

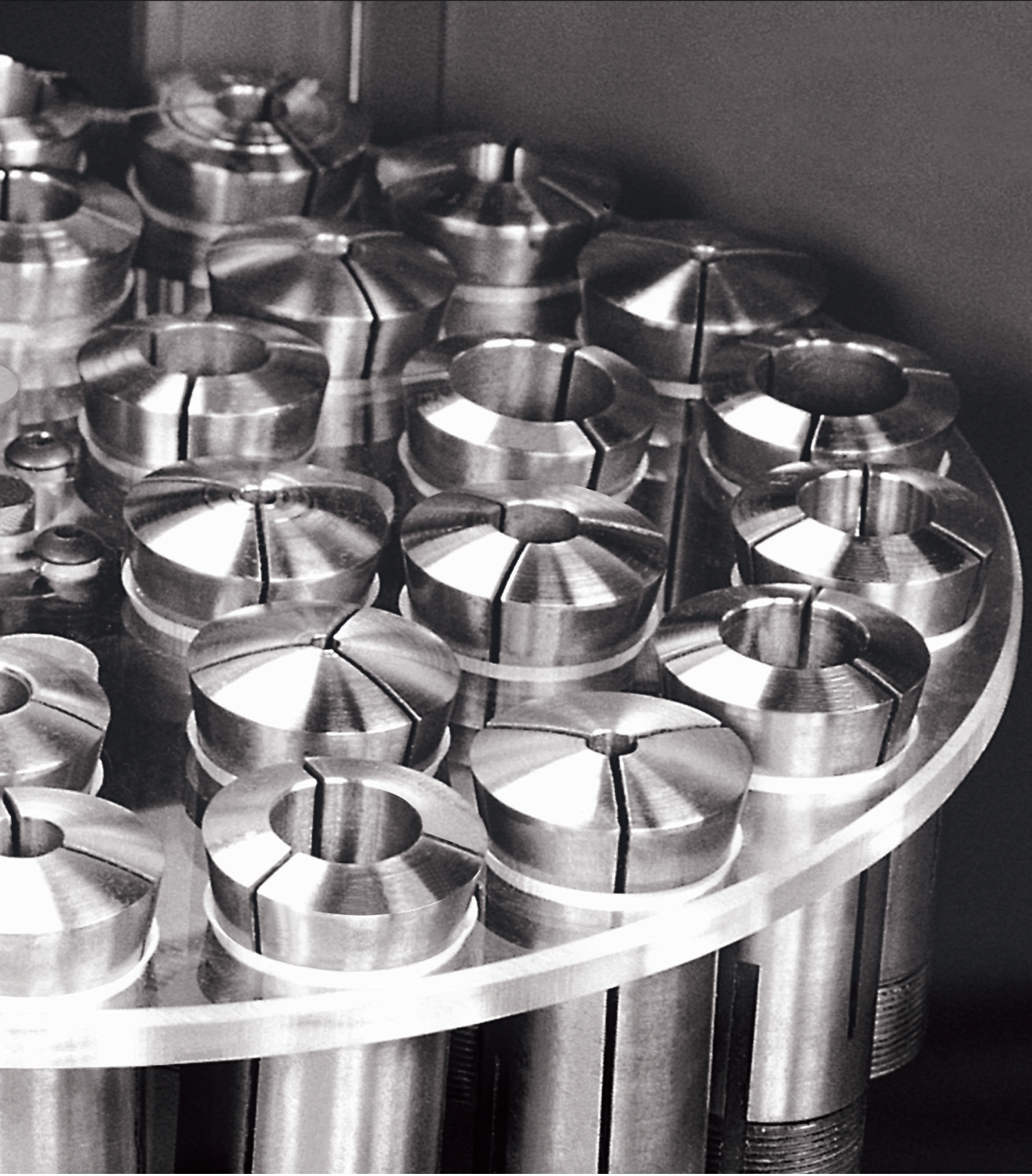
# CYCLEMATIC TOOLROOM LATHE

TOOLROOMS / SECOND OPERATION / CHUCKING / FINISHING

GUARANTEED CIRCULARITY ACCURACY to 0.00125mm ( 50 millionths inch )

Designing, Engineering and Manufacturing to the Highest Accuracy Standards !

