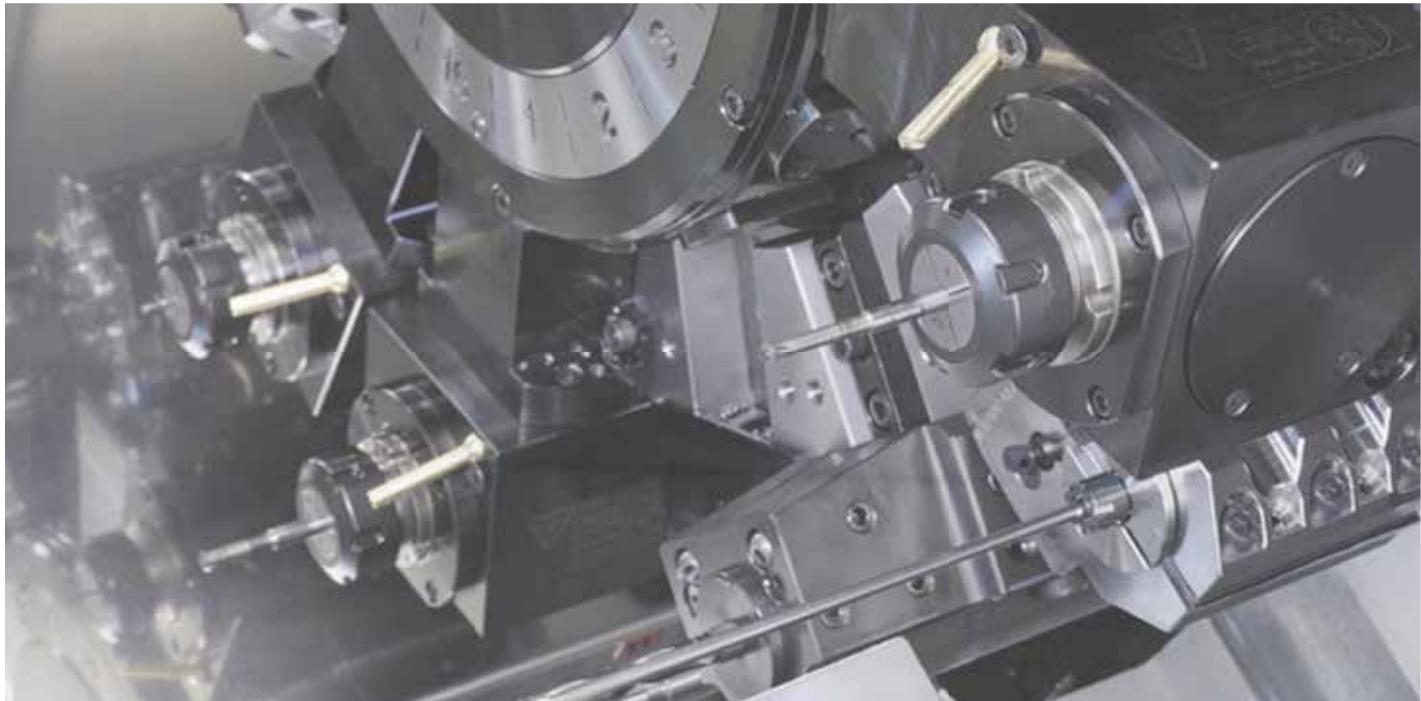


HIGH QUALITY TURNING

TORO
TD SERIES: Z800 Z1350 Models



Runs Faster,
Sleeps Less!



EUROTECH
Winning with Technology that Runs Faster, Sleeps Less!

