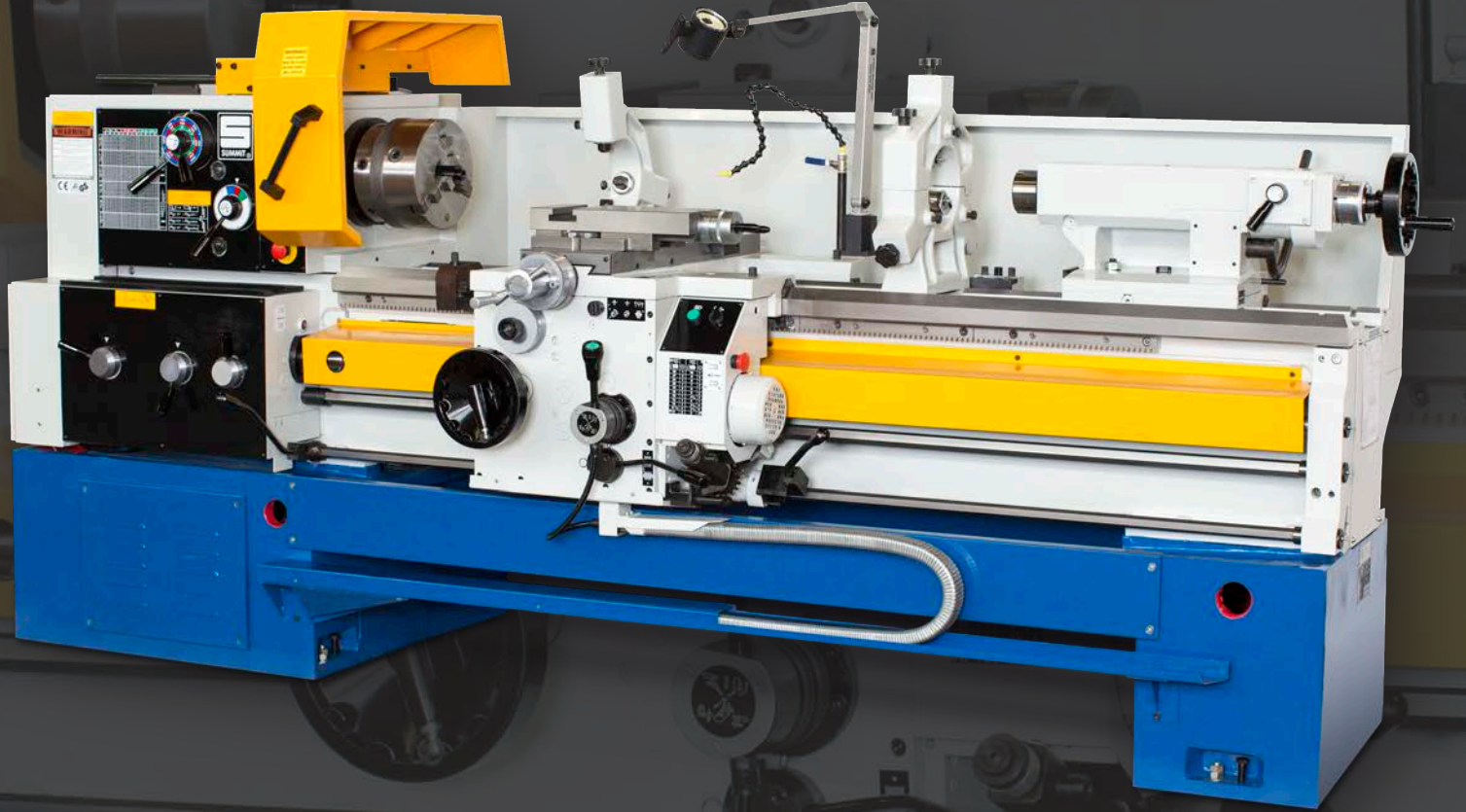


**SUMMIT**  
MACHINE TOOL LLC



**PRECISION ENGINE LATHES**

**16-3" LATHES**

# SUMMIT 16-3" PRECISION METAL LATHES

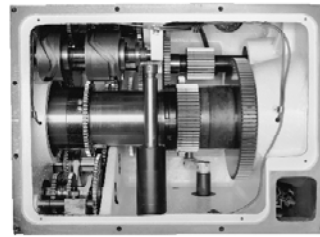
The **Summit 16-3"** Lathes combine accuracy, simplicity and affordability to bring you a proven industry leader. Tested under the most demanding work conditions, the **Summit 16-3"** turns rings around other lathes in their class.

The 16-3" lathes have just the right amount of engineering to afford simplicity of operation, coupled with plain and simple rugged reliability. In addition, built in safety features like the safety clutch in the apron that kicks out the feed and the feed/threading safety interlock eliminating the simultaneous engagement of the feed and threading motion, place these machines in a field of their own — unparalleled in performance.