**CYCLEMATIC** Founded in 1980





- Guaranteed Circular Accuracy to 0.00125 mm (50 millionths of an inch).
- Hardened and precision ground alloy steel bed way resists wear.
- Turcite-B slideway bearing surface between carriage and bed.
- FANUC CNC Controller (Standard).
- Powerful 3 HP (5 HP is optional) motor with Yaskawa current vector inverter drive for improving torque response at low end.
- Spindle mounted on high precision preloaded angular contact ball bearings.
- Precision ballscrew on X, Z axes.
- Protection guard on X, Z axes ballscrews.
- X, Z axes feed driven by AC Servo Motor.
- Z axis ballscrew directly coupled with AC Servo Motor minimize the backlash.
- Fast lever collet chucking.
- Optional power collet closer.
- Gang tooling options.
- Wide variety of accessories to increase versatility.

### Spindle tooling, tooling holder and optional equipment for CYCLEMATIC high speed, high accuracy toolroom lathe.



Expanding Collet



Vacuum Chuck



Hydraulic Chuck



Chuck Back Plate



6" 3-jaw Chuck



Lathe Dog



Face Plate



Pneumatic Chuck



Precision Diaphragm Chucks



Step Chuck

### GANG TOOL TURNING NOW AVAILABLE ON CT-118CNC (Gang Tool Block Center Height 12 mm)



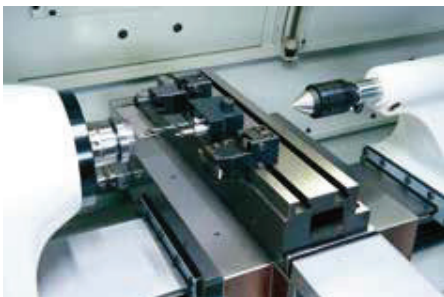
Bare cross slide with precision locator holes for custom applications.



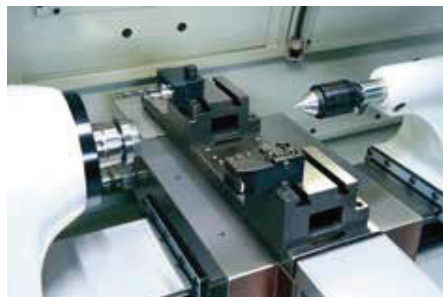
Quick change tool holder on tool block.



Lathe center in tailstock single tool on quick change tool holder on compound slide.



One full length gang tool block with T-slots to accommodate different kinds of tool holders.



Two "shorty" gang tool blocks leave room in the middle for longshaft work with the tailstock.



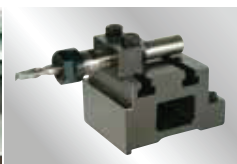
Multiple "single" gang tool blocks each holding a single tool holder.

### CT-118CNC toolroom lathe brings you two different styles of machining capabilities.

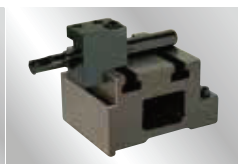
CT-118CNC is the NC upgrade from the CTL-618EVS manual toolroom lathe. It keeps the original machine's durability and elegant exterior while automating it with servos and CNC control. With the CT-118CNC's redesign we go even further. The ability to use a tailstock and lathe center to perform shaft work is maintained, but more importantly, an innovative tool plate design adds the capability to remove the compound tool post and swap in a T-slot gang tool slide in its place. The gang tool slide works great with a completely new line-up of tool holders from **CYCLEMATIC** for gang tool turning. The traditional lathe tooling setup and gangtool setup are easy to take out and exchange one for the other. The CT-118CNC is the one CNC toolroom lathe that now brings you two different styles of machining capabilities in one machine.



