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# MANUAL LATHE

1. ALL-GEAR  
TYPE

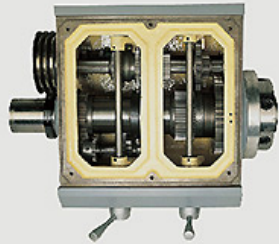
FC / ML / TL  
RML / ERL

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# FC.ML.TL RML.ERL Series

## Features

- Nylon safety gears in end train. (Not for every model)
- Shear pin in lead screw.
- Low voltage control in electrical cabinet.



### RUGGED HEADSTOCK

- Head housing features outstanding vibration dampening and deformation free performance.
- Rugged head construction gives extra rigidity and heavy cutting.
- All gears and shafts are hardened and precision ground by precision machines.



### GEAR BOX

- The universal type gear box provides a wide range of inch, metric, M. P. and D.P. threads without changing any gear for increased convenience.
- Gears are hardened.
- Oil bath lubrication in gear box.



### HEAVY DUTY SPINDLE

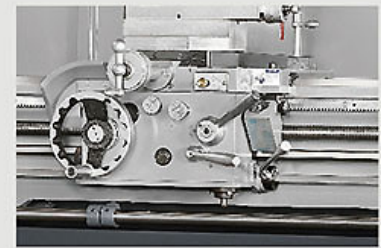
- Camlock type spindle.
- Precision machined from forged alloy steel, hardened, precision ground and dynamically balanced.
- Three point support by high precision taper roller and ball bearings eliminates chatter when performing heavy cut.

### BED

- The ruggedly constructed bed is manufactured from Meehanite cast iron and stress relieved.
- Bed ways are hardened and precision ground.

### COMPOUND REST

- The compound rest has T-slot for convenient mounting of tool holder. (Imperial models only)
- Both the cross slide and the compound rest screws are equipped with inch/metric graduated dials.
- The bottom of the compound slide is graduated in degrees for quick reference when swiveling.



### APRON

- The apron is a double wall construction, providing a firm support for power feed shaft.
- Choice of right or left hand wheel.
- Integrated automatic control for longitudinal and cross feeds, forward and reverse feeds.
- An interlock design prevents simultaneous power feed and thread cutting.

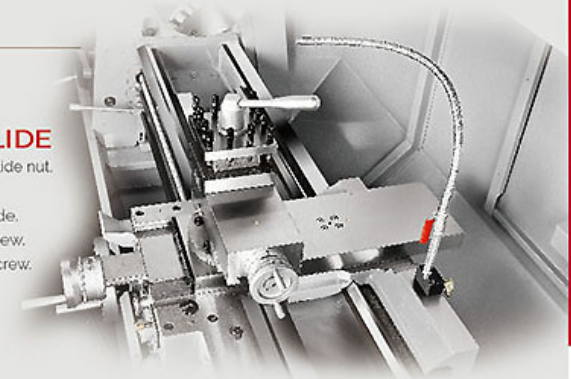


### RUGGED TAILSTOCK

- Tailstock quill is graduated in inch/metric scales and has a tang slot for positive drive of tool.
- 2-step tailstock is available on request.

### CARRIAGE AND CROSS SLIDE

- Anti-float backlash eliminator is fitted in cross slide nut.
- Safety clutch is equipped to feed shaft.
- One shot lubrication for carriage and top slide.
- Designed with dual dials for inch system screw.
- Designed with metrical dial for metric system screw.



# FC Series



- All models with one piece solid stand.
- All models with universal feed gearbox & reversable apron.
- All models meet CE. (on request).
- All models with 80mm (3.149") spindle bore, ASA D1-8.
- All models cross slide is hardened and ground to prolong operation life.

## FEATURES

- All castings are properly stabilized and stress relieved.
- Bed ways are hardened & ground to min. HRC 48-55.
- Turcite B coating between the bed and carriage.
- Extremely low noise level.
- Foot brake pedal provided.
- Built-in coolant pump & fitting provided.
- Wider bed way which give absorbs vibration.
- Y-Δ spindle motor equipped to make sure smooth start and operation.