A few of the outstanding features of the 16-3" lathes are a cross ribbed headstock for added strength and stability, with anti-friction mounted shafts and dynamically balanced components; hardened and ground alloy steel gears, shafts and splines, and an oversized precision chrome alloy spindle with a big 3" thru hole that is mounted in double row angular contact thrust bearings and 2 double row roller bearings. These large spindle bearings give the 16-3" greater radial and thrust capacities ensuring very precise turning capabilities.

Available in 40", 60" and 80" center distances, the 16-3" lathes have 18" swing over the bed, and a 9 1/2" swing over the cross slide. They also feature hardened and precision ground bedways on a heavy one-piece closed grain cast bed that is fully ribbed for maximum stability and even thermal expansion. Standard on every machine is a quick-change gearbox for cutting Metric, Module and Diametral Pitch threads as well as standard American threads.

The engineering excellence, fine workmanship, materials and impressive specifications of the Summit Lathes assure you of greater production and easy, trouble free operation for years to come.



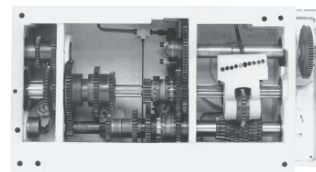
## Headstock

Fully geared headstock provides twenty one (21) spindle speeds through precise, hardened and ground gears. Each gear is thoroughly tested for accurate tooth configuration and flank engagement to assure optimum quiet and smooth running, and is precision fitted on hardened and ground splined shafts for ease of speed selection. All shafts are mounted in ball or tapered roller bearings. Spindle drive is achieved through mechanical "multi-disc" clutches for forward, and reverse rotation.



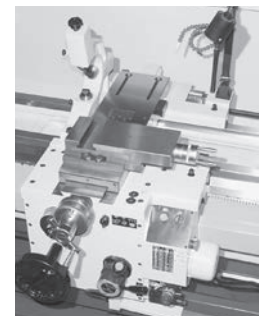
## "Thru Hole"

Spindle is precision machined, hardened and ground from a massive one-piece forging. It features a full 3" thru hole, enabling large work pieces to be introduced without excessive overhang. The spindle is mounted in precision angular contact thrust bearings for accuracy and smooth running, and is supported by large diameter precision roller bearings for stability. Chuck mounting is standard D1-8 camlock and a reduction sleeve is provided to facilitate use of Morse taper tooling.



## Norton Control Box

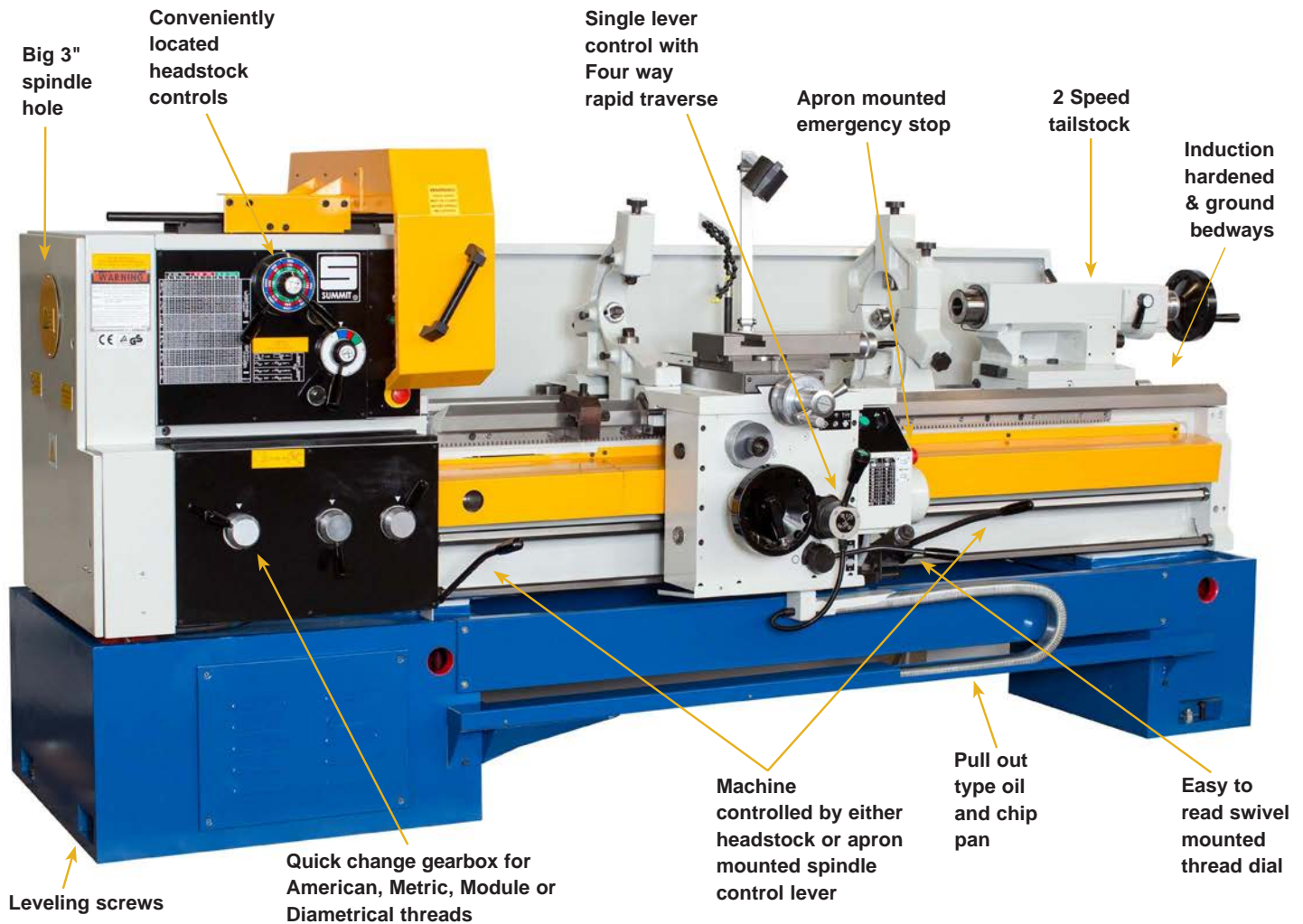
Totally enclosed, quick change feed gearbox allows easy selection of most standard and metric threads and feeds without use of change gears. All gears and splined shafts are of hardened and ground alloy steel, precision fitted for ease of shifting and mounted in high precision anti-friction bearings. The feed gearbox assembly is oil bath lubricated for smooth operation and quiet running.