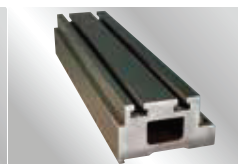
Tool Block for Quick Change Toolpost



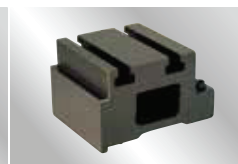
ER Collet Holder



Square Shank Tool Holder, Right Hand



Gang Tool Block 408 mm



Gang Tool Block 96 mm



Gang Tool Block 48 mm



Square Shank Tool Holder, Left Hand



Square Shank Tool Holder, Right Hand



Round Shank Tool Holder, 1 Position



Drill Holder, Adjustable Center



Releasing Die Nut Holder



Tap Holder

### Digital Threading Control

**NEW** Design

**The First Choice of Toolmakers!**



★ Monitor 5.7" or 7"



★ CPU designed specifically for fast, reliable controls. Interface display monitor.

#### WITH INTEGRATED DRO FUNCTIONS

- Flat panel LCD display shows spindle RPM and tool feed rate to let operator easily select best turning conditions.
- LCD displays electric current value to easily check for turning overload.
- Rapid retract function shortens threading cycle.
- Guaranteed Circular Accuracy to 0.00125 mm (50 millionths of an inch)
- Infinitely variable spindle speed from 50 ~ 4000 RPM.
- Full bearing carriage with Turcite-B coated slideway bearing material between carriage and bed.
- Fast lever collet chucking with one single movement.
- The spindle is mounted on high precision preloaded angular contact ball bearings eliminating radial and end play.
- Solid hardened and ground alloy tool steel bed.
- Powerful 3 HP motor with current vector inverter drive increases low end torque.

#### What is Digital Threading Control ?

**CTL-618e** toolroom lathe with Digital Threading Control replaces traditional threading gearboxes with microprocessor-controlled, servo-driven leadscrew. In the past, when a machinist was faced with a workpiece that called for thread pitch not supported on a conventional lathe, he had to locate and order a custom gear set and take the time to swap out the gears in the gearbox. This is not economically justifiable unless the volume is large enough. **CTL-618e** toolroom lathe's design eliminates this time-consuming process. With the new digital threading system, the user's threading wishes can be easily and immediately realized. Simply type in the desired thread pitch on the numeric keypad on the touch screen LCD control panel and then start the threading cycle as on other conventional lathes. **CTL-618e**'s system controls and synchronizes main spindle rotation and Z-axis feed rate to produce a precise threading cycle for the given TPI or mm thread pitch. Besides being able to cut thread pitches not previously available on manual lathes, noise and vibration are significantly reduced because there are actually no gears in the gearbox. Since **CTL-618e** already has a custom IC and an LCD panel to enable threading control, the next logical step is to integrate DRO functions for an all-in-one versatile machine. The **CTL-618e** has in fact done that. DRO capabilities are built-in and come standard with no extra charge. **CTL-618e** features linear scales on the X and Z axes from Mitutoyo. For people experienced with the super high precision of **CYCLEMATIC**'s toolroom lathes, the **CTL-618e** adds another dimension of capabilities. It builds on the same foundation as the **CTL-618EVS** toolroom lathe. They are all ideal for super high precision lathe work on small parts (usually those that fit in 5C collets).



Control Panel

- Spindle run out within 0.00125 mm (50 millionths of an inch)
- Hardened and precision ground spindle mounted on high-precision preloaded angular contact ball bearings maximizes rigidity and sustained precision.
- Infinitely variable spindle speed provides desired speed on demand.
- EVS model has 3 HP motor with current vector inverter drive for increased low end torque.
- Fast lever collet closer allows chucking with one single movement.
- Independent electric variable feeds for carriage and cross slide provide freedom of operation.
- Hardened and precision ground alloy steel bed way resists wear.
- Turcite-B slideway bearing surface between carriage and bed.
- Inch / Metric quick change gearbox
- Inch / Metric dual dial and quick action compound slide for threading.
- Automatic thread length control

