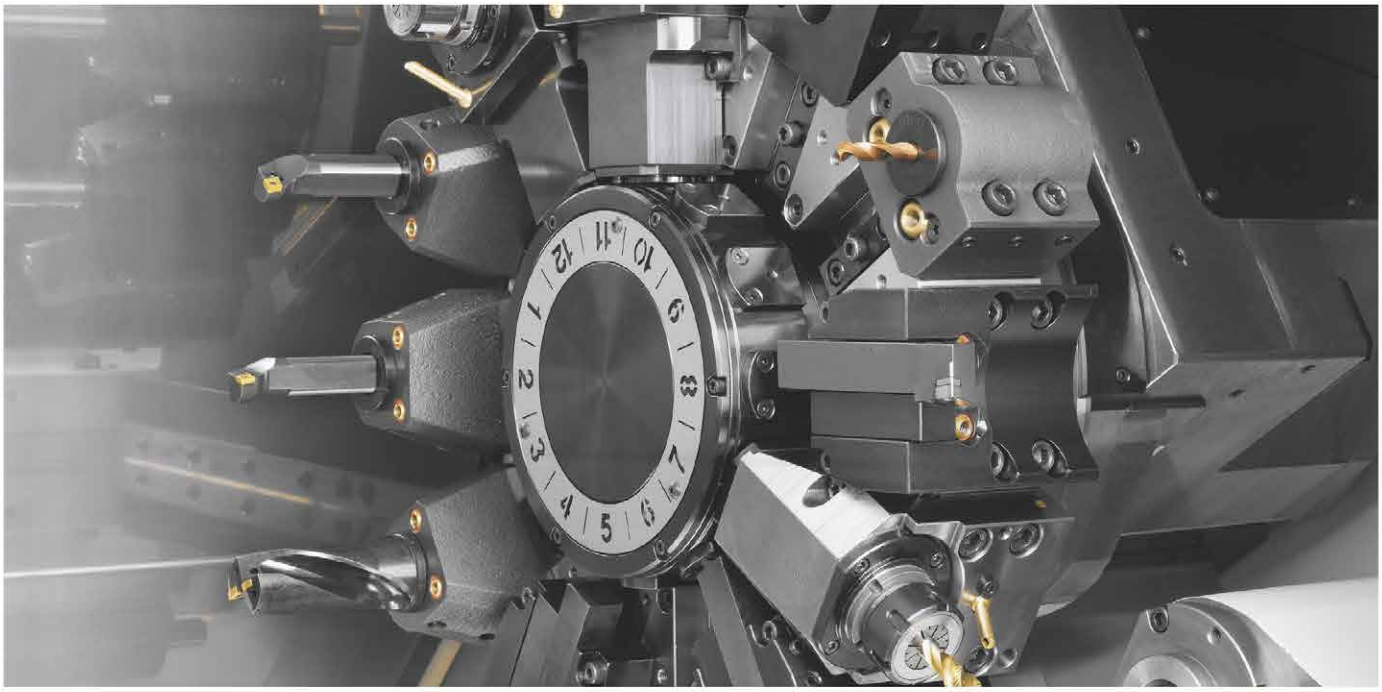
SINGLE TURRET HEAVY DUTY TURNING

FORZA

TA SERIES: Z400 Z640 Z1100 Models



Runs Faster,
Sleeps Less!

EUROTECH
Winning with Technology that Runs Faster, Sleeps Less!

FORZA TA SERIES

MODEL RANGE

2 to 5 Axes

S - Sub-spindle
M - Milling
Y - Axis

4 - Different Main Spindles Chuck / Bar

- 15 - 8" / 52 mm
- 20 - 10" / 66 mm
- 25 - 10" / 66 mm (high torque)
- 30 - 12" / 81 mm

3 - Different Machining Lengths

- 400 mm
- 640 mm
- 1100 mm

PRECISION
RELIABILITY

TECHNICAL CHARACTERISTICS

FORZA TA SERIES

Prismatic box guide ways.

Acceleration of 1g.
Rapid traverse rate of 1181 ipm

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

12,000 rpm.