## Carriage

Carriage assembly features extended cross slide for accommodation of special tooling, tracer attachments, etc. The cross slide is constructed of high quality cast iron and incorporates externally adjustable nuts to provide for backlash elimination. The rugged, heavy duty taper attachment is capable of generating tapers of  $\pm 10$  degrees up to 15 3/4 inches long and is graduated in degrees for convenience of operation.





### Bedway

The bed is constructed of high grade, alloyed cast iron, normalized and aged to achieve maximum stability. The design features heavy cross ribbing for rigidity and vibration dampening and utilizes hardened and ground, bedways. The bedway design is of the double vee, 60 degree opposed style (most commonly described as the "LeBlond Profile"), affording extended accuracy and long machine life.

## ACCESSORIES

- Thread dial
- Steady rest with roller tips
- Follow rest
- Coolant system
- 3-Jaw chuck (10")
- Carriage stop
- Work light
- Taper Attachment

All accessories at no extra charge when purchased with lathe.

## OPTIONAL EQUIPMENT

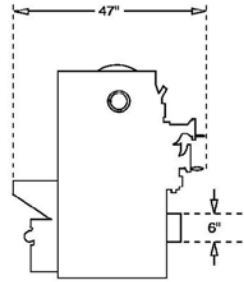
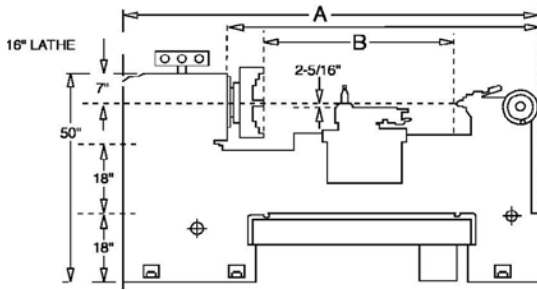
- Quick change tool post w/ holders
- Electronic DRO
- Other workholding devices & tooling available on request

## STANDARD FEATURES

- Hardened and ground bedways
- Big 3" thru hole Inch/metric threads
- Conveniently located controls
- Forced lubrication to the head-stock, carriage and bedways
- Cuts most American & Metric threads without change gears
- Complete accessory package
- Crossfeed and threading safety interlock
- Feed reversing at the apron
- Hardened and ground cross slide ways
- 4-way rapid traverse
- Heavily ribbed bed
- Single lever control for feeds and rapids
- Full length chip guard
- Sliding chuck guard with limit switch
- 2 Speed Tailstock

# DIMENSIONS AND SPECIFICATIONS

## 16-3" PRECISION ENGINE LATHE



A	101"	121"	141"
B	40"	60"	80"

### SPECIFICATIONS

	Standard	Metric
<b>CAPACITIES</b>		
Swing over bed	18"	460mm
Swing over cross slide	9 1/2"	240mm