### Spindle tooling, tooling holder and optional equipment for CYCLEMATIC high speed, high accuracy toolroom lathe



Four Station Turret



Step Chuck



Follow Rest



Steady Rest



Vertical Cut-off Slide



Quick Change Tool



Indicator Carriage Stop



Radius Turning Attachment



Taper Turning Attachment



Rear Tool Holder Slide Assembly

## CTS - 27EVS

## MANUAL SERIES

HIGH SPEED / HIGH ACCURACY **SECOND OPERATION MACHINE**



Six-Station Turret

- High/Low Speed Quick Change Lever for Convenience
- Six-Station Turret
- Double Tool Cross Slide for Many Practical Applications
- 229 mm (9") swing over bed.
- The spindle is mounted in high precision preloaded angular contact ball bearings eliminating radial and end play.
- Fast lever collet chucking with a single movement.
- Variable spindle speeds 50~4000 RPM.
- Solid hardened and ground alloy tool steel bed ways.
- The preloaded ball bearing turret head eliminates all play between the turret head and the turret slide.
- Powerful 3 HP frequency controlled motor.

## CTL - 27EVS

## MANUAL SERIES

HIGH SPEED / HIGH ACCURACY **SECOND OPERATION / TOOLMAKER'S LATHE**



Control Panel

- High/Low Speed Quick Change Lever for Convenience
- Screw Feed Tailstock
- X, Z Axis Compound Slide
- Designed to Machine Precision Small Diameter Parts
- High Performance Machining of Shafts
- Chucking or Collet Hold Workpiece
- 229 mm (9") swing over bed.
- The spindle is mounted in high precision preloaded angular contact ball bearings eliminating radial and end play.
- Fast lever collet chucking with a single movement.
- Variable spindle speeds 50~4000 RPM.
- Solid hardened and ground alloy tool steel bed ways.
- Powerful 3 HP frequency controlled motor.



Marker

- A compact machine with proven design!
- Superior surface finish!
- 229 mm (9") swing over bed
- 27 mm (1  $\frac{1}{16}$ ") 5C collet capacity.
- Fast lever collet chucking.
- Hardened and precision ground alloy tool steel bed ways 229 mm (9") length.
- Preloaded angular contact ball bearing spindle.
- Infinitely variable spindle speed from 50-4000 RPM.
- 1 HP frequency controlled motor

MODEL	CT-118CNC	
Maximum Swing	Ø380 mm	
Maximum Turning Diameter	Ø150 mm ( Ø6")	
Distance Between Centers	457 mm	
Bar Stock Diameter ( 5C Collet )	Ø27 mm ( Ø1 $\frac{1}{16}$ " )	
Hole Through Spindle	Ø31.75 mm ( Ø1 $\frac{1}{4}$ " )	
CNC Controller	FANUC (STANDARD)	
Spindle Speeds (Variable)	50~4000 RPM (3HP)	50~6000 RPM (5HP)
Spindle Nose I.D./O.D.	5C (10°) / 4° Taper	
Chuck Diameter	Ø150 mm ( Ø6")	
Maximum X Axis Travel	220 mm	
Maximum Z Axis Travel	340 mm	
Rapid Traverse	20 m/min	
Inverter Spindle Motor	3 HP	5 HP
X, Z Axis Servo Motor	X: β2 Z: β2	
Coolant Pump	1/4 HP	
Tailstock Spindle Taper	MT No.2	
Tailstock Spindle Travel	95 mm	
Machine Dimensions (L x W x H)	2050 x 1000 x 1650 mm (81" x 40" x 65")	
Machine Weight	1200 kg (2640 lbs.)	