## STANDARD ACCESSORIES

- Backplate for 10" chuck
- Dead center MT5
- Dead center MT4 with carbide tip
- Spindle center sleeve Ø85 Taper 1/19.18

- Level pads..6-8 pcs
- Tool set & Box
- Operation manual & parts list

MODEL	FC	1640	1660	1840	1860	1880	2140	2160	2180	
<b>Capacity</b>										
Height of centers		205 mm (8.07')			231 mm (9.05')			271 mm (10.67')		
Swing over bed		410 mm (16.14')			Ø462 mm (18.11')			Ø542 mm (21.34')		
Swing in gap		583 mm (22.95')			Ø650 mm (25.59')			Ø730 mm (28.74')		
Swing over cross slide		262 mm (10.3')			Ø305 mm (12')			Ø387 mm (15.23')		
Distance between centers		1000 mm (40')	1500 mm (60')	1000 mm (40')	1500 mm (60')	2120 mm (83.46')	1000 mm (40')	1500 mm (60')	2120 mm (83.46')	
Width of bed					320 mm (12.5')					
Gap width in front of faceplate					195 mm (7.67')					
<b>Headstock and Main Spindle</b>										
Spindle nose, internal taper					D1-8 /A1-8 (opt) Ø85mm Taper 1/19.18					
Spindle center sleeve					Ø85mm Taper 1/19.18 x MT. No.5					
Spindle bore					Ø80 mm (3.149')					
					12 steps					
Spindle speed					A	26	40	60	90	rpm
					B	105	145	205	305	rpm
					C	510	715	1000	1500	rpm
<b>Carriage</b>										
Cross slide travel		250 mm (9.84')					300 mm (11.81')			
Top slide travel					150 mm (5.9')					
<b>Threads and Feeds</b>										
Whitworth threads: Kinds / Range					45 kinds / 2- 72 TPI					
Metric threads: Kinds / Range					39 kinds / 0.2-14 mm					
D.P. threads: Kinds / Range					21 kinds / 8-44 DP					
M.P. threads: Kinds / Range					18 kinds / 0.3-3.5 M.P					
Longitudinal feeds					0.04-1.0 (0.0015"-0.04")					
Cross feeds					0.02-0.5 (0.00075"-0.02")					
<b>Tailstock</b>										
Quill diameter			Ø59 mm (2.322')			Ø68 mm (2.677')	Ø59 mm (2.322')	Ø68 mm (2.677')		
Quill travel			127 mm (5')			153 mm (6')	127 mm (5')	153 mm (6')		
Taper of center					MT. NO. 4					
<b>Motor</b>										
Main spindle					Std. 10 HP (7.5 kW) / Opt. 12.5 HP (9.375 kW)					
Coolant pump					1/8 HP					
<b>Measurement</b>										
Weight Approx.	Net	1750 kgs	1900 kgs	1800 kgs	1950 kgs	2350 kgs	1850 kgs	2000 kgs	2400 kgs	
	Gross	1950 kgs	2150 kgs	2000 kgs	2200 kgs	2650 kgs	2050 kgs	2250 kgs	2700 kgs	
	Length	2400 mm	2900 mm	2400 mm	2900 mm	3700 mm	2400 mm	2900 mm	3700 mm	
Packing sizes	Width x Height	Width 1165 mm (45.5") x Height 1900 mm (74.8")								

Specifications subject to change without notice.

# ML Series

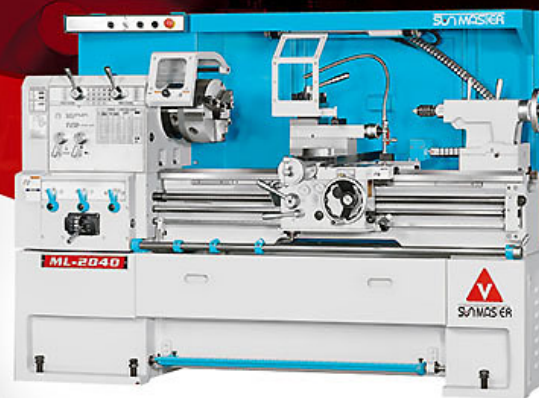
- All models with one piece solid stand.
- All models with universal feed gearbox & reversible apron.
- All models meet CE. (on request)
- All models with 80 mm (3.149") spindle bore. ASA D1-6.
- All models cross slide is hardened and ground to prolong operation life.

