Type
Working Surface—20" x 24"
Table Height—25"



Box Type
Working Surface—18" x 24"
Table Height—20"

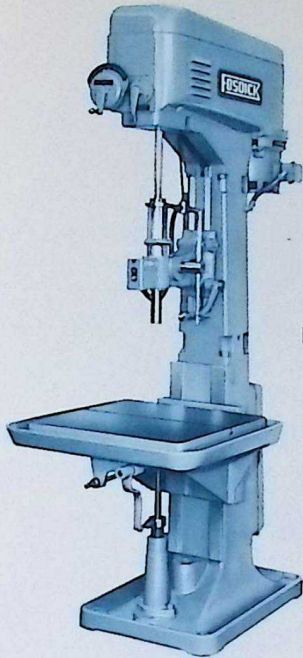


OPTIONAL WORK TABLES FOR GREATER VERSATILITY

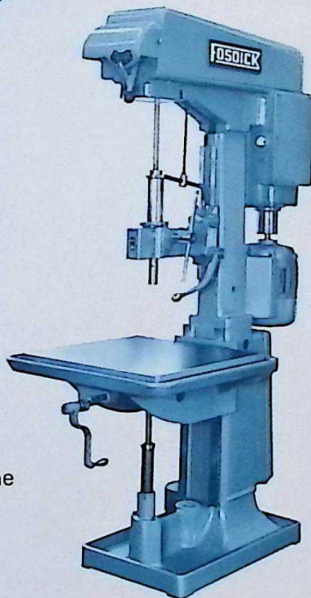
Nine spindle speeds (18 available at extra cost) are controlled by a single lever at the bottom, left side of the head. Another single lever, right top, selects from the 4 geared feeds. Power (and hand) feed clutch handles are in front while another handwheel at the bottom provides for fine hand feeding. Head clamping is accomplished by a screw and block-type clamp, controlled by another lever on the left side. The "forward-reverse-stop" lever is to the right and is independent of tapping controls (optional) when used. Highly productive, versatile, and attractive price. This Fosdick radial includes 9 spindle speeds, 4 geared power feeds, reverse to spindle (for tapping), 12" spindle travel, fluorescent lighting over the work area and a 5 HP 1800 rpm ball bearing motor, all as standard equipment.

Featured is a superior column design with pushbutton controlled clamping of the arm to the column, with a contact of 270° between the inner and outer column members. This exclusive Fosdick feature supplies a far more positive lock than the conventional split column design.

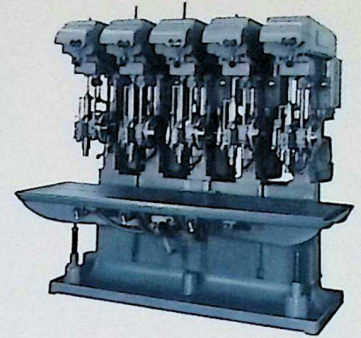
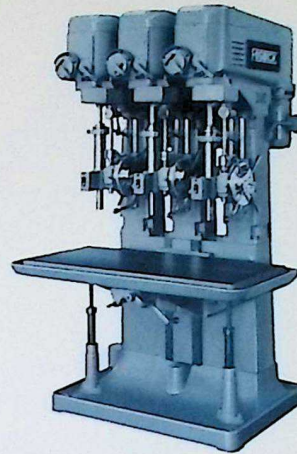
SPECIFICATIONS	3' arm	4' arm	5' arm
Column diameter	11"	11"	11"
Drill to center at base	6'-0"	8'-0"	10'-0"
Spindle to face of column at base (min.)	9"	9"	9"
Horizontal travel of head on arm	27"	39"	51"
Spindle traverse in head	12"	12"	12"
Spindle Morse taper	No. 4	No. 4	No. 4
Spindle diameter of nose	2"	2"	2"
Spindle diameter least section	1-1/4"	1-1/4"	1-1/4"
Spindle quill diameter	2-7/8"	2-7/8"	2-7/8"
Number of spindle speeds	9	9	9
Spindle speed ranges for all three models (Select One)	60-1200, 75-1500, 100-2000, 125-2500, 50-3000, 175,3500		
Motor HP	5	5	5
Number of spindle feeds	4	4	4
Spindle feeds IPR, High (optional)		.004-.008-.014-.020	
Spindle feeds IPR, Low (optional)		.002-.004-.007-.010	
Floor to top of column	102"	102"	102"
Floor to top of head (maximum)	105"	105"	105"
Base to spindle (maximum)	54"	54"	54"
Base to spindle (minimum)	18"	18"	18"
Maximum spindle radius	44-1/2"	56-1/2"	68-1/2"
Minimum spindle radius	17-1/2"	17-1/2"	17-1/2"
Arm traverse on column	24"	24"	24"
Face of arm (spread of ways)	9"	9"	9"
Length of head bearing on arm	12-3/4"	12-3/4"	12-3/4"
Length of arm bearing on column	21-1/2"	21-1/2"	21-1/2"
Base working surface	34" x 47"	34" x 59"	34" x 71"
Base height	7-1/4"	7-1/4"	7-1/4"
Base extension, width and length	22" x 35"	22" x 35"	22" x 35"
Net weight, lbs.	7000	7700	8400
Shipping weight, lbs.	7500	8200	8900