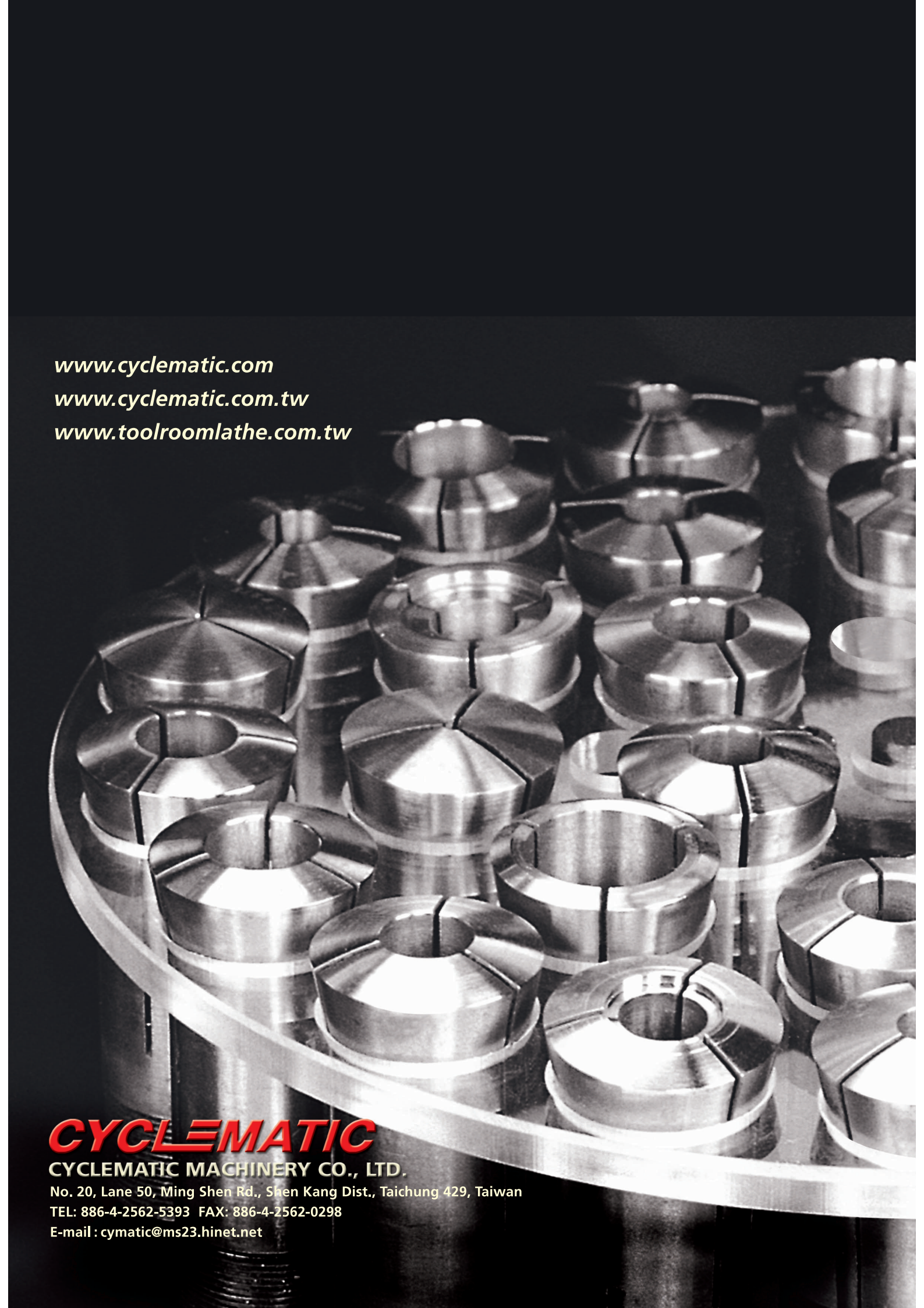
\*To allow for the continuing innovation, product dimensions are subject to change without prior notice.