## FEATURES

- All castings are properly stabilized and stress relieved.
- Bed ways are hardened & ground to min. HRC 48-55.
- Turcite B coating between the bed and carriage.
- Extremely low noise level.
- Foot brake pedal provided.
- Built-in coolant pump & fitting provided.
- Wider bed way which give absorbs vibration.

## STANDARD ACCESSORIES

- Backplate for 10" chuck
- Dead center MT5
- Dead center MT4 with carbide tip
- Spindle center sleeve... Ø85mm Taper 1/19:18
- 5. Level pads...6 pcs
- 6. Tool set & Box
- 7. Operation manual & parts list



MODEL	ML	1740	1760	2040	2060
Capacity					
Height of centers		216 mm (8.5")		254 mm (10")	
Swing over bed		Ø432 mm (17")		Ø508 mm (20")	
Swing in gap		Ø622 mm (24.48")		Ø698 mm (27.48")	
Swing over cross slide		Ø277 mm (10.9")		Ø353 mm (13.89")	
Distance between centers		1000 mm (40")	1500 mm (60")	1000 mm (40")	1500 mm (60")
Width of bed			305 mm (12")		
Gap width in front of faceplate			195 mm (7.67")		
<b>Headstock and Main Spindle</b>					
Spindle nose, internal taper		D1-6 / A1-6 (Opt) Ø85 mm Taper 1/19:18			
Spindle center sleeve		Ø85 mm Taper 1/19:18 x MT. No.5			
Spindle bore		Ø80 mm (3.149")			
		12 steps / 36-1800 R.P.M.			
Spindle speed:		A 36	50 70 105	rpm	
Gear steps / Range		B 130	180 250 380	rpm	
		C 620	900 1200 1800	rpm	
<b>Carriage</b>					
Length on bed / Width of carriage		440 mm (17.32") / 477 mm (18.77")			
Cross slide travel		235 mm (9.25")		272 mm (10.7")	
Top slide travel			155 mm (6.1")		
<b>Threads and Feeds</b>					
Whitworth threads: Kinds / Range		45 kinds / 2-72 TPI			
Metric threads: Kinds / Range		39 kinds / 0.2-14 mm			
D.P. threads: Kinds / Range		21 kinds / 8-44 DP			
M.P. threads: Kinds / Range		18 kinds / 0.3-3.5 MP			
Longitudinal feeds		0.04-1.0 mm (0.0015"-0.04")			
Cross feeds		0.02-0.5 mm (0.00075"-0.02")			
<b>Tailstock</b>					
Quill diameter		Ø59 mm (2.322")			
Quill travel		127 mm (5")			
Taper of center		MT. No. 4			
<b>Motor</b>					
Main spindle		7.5 HP			
Coolant pump		1/8HP			
<b>Measurement</b>					
Weight (Net /Gross)		1700 kgs	1850 kgs	1750 kgs	1900 kgs
Approx.		1840 kgs	2010 kgs	1890 kgs	2060 kgs
Packing sizes	Length	2400 mm (94.5")	2900 mm (114.2")	2400 mm (94.5")	2900 mm (114.2")
	Width x Height	Width 1115 mm (45.5") x Height 1900 mm (74.8")			

Specifications subject to change without notice.

# TL Series

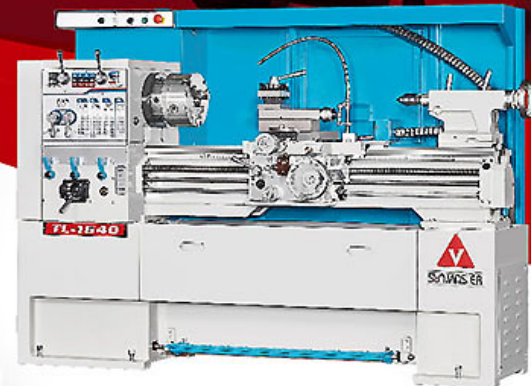
- All models with one piece solid stand.
- All models with universal feed gearbox & reversible apron.
- All models meet CE. (on request)
- All models with 65mm (2.55") spindle bore. ASA D1-6.