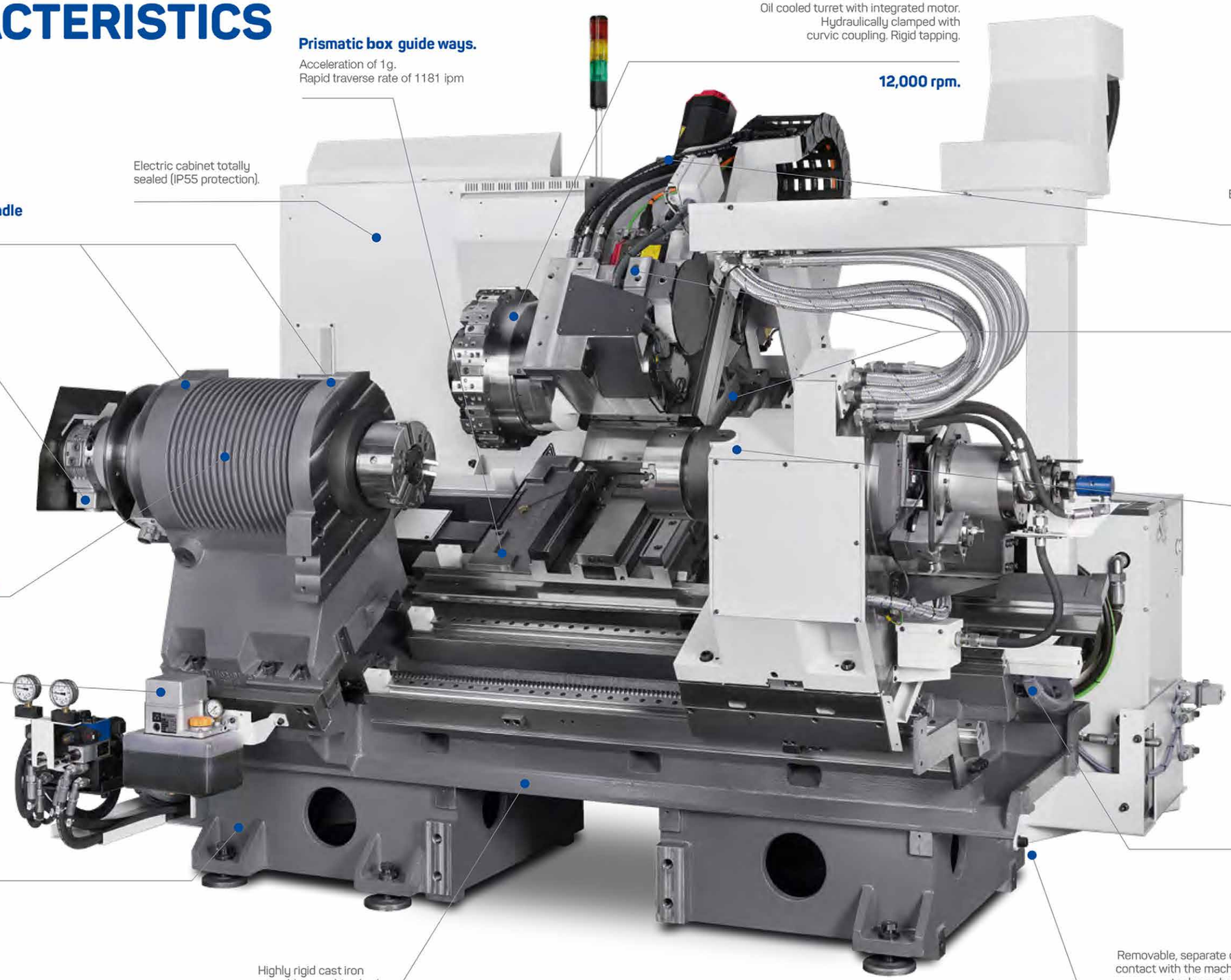
Electric cabinet totally sealed (IP55 protection).

Front and rear roller spindle bearings cooled by oil.

Hydraulic cylinder operating at 640 psi

Ballscrew mountings are cooled by oil.

Laser compensation in all axes including the C axis.



Integral spindle motors with oil cooling.

Integral spindle motors with oil cooling.

Smart automatic lubrication system.

Savings and reliability.

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

Thermal sensor in the bedplate.

It controls the temperature of the oil that cools:

- The Spindles.
- The ballscrew mounts.
- The turret.

Highly rigid cast iron monobloc machine bed.

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.

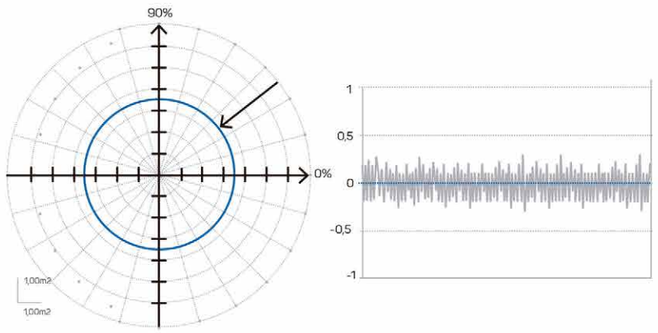
EUROTECH
Runs Faster, Sleeps Less!

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.



ROUNDNESS	SURFACE FINISH
· MACHINE: TA 15	· MACHINE: TA 15
· MATERIAL: ALUMINIUM	· MATERIAL: ALUMINIUM
· Ø 2.36 in.	· Ø 2.36 in.
· ROUNDNESS ACHIEVED: 0,3 µm	· ROUGHNESS ACHIEVED: Rmax ϕ,6 µm
· FILTER: 150 p/r (50%)	· FILTER: 150 p/r (50%)
· MEASUREMENT RANGE: 0,10°	