# SPECIFICATIONS

MODEL		CTL-618 <sup>e</sup> CTL-618EVS	CTS-27EVS CTL-27EVS	CHR-68 <sup>e</sup>	CP-27EVS
SPINDLE CAPACITY	With Chuck	150 mm (6")	150 mm (6")	150 mm (6")	127 mm (5")
	With Expanding Collets	76 mm (3")	76 mm (3")	76 mm (3")	76 mm (3")
	With Round 5C Collets	27 mm (1 <sup>1</sup> / <sub>16</sub> ")	27 mm (1 <sup>1</sup> / <sub>16</sub> ")	27 mm (1 <sup>1</sup> / <sub>16</sub> ")	27 mm (1 <sup>1</sup> / <sub>16</sub> ")
	With Hexagon 5C Collets	22 mm (7/8")	22 mm (7/8")	22 mm (7/8")	22 mm (7/8")
	With Square 5C Collets	19 mm (3/4")	19 mm (3/4")	19 mm (3/4")	19 mm (3/4")
	With Step Chuck	27 ~ 152 mm (1 <sup>1</sup> / <sub>16</sub> " ~ 6")	27 ~ 152 mm (1 <sup>1</sup> / <sub>16</sub> " ~ 6")	27 ~ 152 mm (1 <sup>1</sup> / <sub>16</sub> " ~ 6")	27 ~ 152 mm (1 <sup>1</sup> / <sub>16</sub> " ~ 6")
Spindle Nose Diameter	Ø55.5 mm	Ø55.5 mm	Ø55.5 mm	Ø55.5 mm	
Spindle Nose I.D./O.D.	5C (10°) / 4° Taper	5C (10°) / 4° Taper	5C (10°) / 4° Taper	5C (10°) / 4° Taper	
Spindle Speeds (Variable)	50~4000 RPM	50~4000 RPM	50~4000 RPM	50~4000 RPM	
Inverter Spindle Motor	3 HP	3 HP	3 HP	1 HP	
Hole Through Spindle	31.75 mm (1 <sup>1</sup> / <sub>4</sub> ")	31.75 mm (1 <sup>1</sup> / <sub>4</sub> ")	31.75 mm (1 <sup>1</sup> / <sub>4</sub> ")	31.75 mm (1 <sup>1</sup> / <sub>4</sub> ")	
Bar Stock Diameter (5C Collet)	Ø27 mm (Ø1 <sup>1</sup> / <sub>16</sub> ")	Ø27 mm (Ø1 <sup>1</sup> / <sub>16</sub> ")	Ø27 mm (Ø1 <sup>1</sup> / <sub>16</sub> ")	Ø27 mm (Ø1 <sup>1</sup> / <sub>16</sub> ")	
Distance Between Centers	457 mm	380 mm (CTL-27EVS)	No tailstock	No tailstock	
Swing Over Bed	280 mm	229 mm	330 mm	229 mm	
Swing Over Carriage	230 mm	–	–	–	
Swing Over Cross Slide	152 mm	–	–	–	
Carriage Power Feed Range (Variable)	8~178 mm/min		6~250 mm/min	–	
Cross Slide Power Feed Range (Variable)	5~102 mm/min	–	9~160 mm/min	–	
Cross Slide Travel	152 mm	95 mm	114 mm	–	
Quick Action Compound Slide Travel	2.5 mm	–	–	–	
Compound Slide Travel	76 mm	X: 114 mm Z: 140 mm	–	Optional X: 114 mm Z: 140 mm	
Coolant Pump	1/6 HP, 220V	1/8 HP, 220V	1/8 HP, 220V	Optional	
Feed Inverter	1/2 HP	–	1/2 HP	–	
Tailstock Spindle Travel	95 mm	95 mm	No tailstock	No tailstock	
Range of Threads	618e 0.05~6.55mm (3.175~500 TPI) 618EVS 0.275~2.7mm (11~108 TPI)	–	0.05~6.55 mm (3.175 ~ 500 TPI)	–	
Net Weight (Approx)	800 kg (1760 lbs.)	500 kg (1122 lbs.)	800 kg (1760 lbs.)	300 kg (660 lbs.)	
Gross Weight (Approx)	900 kg (1980 lbs.)	600 kg (1342 lbs.)	900 kg (1980 lbs.)	370 kg (820 lbs.)	
Machine Dimensions (LxWxH)	1850 x 750 x 1700 mm (73" x 30" x 67")	1750 x 730 x 1600 mm (69" x 29" x 63")	1850 x 750 x 1700 mm (73" x 30" x 67")	900 x 900 x 1400 mm (36" x 36" x 55")	

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