MODEL RANGE

(15/20/25/30/35/45/55)
/- M-MS-Y-YS

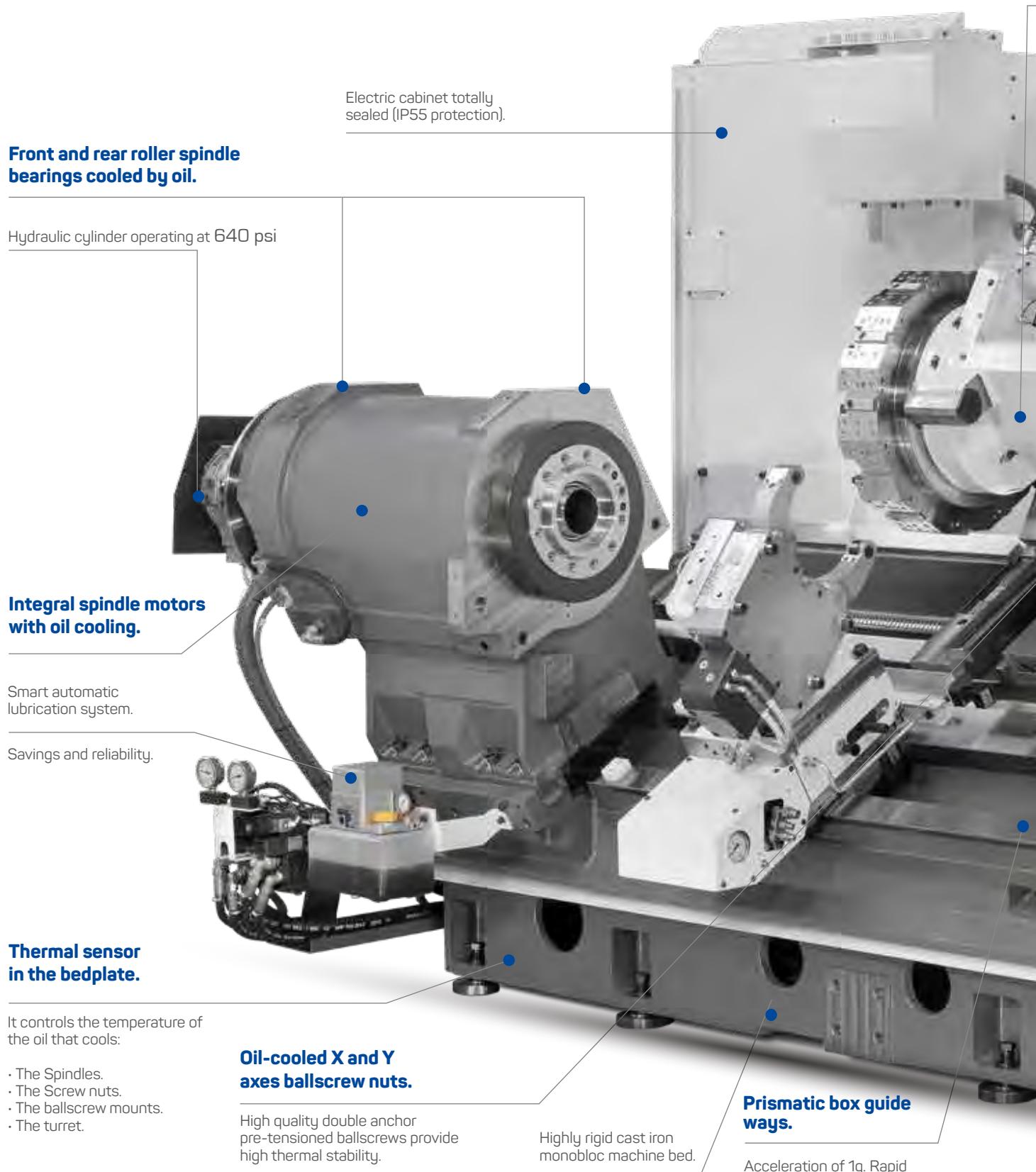
PRECISION
RELIABILITY



TORO TD SERIES



TECHNICAL CHARACTERISTICS



TORO TD SERIES

Oil cooled turret with integrated motor. Hydraulically clamped with curvic coupling. Rigid tapping.

12,000 rpm.

Ballscrew mountings are cooled by oil.

Oil-cooled X and Y axes ballscrew nuts.

Bi-directional and interpolated laser compensation in all axis, including C axis.

Live tailstock.

Waste lubrication oil piped to a separate tank preventing coolant contamination.

Removable, separate coolant tank, guarding design prevents coolant contact with the machine bed ensuring thermal stability. The coolant tank can be removed without removing the chip conveyor.

TORO TD SERIES

INTEGRATED SPINDLES

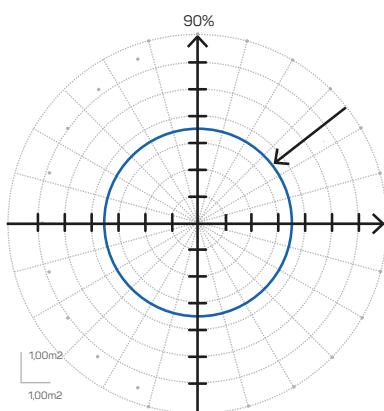
INTEGRATED SPINDLE MOTORS INCREASE ACCURACY AND REDUCE MACHINING TIMES

The spindle is driven through a motor integrated in the headstock body itself. This construction ensures an outstanding spindle robustness and vibration dampening that significantly improves surface finish and roundness.

Additionally, spindle acceleration and braking times are shortened by about 20-50% because of the reduced inertia and higher loading capacity of oil-cooled headstocks.

Special coolant collection tray made by Eurotech.

Excellent access to adjust the detectors. Easy chip removal. Protection against coolant entering into the hydraulic circuit.



ROUNDNESS

- MACHINE: TD 15
- MATERIAL: ALUMINIUM
- Ø 2.36 in
- ROUNDNESS ACHIEVED: 0.3 µm
- FILTER: 150 p/r (50%)
- MEASUREMENT RANGE: 0,10°

SURFACE FINISH

- MACHINE: TD 15
- MATERIAL: ALUMINIUM
- Ø 2.36 in
- ROUGHNESS ACHIEVED: R_{max} 0.6 µm
- FILTER: 150 p/r (50%)

No pulleys or belts

- No belt slipping.
- Better surface finish.
- Lower noise level.

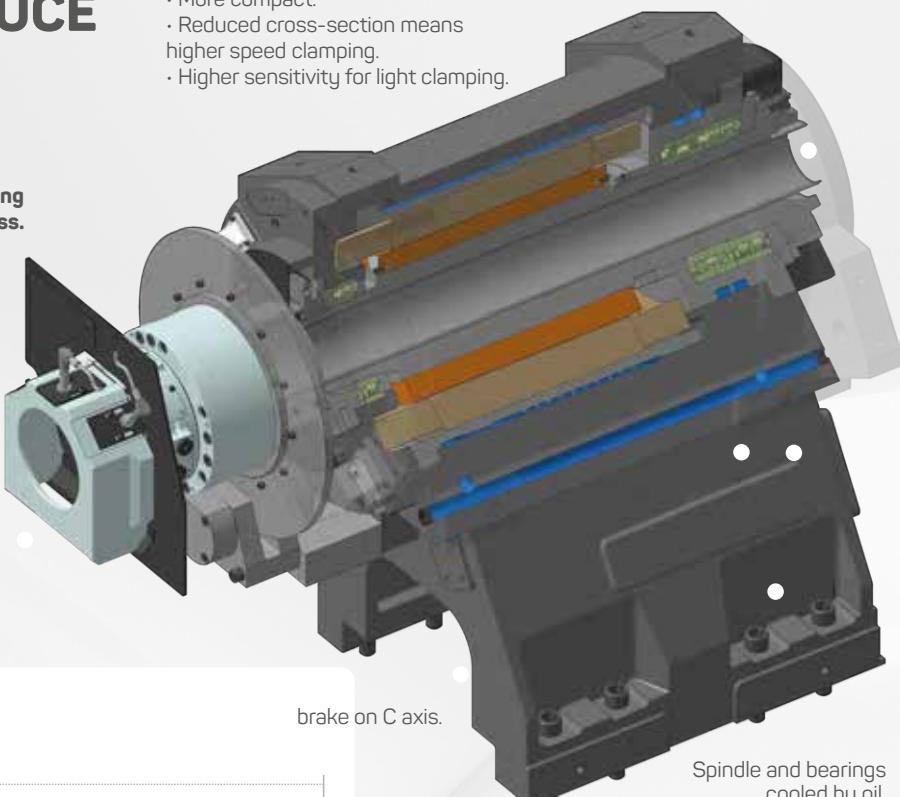
Built-in encoder. Compensation of mensuration errors by laser measurement and bidirectional and interpolated error correction.