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

FORZA TA SERIES

No pulleys or belts

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

Hydraulic cylinder at 640 psi

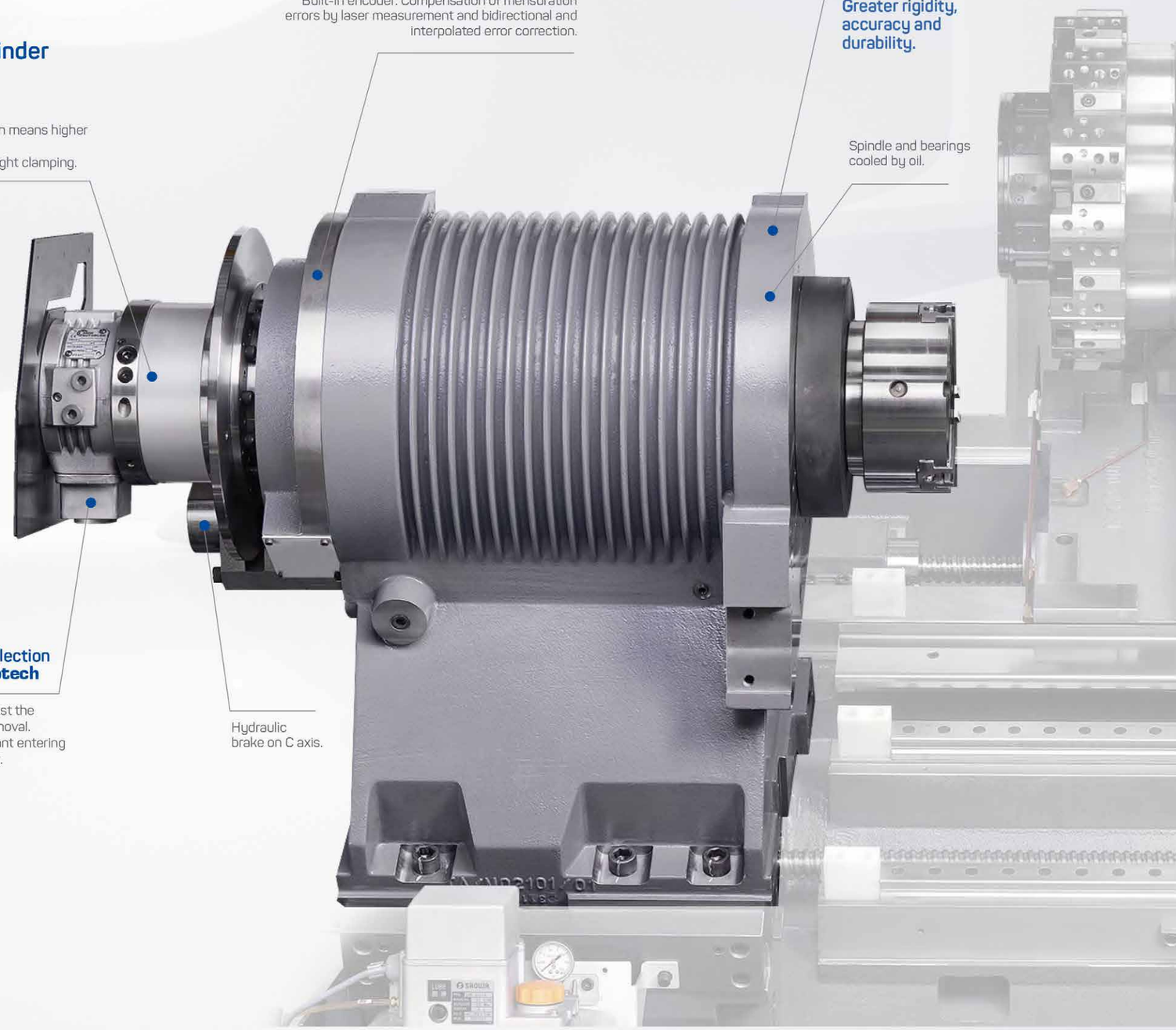
- More compact.
- Reduced cross-section means higher speed clamping.
- Higher sensitivity for light clamping.

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

Double row roller bearings can withstand substantial impacts without damage.

Greater rigidity, accuracy and durability.

Spindle and bearings cooled by oil.



Special coolant collection tray made by Eurotech

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

Hydraulic brake on C axis.

CNC FANUC SERIES 30

WITH iHMI INTERFACE AND NEW HARDWARE STEP 2

Visualize your CNC in your PC

1 Use **VNC Viewer** software to see the CNC screen of your lathe in any computer sharing the screen with your operator and being able to get support online in a very simple and efficient way.

Visualize your PC in the lathe

2 The operator can access to a desktop screen through the CNC. With this functionality software like ERP, Excel, email, Autocad, CAD/CAM... can be used from the lathe.

15" Touch screen

Adjustable height 100 mm

2 GB Part program memory

Data Transfer

- Ethernet
- USB
- PCMCIA

Ready for Industry 4.0

Conversational programming

The CNC is equiped with the **New Manual Guide i** conversational programming system. It allows programming and simulating the programs in 3D.

Maintenance manager

The Maintenance manager will guide you to perform the recommended maintenance tasks. The dates when the maintenance was performed will be saved automatically when *"Maint. complete"* is pushed.

Tool life (option)

The CNC allows to define groups of sister tooling. When a tool finishes its life due to the number of times being called or its cutting time, it is automatically substituted by its sister tool.

Tool catalogue

The control has a tool catalogue from which we can select the tools we want to use in our machining process. This permits to directly get the geometry of the tool for simulation purposes.

Variable speed function (Anti vibration)

With a simple setup to define the period and amplitude of a sinusoidal curve to modify the spindle speed, very good results are obtained in reducing chatter vibration. This function is available for turning with or without tailstock.

Manuals

Check any machine manual instantly in the CNC. The files are indexed so that you can access the information you require directly from the table of contents of the manual.

Easy diagnosis

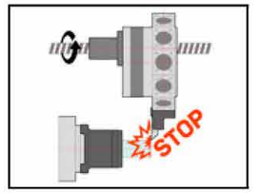
Easy detection of machine faults through the graphical interface that shows the signals that control the different devices in the machine. Status of the dectectors, signals to activate the hydraulic maneuvers, motor temperature and pressure measurements are easily monitored live.