## FEATURES

- All castings are properly stabilized and stress relieved.
- Bed ways are hardened & ground to min. HRC 48-55.
- Turcite B coating between the bed and carriage.
- Extremely low noise level.
- Foot brake pedal provided.
- Built-in coolant pump & fitting provided.
- Wider bed way which give absorbs vibration.

## STANDARD ACCESSORIES

- Backplate for 9" chuck
- Dead center MT.4
- Dead center MT.4 with carbide tip
- Spindle center sleeve Ø70 Taper 1/19.18
- Level pads..6 pcs
- Tool set & Box
- Operation manual & parts list



MODEL	TL	1440	1640	1660
Capacity				
Height of centers		180 mm (7.08")		205 mm (8.07")
Swing over bed		Ø360 (14.17")		Ø410 mm (16.14")
Swing in gap		Ø533 mm (20.98")		Ø583 mm (22.95")
Swing over cross slide		Ø210 mm (8.06")		Ø260 mm (10.236")
Distance between centers		1000 mm (40")	1000 mm (40")	1500 mm (60")
Width of bed			Ø260 mm (10.236")	
Gap width in front of faceplate		135 mm (5.31")		225 mm (8.85")
<b>Headstock and Main Spindle</b>				
Spindle nose type			D1-6	
Spindle center sleeve			Ø70mm Taper 1/19.18 x MT. NO.4	
Spindle bore			Ø65 mm (2.55")	
			12 steps / 36-1800 R.P.M.	
Spindle speed:		A 36 50 70 105 rpm		
Gear steps / Range		B 130 180 250 380 rpm		
		C 620 900 1200 1800 rpm		
<b>Carriage</b>				
Cross slide travel			220 mm (8.6")	
Top slide travel			125 mm (4.92")	
<b>Threads and Feeds</b>				
Whitworth threads: Kinds / Range			45 kinds / 2-72 T.P.I.	
Metric threads: Kinds / Range			39 kinds / 0.2-14 mm	
D.P. threads: Kinds / Range			21 kinds / 8-44 D.P.	
M.P. threads: Kinds / Range			18 kinds / 0.3-3.5 M.P.	
Longitudinal feeds			0.05-1.7 mm (0.002"-0.067")	
Cross feeds			0.025-0.85 mm (0.001"-0.034")	
<b>Tailstock</b>				
Quill diameter			Ø52 mm (2.47")	
Quill travel			152 mm (6")	
Taper of center			MT. No.4	
<b>Motor</b>				
Main spindle			5HP	
Coolant pump			1/8HP	
<b>Measurement</b>				
Weight (Net /Gross)		1550 kgs	1600 kgs	1700 kgs
Approx.		1670 kgs	1720 kgs	1860 kgs
Packing sizes	Length	2270 mm (89.4")	2270 mm (89.4")	2785 mm (109.7")
	Width x Height	Width 1120 mm (44.1") x Height 1900 mm (74.8")		

Specifications subject to change without notice.

# RML Series

- All models with one piece solid stand. (Except 1430/1630)
- All models with universal feed gearbox & reversable apron.
- All models meet CE. (on request)
- All models with 52.5mm (2.066") spindle bore. ASA D1-6.



## FEATURES

- All castings are properly stabilized and stress relieved.
- Bed ways are hardened & ground to min. HRC 48-55.
- Turcite B coating between the bed and carriage.
- Extremely low noise level.
- Foot brake pedal provided.
- Built-in coolant pump & fitting provided.
- Wider bed way which give absorbs vibration.