Hydraulic cylinder at 640 psi

- More compact.
- Reduced cross-section means higher speed clamping.
- Higher sensitivity for light clamping.

Double row roller bearings can withstand substantial impacts without damage.

Greater rigidity, accuracy and durability.

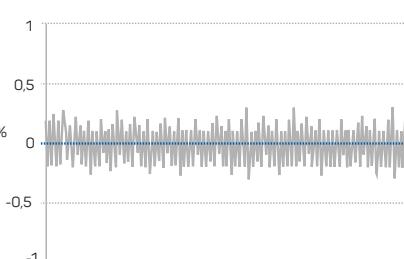


brake on C axis.

Spindle and bearings cooled by oil.

Hydraulic

High performance
integrated motor.

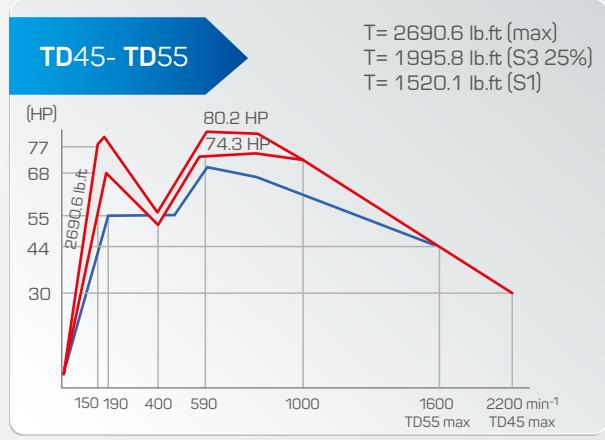
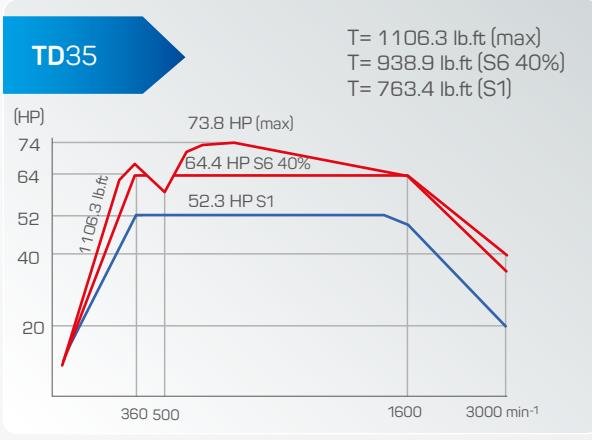
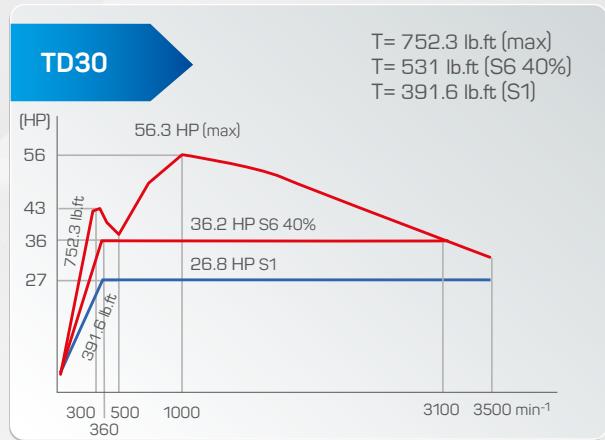
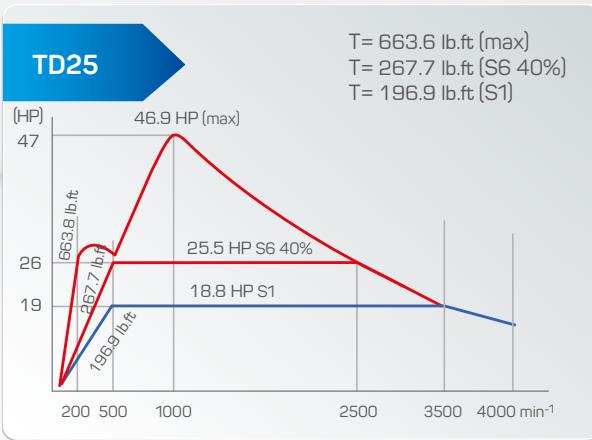
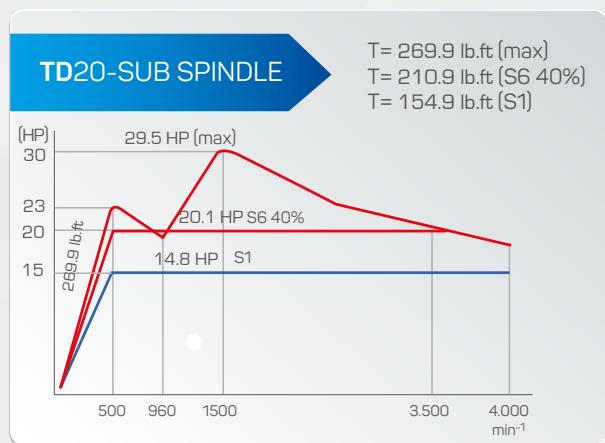
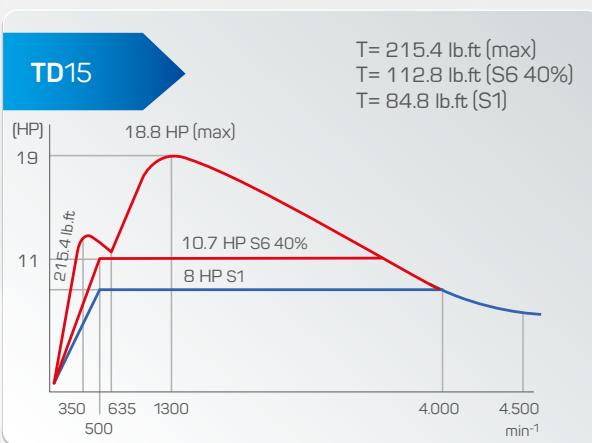