Tool monitoring (option)

This fuctions memorises the power consumption of each tool. Once the values are obtained it monitors the power consumption of each tool to detect tool wear or breakage. This reduces the manual handling in an unmanned process.

Execution of program with the MPG handwheel

This function allows checking the programs executing them back and forth with the MPG handwheel.



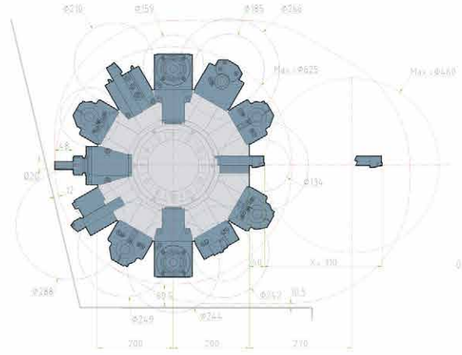
Electronic detection of collisions (airbag).

The CNC detects impacts through monitorisation of the motors' forces and following errors. With an overload the axes and spindles are stopped to prevent further damages.

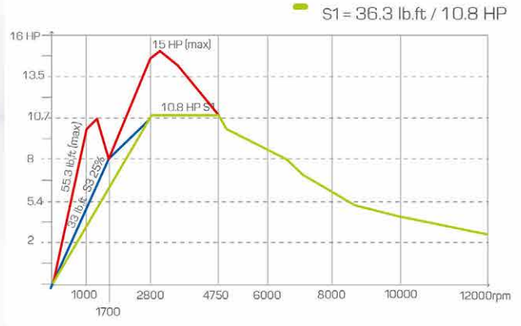
FORZA TA SERIES

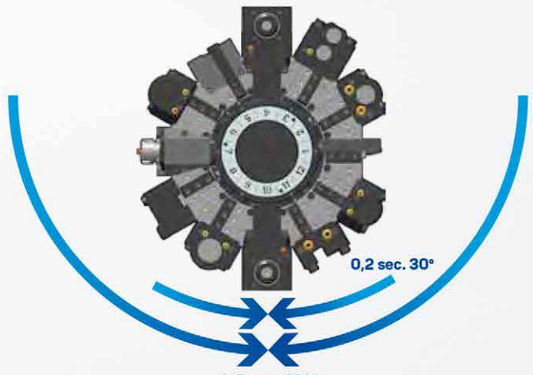
TURRET WITH A BUILT-IN MOTOR

Interference diagram of driven tool motor. 12,000 rpm /55.3 lb.ft



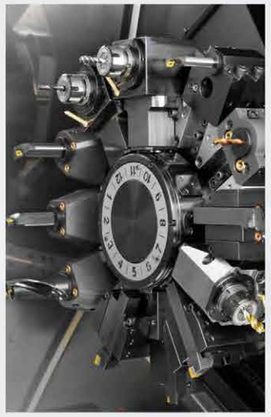
Power and torque diagram of driven tool motor. 12,000 rpm /55.3 lb.ft





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. - 12 positions disc. 0.2 seconds 30°

AND HYDRAULIC CLAMPING



12,000 rpm / 55.3 lb.ft. torque

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.

Clamping

The clamping is done by means of a hydraulic system. The locking rings are 8.6 in diameter and are a curvic coupling.

Transmission

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

Unclamping

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

Turret cooled with oil for greater thermal stability.

* Turret with 15 positions and Y axis.

12,000 rpm/min
55.3 lb.ft torque
15 HP

FORZA TA SERIES

TOOL HOLDERS

Boring & drilling holders Ø40

TD/10300/40
(Ø1.57 in)

TD/10300/41
(Ø1.57 in)

TL20/10000/14 (Ø0.31 in)
TL20/10000/15 (Ø0.39 in)
TL20/10000/16 (Ø0.47 in)
TD/10300/16 (Ø0.63 in)
TD/10300/20 (Ø0.79 in)
TD/10300/25 (Ø0.98 in)
TD/10300/32 (Ø1.26 in)

Double boring holders Ø32

TD/10300/43
(Ø1.26 in)

TD/10300/42
(Ø1.26 in)

TL20/10000/27 (Ø0.31 in)
TL20/10000/28 (Ø0.39 in)
TL20/10000/29 (Ø0.47 in)
TL20/10000/30 (Ø0.63 in)
TL20/10000/31 (Ø0.79 in)
TL20/10000/43 (Ø0.98 in)

Boring holders Ø60

TD/10300/60
(Ø2.36 in)

TD/10300/50
(Ø1.97 in)

Boring holders Ø80

TD/10300/80
(Ø3.15 in
*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

Turning holders □32

TD/10300/59

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

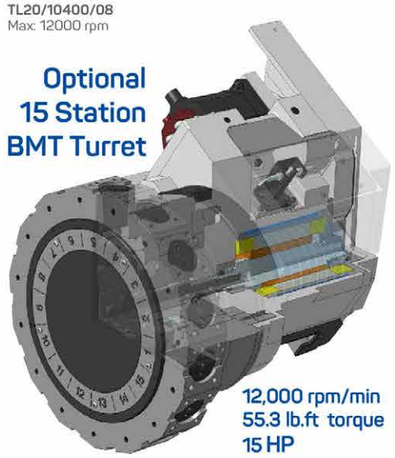
TL20/10000/36
(Ø10mm)