## STANDARD ACCESSORIES

- Backplate for 9" chuck
- Level pads..6 pcs
- Dead center MT.4
- Tool set & Box
- Center MT.4 with carbide tip
- Operation manual & parts list
- Spindle center sleeve MT.6

MODEL	RML	1430	1440	1460	1630	1640	1660
<b>Capacity</b>							
Height of centers			180 mm (7.08")			205 mm (8.07")	
Swing over bed			ø380 mm (14.17")			ø410 mm (16.14")	
Swing in gap				ø533 mm (20.98")			ø583 mm (22.95")
Swing over cross slide			ø212 mm (8.35")			ø262 mm (10.3")	
Distance between centers		800 mm (31.5")	1000 mm (40")	1500 mm (60")	800 mm (31.5")	1000 mm (40")	1500 mm (60")
Width of bed				260 mm (10.236")			
Gap width in front of faceplate			135 mm (5.31")	225 mm (8.85")		135 mm (5.31")	225 mm (8.85")
<b>Headstock and Main Spindle</b>							
Spindle nose, internal taper					D1-6 / A1-6 (Opt), MT. No.6		
Spindle center sleeve					MT. No.6 x MT. No.4		
Spindle bore					ø52.5 mm (2.066")		
Spindle speed					Std. 8 steps / 70-1800 R.P.M.		
Gear steps / Range					Opt. 16 steps / 8P 40-1000 R.P.M. 4P 80-2000 R.P.M.		
<b>Carriage</b>							
Length on bed / Width of carriage					513 mm (20.19") / 412 mm (16.22")		
Cross slide travel					220 mm (8.6")		
Top slide travel					125 mm (4.92")		
<b>Threads and Feeds</b>							
Whitworth threads: Kinds / Range					45 Kinds / 2-72 T.P.I.		
Metric threads: Kinds / Range					39 Kinds / 0.2-14 mm		
D.P. threads: Kinds / Range					21 Kinds / 8-44 D.P.		
M.P. threads: Kinds / Range					18 Kinds / 0.3-3.5 M.P.		
Longitudinal feeds					0.05-1.7 mm (0.002"-0.067")		
Cross feeds					0.025-0.85 mm (0.001"-0.034")		
<b>Tailstock</b>							
Quill diameter					ø52 mm (2.047")		
Quill travel					152 mm (6")		
Taper of center					MT. No.4		
<b>Motor</b>							
Main spindle					Std. 5HP 4P	Opt. 5HP 4P / 2.5HP 8P	
Coolant pump						1/8HP	
<b>Measurement</b>							
Weight (Net /Gross)		1300 kgs	1350 kgs	1450 kgs	1350 kgs	1400 kgs	1500 kgs
Approx.		1400 kgs	1470 kgs	1610 kgs	1450 kgs	1520 kgs	1660 kgs
Packing sizes	Length	2070 mm (81.5")	2270 mm (89.4")	2785 mm (109.7")	2070 mm (81.5")	2270 mm (89.4")	2785 mm (109.7")
	Width x Height	Width 1120 mm (44.1") x Height 1900 mm (74.8")					

Specifications subject to change without notice.

# ERL Series

- All models with oil bathed lubrication system to headstock.
- All models meet CE. (on request)
- All models with 40mm (1.57") spindle bore, ASA D1-4.

## FEATURES

- All castings are properly stabilized and stress relieved.
- Bed ways are hardened & ground to min. HRC 48-55.
- Extremely low noise level.
- Foot brake pedal provided.
- Built-in coolant pump & fitting provided.
- Wider bed way which give absorbs vibration.

## STANDARD ACCESSORIES

- Backplate for 7" chuck
- Dead center MT.3
- Center MT.3 with carbide tip
- Spindle center sleeve MT.5
- Level pads..6 pcs
- Tool set & Box
- Operation manual & parts list