*The results obtained herein may not be attainable due to environmental and measuring differences.

TORO TD SERIES

INTEGRATED SPINDLES

POWER AND TORQUE DIAGRAM OF SPINDLES



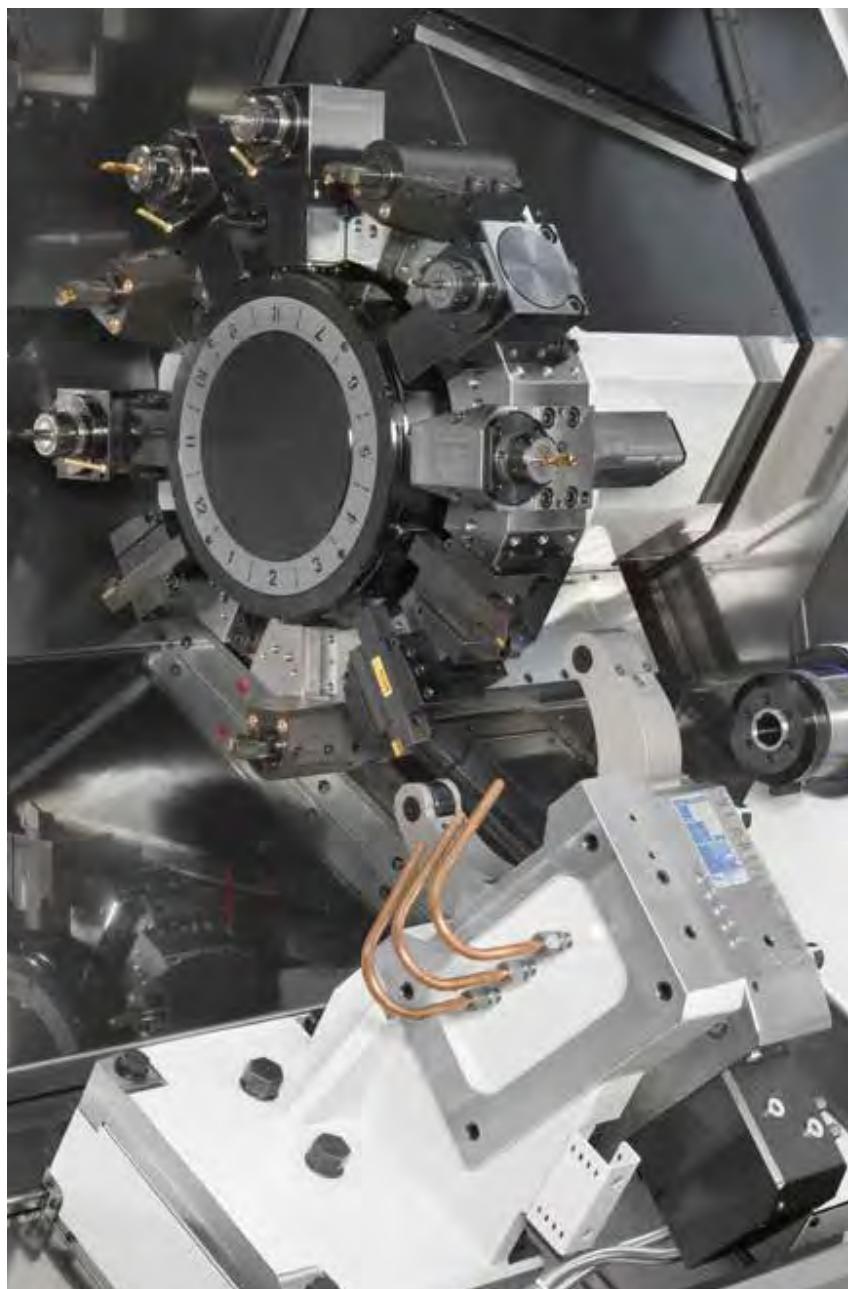
EUROTECH
Runs Faster, Sleeps Less!

TORO TD SERIES

TURRET WITH A BUILT-IN MOTOR

**AND HYDRAULIC
CLAMPING**

12.000 rpm / 77.44 lb.ft



Turret

Sturdily-built turret, incorporating a large diameter turret disk which enables the interferences between tools and chuck to be reduced.

Indexing

Bi-directional high-speed indexing is driven by a servomotor. The motor used for turret rotation is similar to motors used for axis movement, thus achieving high rotation rigidity and smoothness.