TL20/10000/37

TL15/10000/05

TL20/10051
TL20/10054

Optional 15 Station BMT Turret

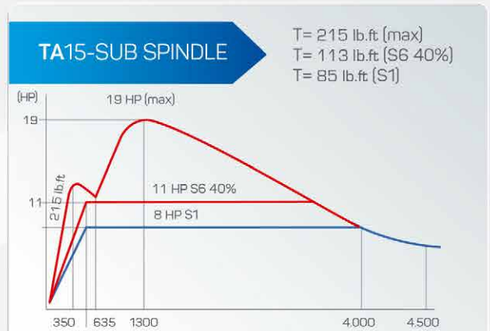


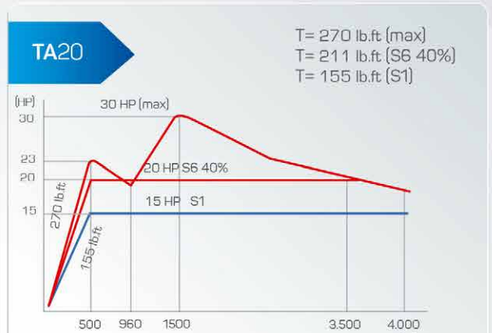
12,000 rpm/min
55.3 lb.ft torque
15 HP

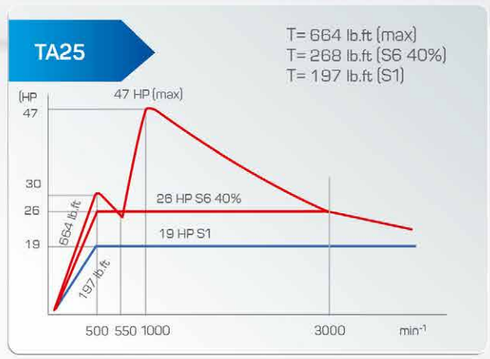
FORZA TA SERIES

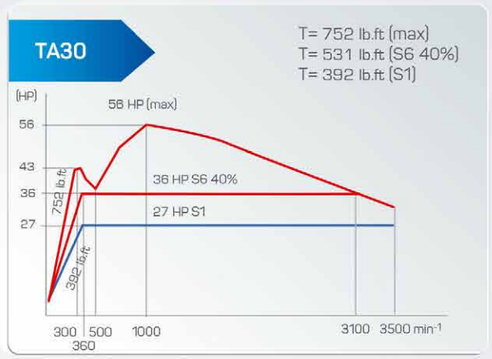
INTEGRATED SPINDLES

POWER AND TORQUE DIAGRAM OF SPINDLES









EUROTECH
Runs Faster, Sleeps Less!

ROBOT GL20 II

AUTOMATE SHORT AND LONG BATCHES

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

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.

Very easy to use

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

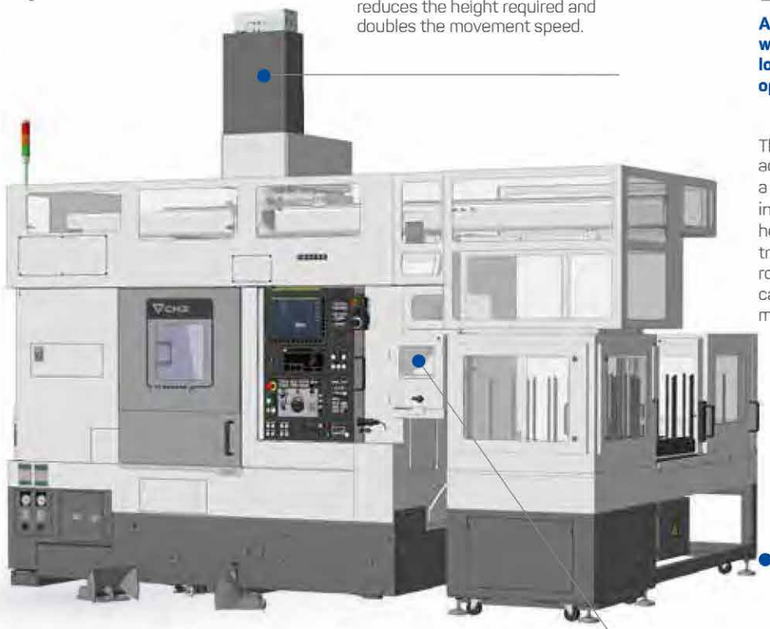
Workstocker WS-280x400x14 with 14 pallets.

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

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).

The Vertical movement of the wrist reduces the height required and doubles the movement speed.



This workstocker can accommodate components to a maximum diameter of 11.2 in and maximum stacked height of 19.7 in (maximum travel of 15.8 in). The 14 rotary pallets each have a carrying capacity of 165 lb maximum.

WS280

Checking station.