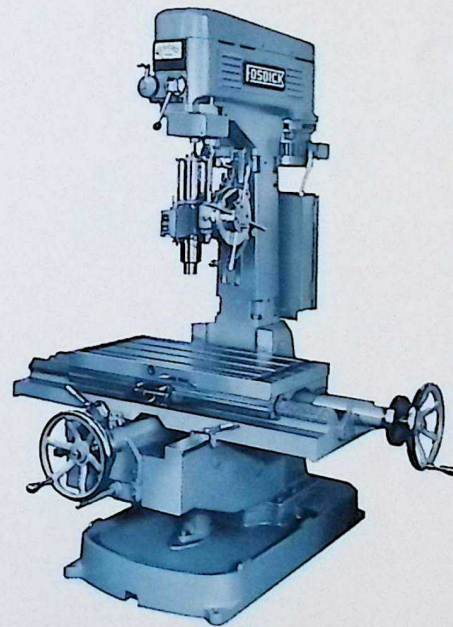
Model VS machine



Model B machine



4B and 5B heads may be combined with up to six spindles on a common base. An exclusive Fosdick option permits adjustment of center-to-center distances of individual spindles on a sliding way on top of base.



Single spindle Sensitive Drills can be equipped with an 18" x 36" layout table having a travel of 12" x 30". Table is available for both Model B and Model VS machines. Saves layout and locating time.

The B Models feature a belted motor drive, using a standard motor to provide either six or nine spindle speeds, in a number of ranges. Low range is 55 to 900 rpm; high range, 220 to 3600 rpm. The VS Models are capable of infinitely variable speeds between 62 and 3000 rpm. Either model may be purchased as a multiple spindle machine, using a common base and table.

The Fosdick line offers such a broad range of standard components and options that a drill can readily be built to produce *for you* the most profit per hole.

OPTIONAL EQUIPMENT

Adjustable columns, adjustable feed lever, power feed, flanged quill, lead screw taper, tool ejector, reversing motor taper, power elevating table, back-up bar, work light, wear plates, tachometer, tilting table and layout table.

SPECIFICATIONS	4B	5B 5VS
Capacity (in cast iron)	1"	1-1/2"
Horsepower per spindle	1-1/2	3
Table to spindle (max.)	31-1/2"	29"
Table to spindle (min.)	0"	0"
Spindle traverse	6"	6"
Spindle head traverse	10"	10"
Spindle nose diameter	1-7/16"	1-5/8"
Spindle Morse taper number	2 or 3	3 or 4
Spindle diameter at point of drive	7/8"	1-1/8"
Table traverse, vertical	16"	14-1/2"

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