Indexing time

The indexing time is 0.2 seconds for adjacent turret positions and 0.5 seconds for 180 degrees.

Unclamping

The turret is unclamped on retract and clamped on approach, thus ensuring an effective tool changing time of 0.2 s.

Clamping

The clamping is done by means of a hydraulic system. The locking rings are 8.66 in diameter and are a curvic coupling.

Transmission

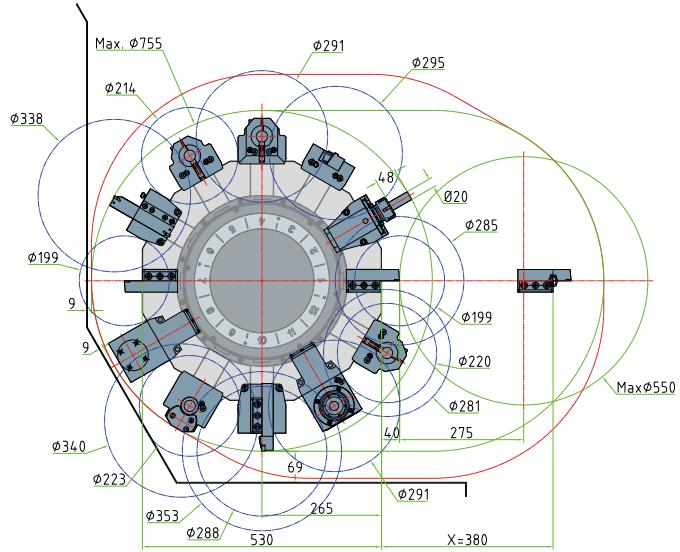
The transmission of driven tools is fitted with Gleason type conical spiral gears, hardened and ground giving high accuracy when rigid tapping.

TORO TD SERIES

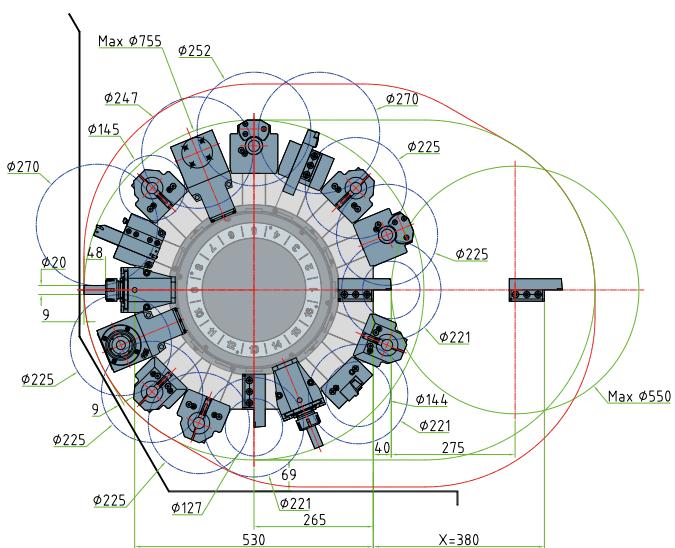
TURRET WITH A BUILT-IN MOTOR

Power and torque diagram of driven tool motor.

Interference diagram of driven tool motor. Turret with 12 positions.

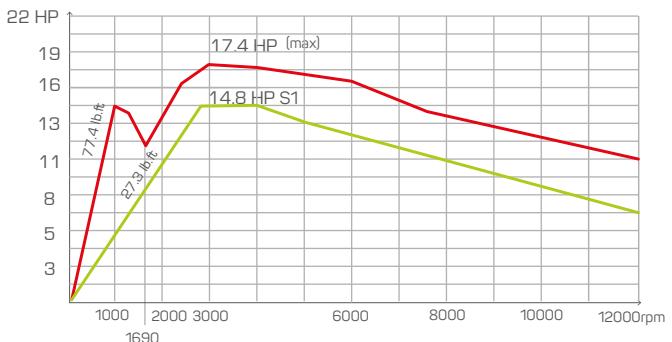


Interference diagram of driven tool motor. Turret with 16 positions.

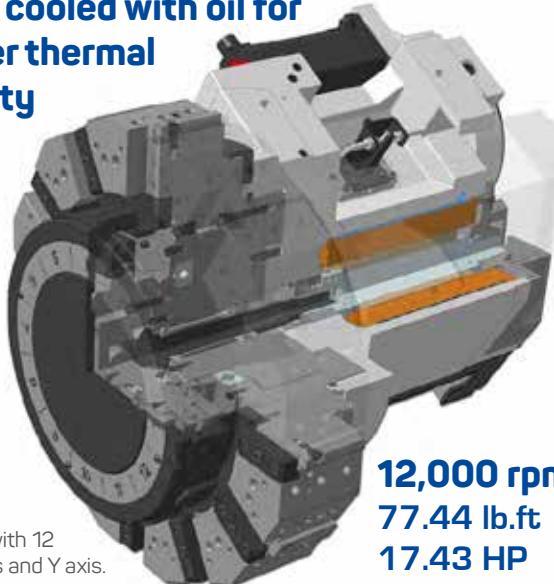


12.000 rpm 77.44 lb.ft

Max.= 77.44 lb.ft / 17.43 HP
S1 = 27.3 lb.ft / 14.8 HP

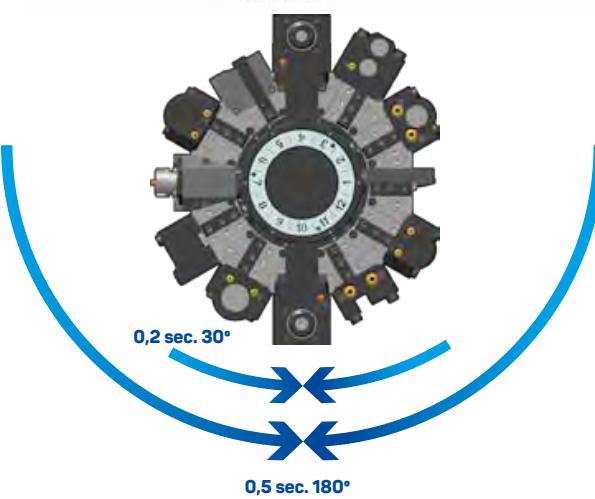


Turret cooled with oil for greater thermal stability



**12,000 rpm
77.44 lb.ft
17.43 HP**

*Turret with 12 positions and Y axis.