Z axis speed
(Longitudinal): 7086 ipm

Y axis speed
(Transverse): 4724 ipm

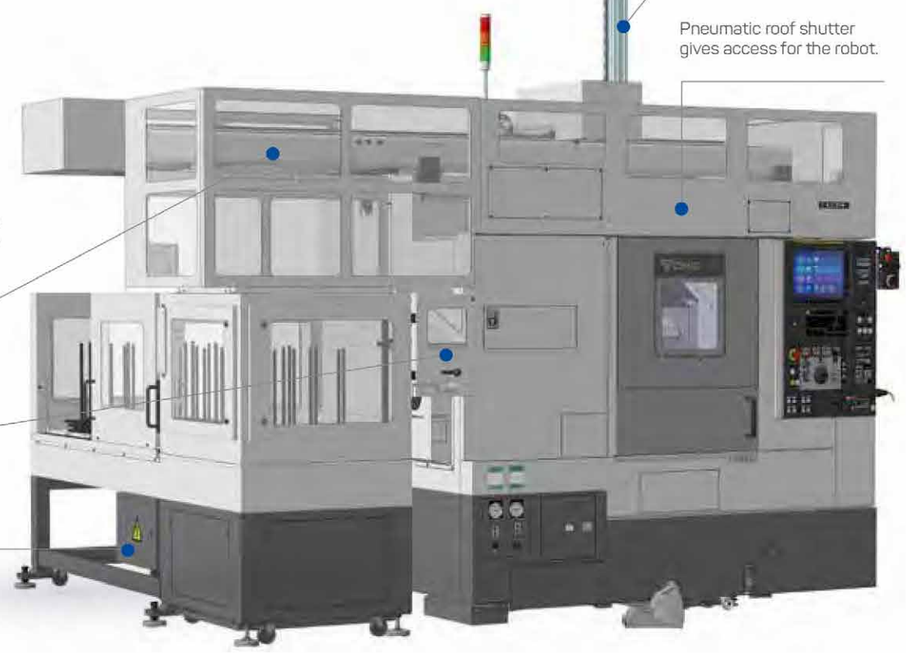
X axis speed
(Vertical): 7806 ipm

Pneumatic roof shutter gives access for the robot.

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

Checking station.

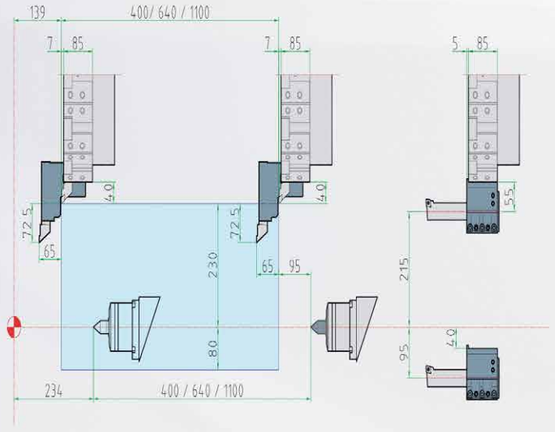
WS280



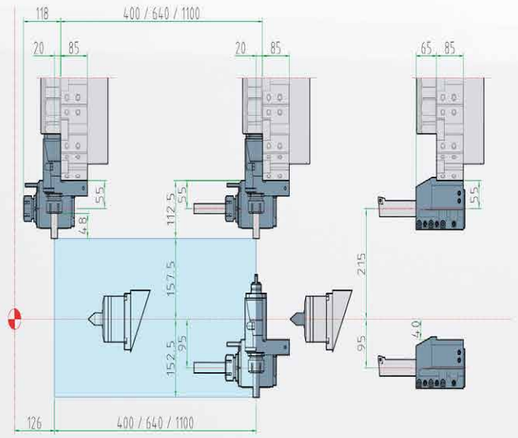
FORZA TA SERIES

TRAVELS

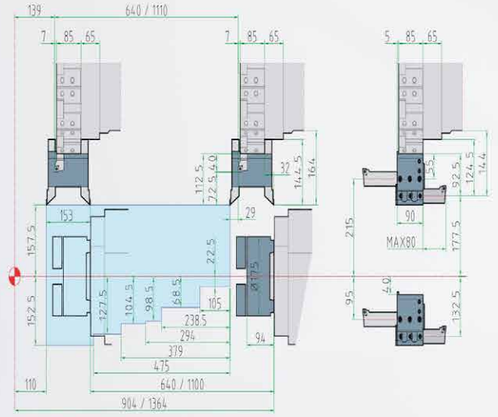
Travels with tailstock



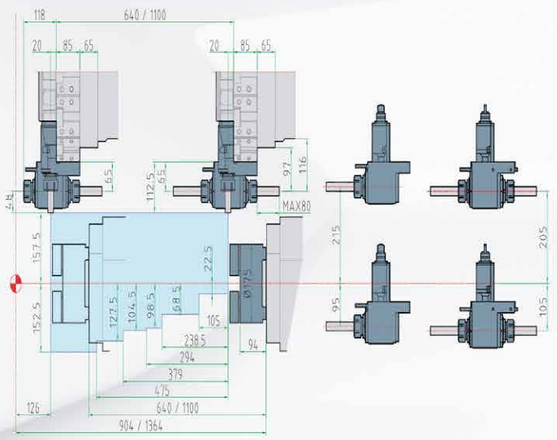
Travels with tailstock and live tooling



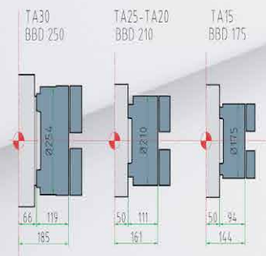
Travels with sub spindle



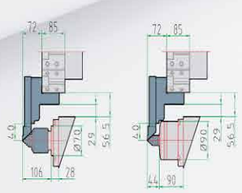
Travels with sub spindle and live tooling