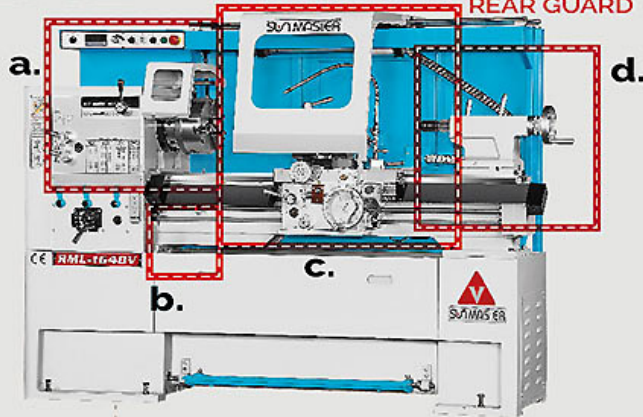
MODEL	ERL	1330	1340
<b>Capacity</b>			
Height of centers			171 mm (6.73")
Swing over bed			ø342 mm (13.46")
Swing in gap			ø512 mm (20")
Swing over cross slide			ø205 mm (8.07")
Distance between centers		760 mm (30")	1000 mm (40")
Width of bed			230 mm (9")
Gap width in front of faceplate			150 mm (5")
<b>Headstock and Main Spindle</b>			
Spindle nose, internal taper			D1-4, MT. No.5
Spindle center sleeve			MT. No.5 x MT. No.3
Spindle bore			ø40 mm (1.57")
Spindle speed:			Std. 8 steps / 80-2000 R.P.M.
Gear steps / Range			Opt. 16 steps / 4P 50-1350 R.P.M. 2P 100-2570 R.P.M.
<b>Carriage</b>			
Length on bed / Width of carriage		400 mm (15.748") / 384 mm (15.118")	
Cross slide travel			180 mm (7")
Top slide travel			95 mm (3.74")
<b>Threads and Feeds</b>			
Whitworth threads: Kinds / Range			45 kinds / 2-72 T.P.I.
Metric threads: Kinds / Range			39 kinds / 0.2-14 mm
D.P. threads: Kinds / Range			21 kinds / 8-44 D.P.
M.P. threads: Kinds / Range			18 kinds / 0.3-3.5 M.P.
Longitudinal feeds			0.05-17 mm (0.002"-0.067")
Cross feeds			0.025-0.85 mm (0.001"-0.034")
<b>Tailstock</b>			
Quill diameter			ø50 mm (1.968")
Quill travel			112 mm (4.5")
Taper of center			MT. No.3
<b>Motor</b>			
Main spindle		Std. 3HP 4P	Opt. 5HP 2P / 2.5HP 4P
Coolant pump			1/8HP
<b>Measurement</b>			
Weight (Net /Gross)		850 kgs	1000 kgs
Approx.		950 kgs	1120 kgs
Packing sizes	Length	2000 mm (78.8")	2270 mm (89.4")
	Width x Height	Width 965 mm (38") x Height 1900 mm (74.8")	

Specifications subject to change without notice.

# FC.ML.TL RML.ERL Series

## Optional Accessories

DELUXE TYPE  
REAR GUARD



**a** 5C LEVER TYPE COLLET CLOSER



**b** MICROMETER CARRIAGE STOP



5-STEP CARRIAGE STOP



**a** CHUCK SAFETY GUARDS  
■ Solid and clear acrylic material for safety.



**a** FACE PLATES  
■ Slotted. For all models.



**a** 4 & 3 JAW CHUCK



**d** DRILL CHUCKS  
■ keyless and key type.  
■ All sizes available.  
LIVE CENTERS



### DIGITAL READOUT SYSTEM (DRO)

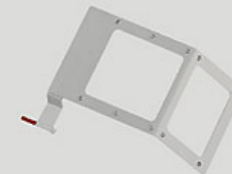
Operator friendly readout systems reduce setup time and increase productivity.

Features available:

- Tool offsets for easy compensation of different tool sizes
- Instant radius/ diameter conversion reduces math errors and allows you to machine to print dimensions.
- 2 or 3 axes display.
- Preset and zero rest.
- Instant inch/mm conversion.
- Near-zero warning.
- Most popular brands.



**c** TELESCOPIC TAPER ATTACHMENT  
■ Available for all models.



**c** TOOL POST SAFETY GUARD



**c** HAND WHEEL COVER



**c** STEADY REST  
■ For all models with roller tips.



**c** POWER FEED



**c** WORKING LIGHT



**c** QUICK CHANGE TOOL POST SET



**c** FOLLOW REST  
■ For all models.  
■ With bronze or roller tips.



**c** SLIDING TOOL POST SAFETY GUARD