Tool Turret

The robust turret disk does not lift while indexing. The turret is unclamped on retract and clamped on approach, thus ensuring an effective tool changing time of 0.2 s.

16 positions disc. 0.2 seconds 22.5°

TORO TD SERIES TOOL HOLDERS

Boring & drilling holders Ø1.57 in



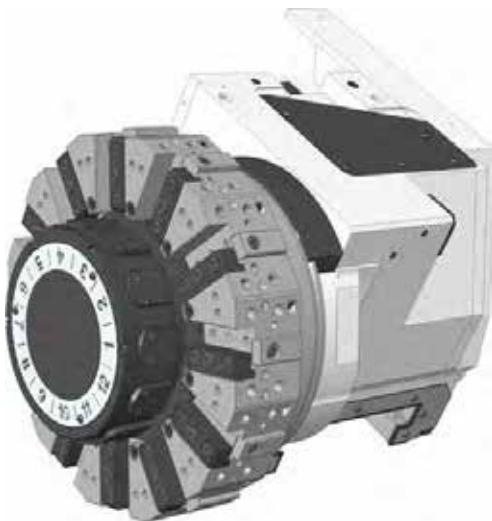
TD/10300/40
(Ø1.57 in)



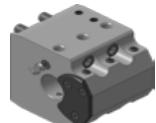
TD/10300/41
(Ø1.57 in)



TL20/10000/14 (Ø.31 in)
TL20/10000/15 (Ø.39 in)
TL20/10000/16 (Ø.47 in)
TD/10300/16 (Ø.63 in)
TD/10300/20 (Ø.79 in)
TD/10300/25 (Ø.98 in)
TD/10300/32 (Ø1.26 in)



Double boring holders Ø1.26 in



TD/10300/43
(Ø1.26 in)



TD/10300/42
(Ø1.26 in)



TL20/10000/27 (Ø.31 in)
TL20/10000/28 (Ø.39 in)
TL20/10000/29 (Ø.47 in)
TL20/10000/30 (Ø.63 in)
TL20/10000/31 (Ø.79 in)
TL20/10000/43 (Ø.98 in)

Boring holders Ø2.36 in



TD/10300/60
(Ø2.36 in)



TD/10300/50
(Ø1.97 in)

Boring holders Ø80



TD/10300/80
(Ø3.15 in)

Turning holders 32



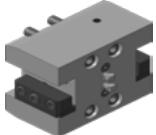
TD/10300/59

*Not suitable for 16 station turret

Turning holders □ 25



TD/10300/45



TD/10300/46



TD/10300/48



TD/10300/47



TD/10300/49



TD/10300/44

Live tool holders □



TL20/10400/01B
Max: 6000 rpm



TL20/10400/05B
Max: 6000 rpm



TL20/10400/06
Max: 12000 rpm



TL20/10400/07B
Max: 6000 rpm



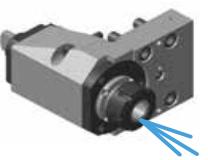
TL20/10400/08
Max: 12000 rpm



TL20/10400/04A
Max: 8000 rpm



TL20/10400/03A
Max: 8000 rpm



TL20/10400/09
Max: 12000 rpm



TL20/10400/10
Max: 4000 rpm

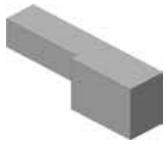
Others



TL20/10000/03



TL20/10000/36
(Ø.39 in)