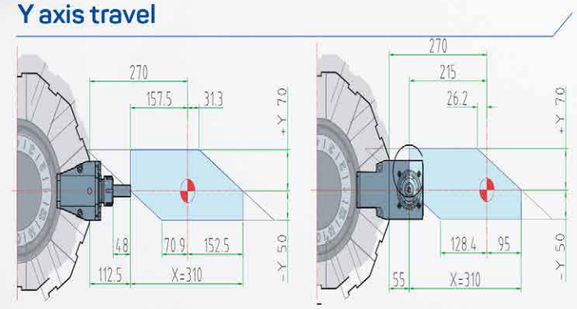
Standard chucks dimensions



Interference with tailstock centre point



Y axis travel



FORZA TA SERIES

TECHNICAL SPECIFICATIONS

	TECHNICAL DATA		TA15		TA20		TA25		TA30	
			TA15M, TA15Y, TA15S, TA15MS, TA15YS		TA20, TA20M, TA20Y, TA20S, TA20MS, TA20YS		TA25, TA25M, TA25Y, TA25S, TA25MS, TA25YS		TA30, TA30M TA30Y, TA30S TA30MS, TA30YS	
GENERAL DATA	Maximum diam. swing over bed (inch)		29.92		29.92		29.92		29.92	
	Maximum diam. swing over slides (inch)		23.62		23.62		23.62		23.62	
	Maximum turning diameter (inch)		18.11		18.11		18.11		18.11	
	Distance between spindle and tailstock center (inch)	Z400	19.29	-	18.62	-	18.62	-	17.68	-
		Z640	28.74	-	28.07	-	28.07	-	27.12	-
		Z1100	46.85	-	46.18	-	46.18	-	45.24	-
	Distance between center of spindles (inch)	Z640	-	26.22	-	25.55	-	25.55	-	24.61
		Z1100	-	44.33	-	42.66	-	43.66	-	42.72
	X-axis travel (inch)		12.2		12.2		12.2		12.2	
	Z-axis travel (inch)	Z400	15.75		15.75		15.75		15.75	
		Z640	25.2		25.2		25.2		25.2	
		Z1100	43.31		43.31		43.31		43.31	
	Y-axis travel (inch)		- - +2.76 -1.97	- - +2.76 -1.97	- - +2.76 -1.97	- - +2.76 -1.97	- - +2.76 -1.97	- - +2.76 -1.97	- - +2.76 -1.97	- - +2.76 -1.97
	B-axis travel (inch)	Z400	15.75	-	15.75	-	15.75	-	15.75	-
		Z640	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
		Z1100	43.31	43.31	43.31	43.31	43.31	43.31	43.31	43.31
	Fast feedrate X (m/min)		30		30		30		30	
	Fast feedrate Z (m/min)		30		30		30		30	
	Fast feedrate Y (m/min)		- - 15 - -		- - 15 - -		- - 15 - -		- - 15 - -	
	Fast feedrate B (m/min)		11	30	11	30	11	30	11	30
	Axis acceleration		1g=9,8 m/s2		1g=9,8 m/s2		1g=9,8 m/s2		1g=9,8 m/s2	
SPINDLE	Maximum speed (rpm)		4500		4000		4000		3500	
	Bearing outside diameter (inch)		5.9		6.69		6.69		7.87	
	Bearing inside diameter (inch)		3.94		4.33		4.33		5.12	
	Spindle nose		ASA 6''A2		ASA 6''A2		ASA 6''A2		ASA 8''A2	
	Spindle inside diameter (inch)		2.4		2.87		2.87		3.58	
	Maximum bar diameter (inch)		2.05		2.6		2.6		3.23	
	Chuck diameter (inch)		6.89/8.27		8.27		9.84/8.27		10/12.4	
	Chuck bore (inch)		2.2/2.05		2.6		2.6		3.23	
	Spindle power (HP (max./S6 40%)		18.8/10.7		29.5/20.1		46.9/25.5		56.3/36.2	
	Turning torque (lb.ft)		215.4 (max) 112.8 (S6 40%)		269.9 (max) 210.9 (S6 40%)		663.8 (max) 267.7 (S6 40%)		752.3 (max) 531 (S6 40%)	
TAILSTOCK	Morse cone	Ø90x120 live center	CM5	-	CM5	-	CM5	-	CM5	-
		Ø90x120 rotary quill	CM3	-	CM3	-	CM3	-	CM3	-
	Tailstock travel (inch)	Z400	15.75	-	15.75	-	15.75	-	15.75	-
		Z640	25.2	-	25.2	-	25.2	-	25.2	-
		Z1100	43.31	-	43.31	-	43.31	-	43.31	-
	Max. force (lbf)		930	-	980	-	980	-	1350	-