### WORKPIECE WEIGHTS

	Standard	Metric
At headstock	350 lbs.	159 kgs
Between centers	1,500 lbs.	682 kgs
Between centers with steady rest	3,000 lbs.	1,364 kgs

### HEADSTOCK

	Standard	Metric
<b>HEADSTOCK</b>		
Spindle speeds - number	21	
Spindle speeds - range (RPM)	20 to 2000	
Hole thru spindle	3"	77mm
Spindle nose type	D1-8 Camlock	
Headstock center	#6 MT	
Number of bearings on spindle	3	
Headstock length on bed	24 1/2"	622mm
Type of bearings on spindle	Angular Contact Thrust Bearings Straight Roller Radial Bearings	
<b>Main spindle bearing</b>		
outside diameter	8 1/2"	220mm
inside diameter	5"	130mm
Overall length of spindle	34"	864mm

### QUICK CHANGE GEARBOX

	Standard	Metric
<b>QUICK CHANGE GEARBOX</b>		
Threads per inch - (number) range	(64) 1/4 to 60	
Metric threads - (number) range	(64) .5 to 120	
Module threads - (number) range	(64).125 to 30	
Diametral pitch - (number) range	(64) 1 to 240	
Long. feeds - (number) range	(124) .00145 to .44474	
Cross feeds - (number) range	(124) .0007 to .22237	
Leadscrew - diameter/range	2" / 2 T.P.I.	
Feed rod diameter	1"	25mm
Lubrication system	Oil bath	

### CARRIAGE & APRON

	Standard	Metric
<b>CARRIAGE &amp; APRON</b>		
Cross slide travel	12 1/4"	310mm
Cross slide depth of bridge	4 3/4"	120mm
Cross slide width of bridge	8 1/4"	210mm
Compound rest travel	5 3/8"	136mm
Compound rest width	5 7/8"	150mm
Length of carriage bearing on ways	23"	584mm

### SPECIFICATIONS

	Standard	Metric
<b>SPECIFICATIONS</b>		
Travel of carriage per revolution of handwheel	.75"	19mm
Graduations of carriage cross slide handwheel (direct reading)	.002"	0.05mm
<b>Travel of cross slide per revolution of handwheel</b>		
	.200"	5mm
Height from top of compound to centerline of lathe	1 5/8"	42mm
Type of lubrication system	Reciprocating Pump	

### TAILSTOCK

	Standard	Metric
<b>TAILSTOCK</b>		
Travel of spindle barrel	9 1/2"	241mm
Diameter of spindle barrel	3 1/2"	90mm
Taper of center	#5 MT	
Tailstock body length on bed	13 3/4"	350mm
Length of barrel graduations on spindle	6"	152mm
Type of clamping on bed	Bolts and Lever Clamp	
Type of lubrication system	Reservoir	

### BED

	Standard	Metric
<b>BED</b>		
Width of bed	15 3/4"	400mm
Depth of bed	16 7/8"	429mm
Hardness of bed (Rockwell C)	42 to 48	

### TAPER ATTACHMENT

	Standard	Metric
<b>TAPER ATTACHMENT</b>		
Degrees of taper		±10°
Maximum turning length per setting	15 3/4"	400mm

### HEADSTOCK DRIVE & MOTORS

	Standard	Metric
<b>HEADSTOCK DRIVE &amp; MOTORS</b>		
Type of input drive	vee belt	
Number of vee belts	4	
Main drive motor	10 H.P.	7.5 KW
Coolant pump motor	1/4 H.P.	.18 KW

### MISCELLANEOUS

	Standard	Metric
<b>MISCELLANEOUS</b>		
Steady rest - min. to max capacity	1/2" to 6 1/8"	12.5 to 155mm
Follow rest - min. to max capacity	1/2" to 7 7/8"	12.5 to 200mm
Centerline height above floor	43"	1,100mm

### SHIPPING DATA

	Standard	Metric
<b>SHIPPING DATA</b>		
Overall width	48"	1,220mm
Overall height	60"	1,525mm
<b>Overall length/weight</b>		
40" Centers (In/lbs - mm/kgs)	114"/6,200	2,900/2,800
60" Centers (In/lbs - mm/kgs)	134"/6,600	3,400/3,000
80" Centers (In/lbs - mm/kgs)	154"/7,100	3,900/3,220

**WARRANTY:** A copy of Summit Machine Tool LLC's standard written warranty is attached to each Summit Machine. Call or write to Summit for a copy or for further information concerning Summit's standard warranty. All purchases are subject to Summit's standard written warranty. Specifications are subject to change without notice.

**POINT OF OPERATION GUARDING** is the responsibility of the end user. For information contact your local OSHA office.

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