TL20/10000/37



TL15/10000/05



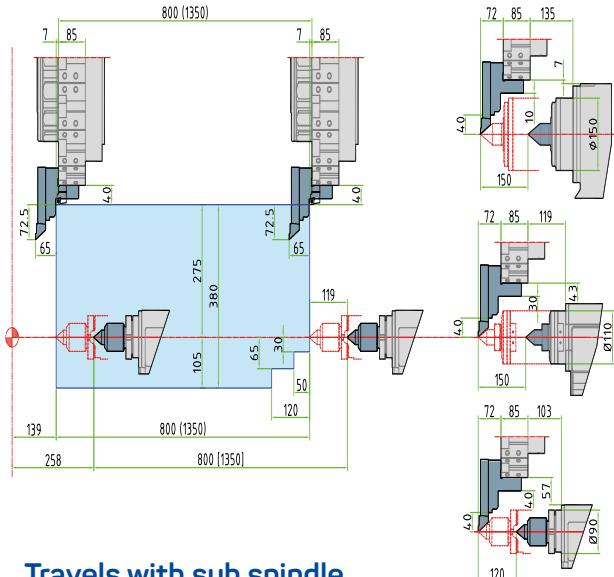
TL20/10051

TL20/10054

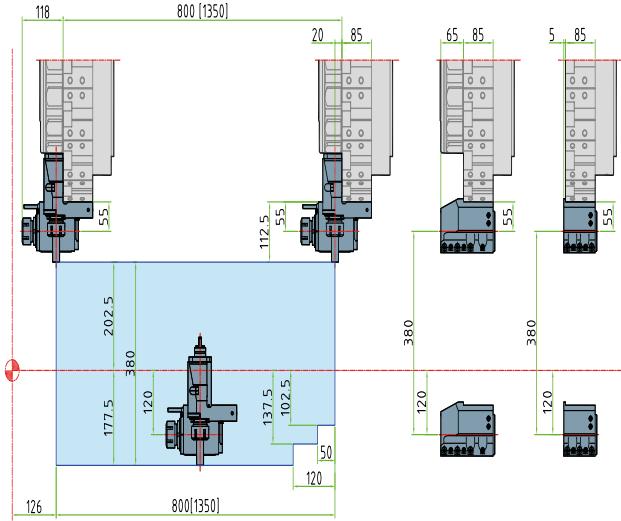
TORO TD SERIES

TRAVELS

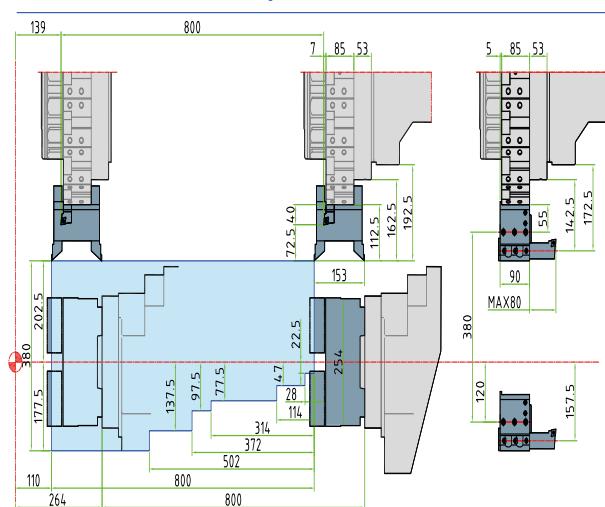
Travels with tailstock



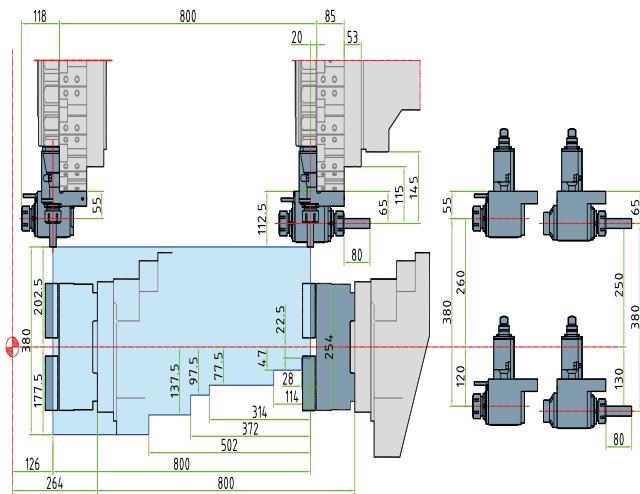
Travels with tailstock and live tooling



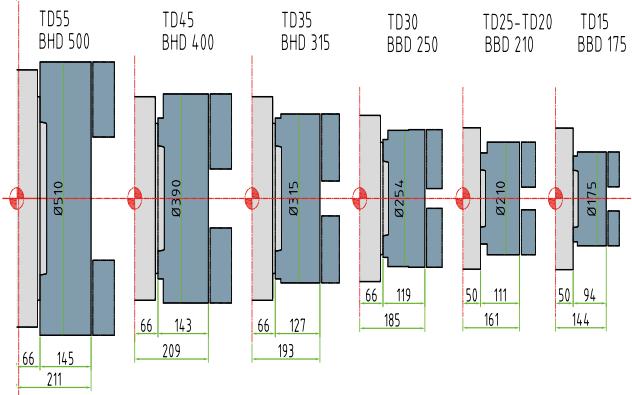
Travels with sub spindle



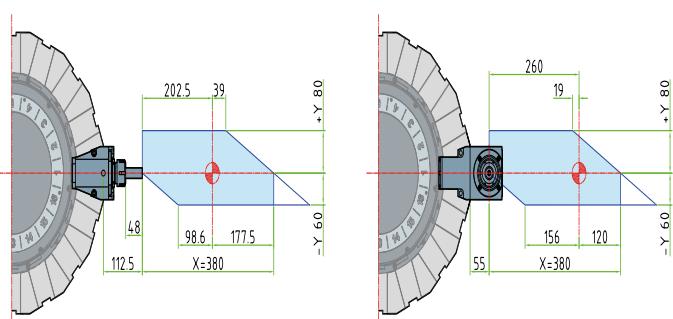
Travels with sub spindle and live tooling



Standard chucks dimensions



Y axis travel



EUROTECH
Runs Faster, Sleeps Less!

ROBOT GL20 II

AUTOMATE SHORT AND LONG BATCHES

A range of gripper heads with 2 x 22 lb capacity to suit your needs (GL20 II)

Very easy to use



Easy to use and to program. CMZ have developed a conversational programming system that makes it very easy to set and use the GL20 II and GL6 Gantry robots.

- 1_3-jaw servo gripper with 2 x 180° indexing.
- 2_2-jaw servo gripper with 2 x 180° indexing.
- 3_3-jaw pneumatic gripper with 2 x 90° indexing.
- 4_Pneumatic gripper for shafts with 2 x 90° indexing.
- 5_Servo gripper for shafts with 2 x 90° indexing.



Workstocker WS-280x400x14 with 14 pallets.



A wide range of workstockers with large capacity permits long periods of unmanned operation.