	TECHNICAL DATA		TA15		TA20		TA25		TA30	
			TA15M, TA15Y, TA15S, TA15MS, TA15YS		TA20, TA20M, TA20Y, TA20S, TA20MS, TA20YS		TA20, TA20M, TA20Y, TA20S, TA20MS, TA20YS		TA30, TA30M TA30Y, TA30S TA30MS, TA30YS	
TURRET	Number of positions		12		12		12		12	
	Section of tools (mm)		25x25 (Ø50)		25x25 (Ø50)		25x25 (Ø50)		25x25 (Ø50)	
	Changing time		30° 0,2s-180° 0,5s		30° 0,2s-180° 0,5s		30° 0,2s-180° 0,5s		30° 0,2s-180° 0,5s	
	Interlocking force at 45 bar (kgf)		5090		5090		5090		5090	
DRIVEN TOOLS	Number of driven tools		- 12	- 12	- 12	- 12	- 12	- 12	- 12	- 12
	Turning speed (rpm)		- 12000	- 12000	- 12000	- 12000	- 12000	- 12000	- 12000	- 12000
	Power (HP) (max./S1)		- 15.2/10.9	- 15.2/10.9	- 15.2/10.9	- 15.2/10.9	- 15.2/10.9	- 15.2/10.9	- 15.2/10.9	- 15.2/10.9
	Maximum torque (lb.ft		- 55.3	- 55.3	- 55.3	- 55.3	- 55.3	- 55.3	- 55.3	- 55.3
SUBSPINDLE	Maximum speed (rpm)		-	4500	-	4500	-	4500	-	4500
	Bearing outside diameter (inch)		-	5.9	-	5.9	-	5.9	-	5.9
	Bearing inside diameter (inch)		-	3.94	-	3.94	-	3.94	-	3.94
	Spindle nose		-	ASA 6''A2	-	ASA 6''A2	-	ASA 6''A2	-	ASA 6''A2
	Spindle inside diameter (inch		-	2.4	-	2.4	-	2.4	-	2.4
	Bar diameter (inch		-	2.05	-	2.05	-	2.05	-	2.05
	Chuck diameter (inch)		-	6.89	-	6.89	-	6.89	-	6.89
	Chuck bore (inch)		-	2.2	-	2.2	-	2.2	-	2.2
	Power (HP) (max./ S6 40%		-	18.8/10.7	-	18.8/10.7	-	18.8/10.7	-	18.8/10.7
	Turning torque (lb.ft) (max./S6 40%		-	215/113	-	215/113	-	215/113	-	215/113
MISCELLANEOUS	Coolant tank (gal)	Z400 Lateral	57.2		57.2		57.2		57.2	
		Z400 Rear	52.0		52.0		52.0		52.0	
		Z640 Lateral	59.8		59.8		59.8		59.8	
		Z640 Rear	52.0		52.0		52.0		52.0	
		Z1100	67.6		67.6		67.6		67.6	
	Hydraulic oil tank (liters)		2.6		2.6		2.6		2.6	
	Lubrication oil tank (liters)		1.0		1.0		1.0		1.0	
	Installed power KVA		30 30 30 45 45 45		30 30 30 45 45 45		45 45 45 45 45 65		45 45 45 45 45 65	
	Functioning voltage		400V 50Hz +5% (230V 50Hz +5%)		400V 50Hz +5% (230V 50Hz +5%)		400V 50Hz +5% (230V 50Hz +5%)		400V 50Hz +5% (230V 50Hz +5%)	
	Environmental temperature		35°C		35°C		35°C		35°C	
	Total weight (lb)	Z400	14550(*) -		14991(*) -		14991(*) -		15432(*) -	
		Z640	15432(*)	16314(*)	15652(*)	16534(*)	15652(*)	16534(*)	16093(*)	17195(*)
		Z1100	17195(*)	18077(*)	17416(*)	18298(*)	17416(*)	18298(*)	17636(*)	19180(*)
	Dimensions (inch)	TA Z400	91x70x74		91x70x74		91x70x74		91x70x74	
		TAY Z400	91x70x83		91x70x83		91x70x83		91x70x83	
		TA Z640	100x69x74		100x69x74		100x69x74		100x69x74	
		TAY Z640	100x69x83		100x69x83		100x69x83		100x69x83	
		TA Z1100	135x73x76		135x73x76		135x73x76		135x73x76	
		TAY Z1100	135x73x88		135x73x88		135x73x88		135x73x88	
	Inner volume (ft3)	TA Z400	35.31		35.31		35.31		35.31	
		TAY Z400	40.61		40.61		40.61		40.61	
		TA Z640	45.91		45.91		45.91		45.91	
		TAY Z640	52.97		52.97		52.97		52.97	
		TA Z1100	63.56		63.56		63.56		63.56	
		TAY Z1100	74.16		74.16		74.16		74.16	

(*) Approximate weights. Due to constant development of our products all specifications given here in are subject to change without notice.

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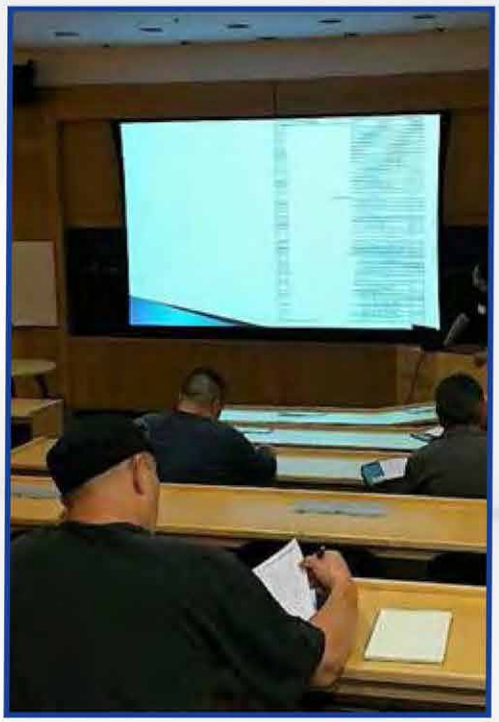

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