This workstocker can accommodate components to a maximum diameter of 11 in and maximum stacked height of 19.69 in (maximum travel of 15.75 in). The 14 rotary pallets each have a carrying capacity of 165.3 lb maximum.

TORO TD SERIES



Workstocker WS-700 for shafts:

Workstocker to stock shafts from 3.15 in to 27.6 in long and from 0.39 in to 3.15 in diameter. (Contact Eurotech for other sizes).



Z axis speed
(Longitudinal): 7087 ipm

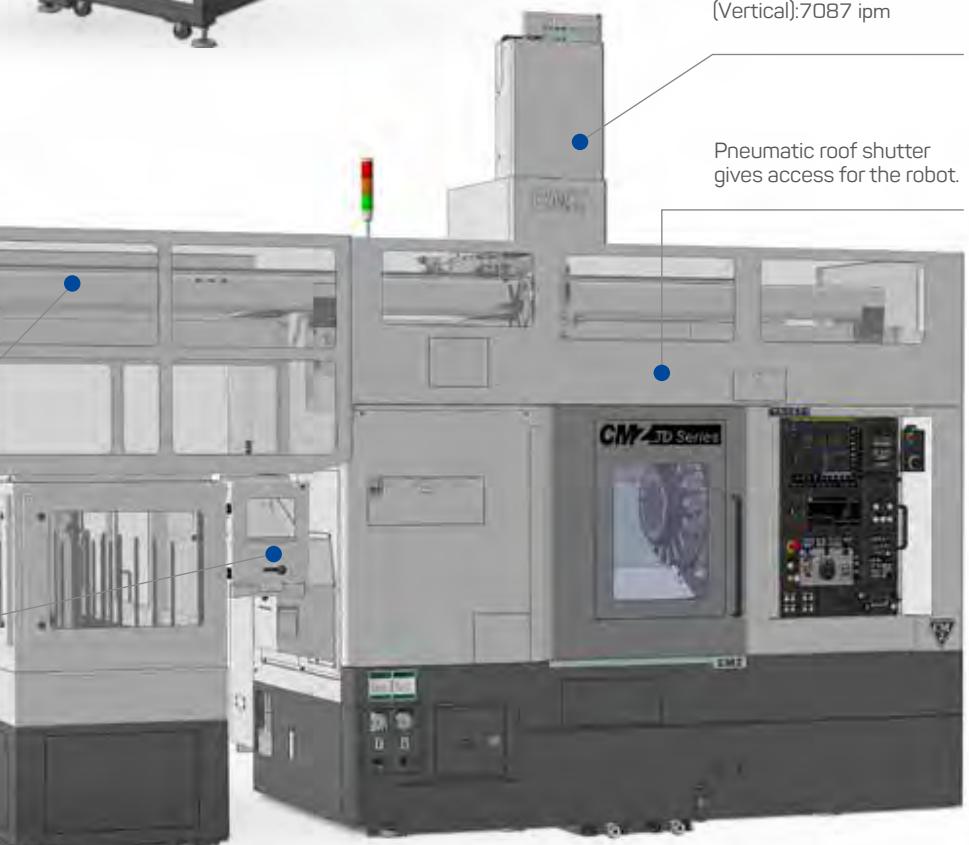
Y axis speed
(Transverse): 4724 ipm

X axis speed
(Vertical): 7087 ipm

CNC controlled axes.
• Rack and pinion drive.
• Automatic lubrication controlled by the CNC.

Checking station.

WS280.





Nationwide Service

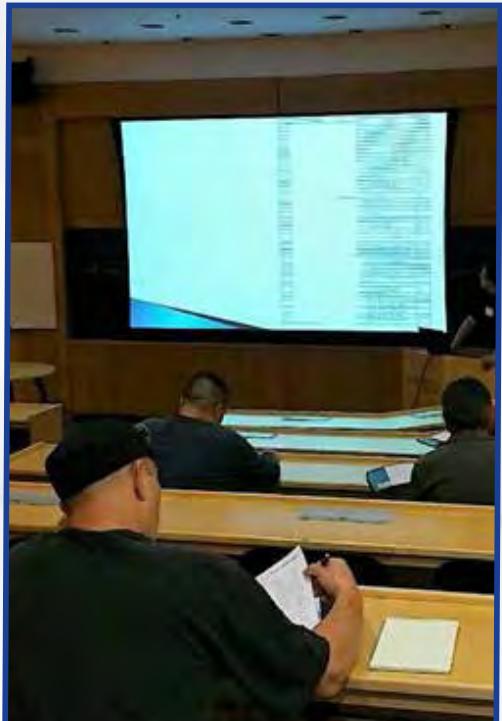
Eurotech has nationwide distributors with over 100 service technicians. Eurotech's USA headquarters trains and supports our distributors and customers.

"Our relationship with the service department is bar none!"

- Les Richards, Custom Mold

"You can't go wrong with the Eurotech equipment and the customer care they provide after the purchase."

- Geoff Giner, Model Screw Products



Nationwide Engineering and Training Classes

Eurotech's highly-advanced engineers have established a value that delivers more to our customers' needs than anything else in the industry - by listening to our customers' needs. Some key benefits Eurotech engineers deliver are:

- Factory Certified Training
- Proven to Increase ROI and Cycle Time
- New & Unique Ideas for Parts Processing

Free Lifetime Training! Knowledge is the power of productivity!

For 25 years we have offered FREE lifetime training to our valued customers as well as free engineering phone support. We have found this to be an important factor in helping our customers become profitable. Thousands of CNC machinists have trained at our FREE Eurotech College.

"Class was 5 Stars. The instruction was great as was the training binder. Thank you for the awesome two days of training."

- Dan Gibbons, J.C. Gibbons Mfg. Inc.



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RUNS FASTER, SLEEPS LESS!

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