



CMZ Machinery Group, S.A.

Machine tool specifications

**TOUR CN
TL-20-MS
CN FANUC 31i T**



A RIGID, ERGONOMIC AND HIGH PRECISION DESIGN:

CMZ lathes are designed on the basis of a one-piece cast iron bed with rigid prismatic guideways. This CAD-designed bed and guideways, to obtain the best structure, ensures high rigidity while absorbing vibrations. The spindle is mounted with high quality bearings, allowing high rate removal and high precision on the workpiece produced.

The inclined bed design combined with a spindle height of 1,058 mm allows to load workpiece by operator and make setting up within easy reach.

WORKING AREA

Bar stock up	mm	65
Max. swing diameter over bed	mm	510
Max. turning diameter	mm	400*
Distance from main spindle to counter spindle	mm	546
Max. chuck size	mm	210

SPINDLE 1 (main)

Spindle Nose Type		A2-6
Spindle Bore	mm	73
Spindle bearing diameter	mm	110
Max spindle motor speed	rpm	4000
Drive power (40 / 100 % DC)	kW	22 / 15
Torque (40 / 100 % DC)	Nm	366 / 286
C1 Axis - 360.000 positions	YES	

SPINDLE 2 (counter)

Spindle Nose Type		A2-5
Bar stock up	mm	32
Spindle bearing outer diameter	mm	125
spindle bearing Inner diameter	mm	80

Max. size chuck	mm	130
Max spindle motor speed	rpm.	5000
Drive power (40 / 100 % DC)	kW	14 / 8
C2 Axis, 360 000 positions	YES	

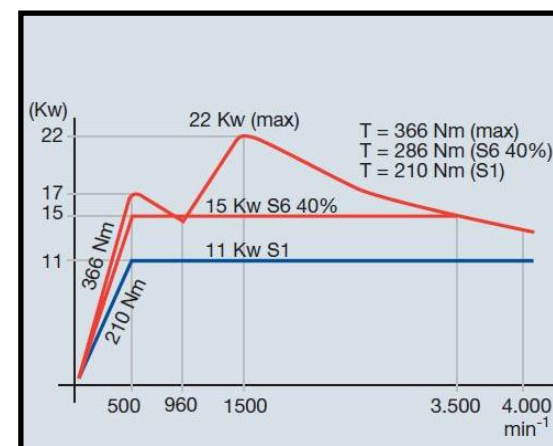
TURRET

No of tool stations		12
No of tool drive stations		12
Tool holder section	mm	25x25
Diameter of tail of the tool	mm	40
Index time of turret	sec.	0,15
Tool drive stations power	kW	12
Tool drive stations couple	Nm	46
Tool drive stations speed	rpm	4000

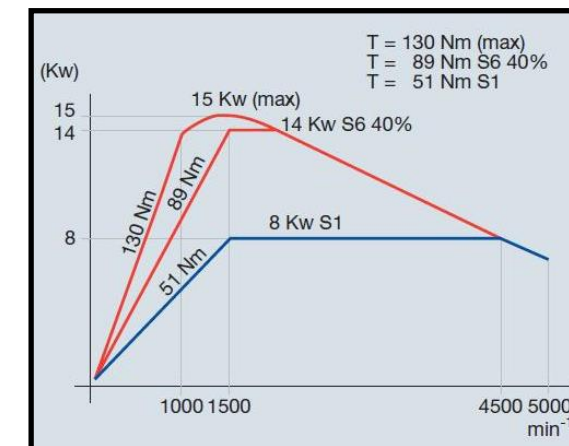
CAPACITIES

Max X1 axis (turret) travel	mm	240
Max Z1 axis (turret) travel	mm	640
Max Z2 axis (spindle 2) travel	mm	540
Max C1 and C2 axis Travel	degree	360
X1 axis feed rate	m/min	18
Z1,Z2 axis feed rate	m/min	24
X2 axis feed rate	m/min	24
Acceleration	G	1

Drive power of spindle 1



Drive power of spindle 2



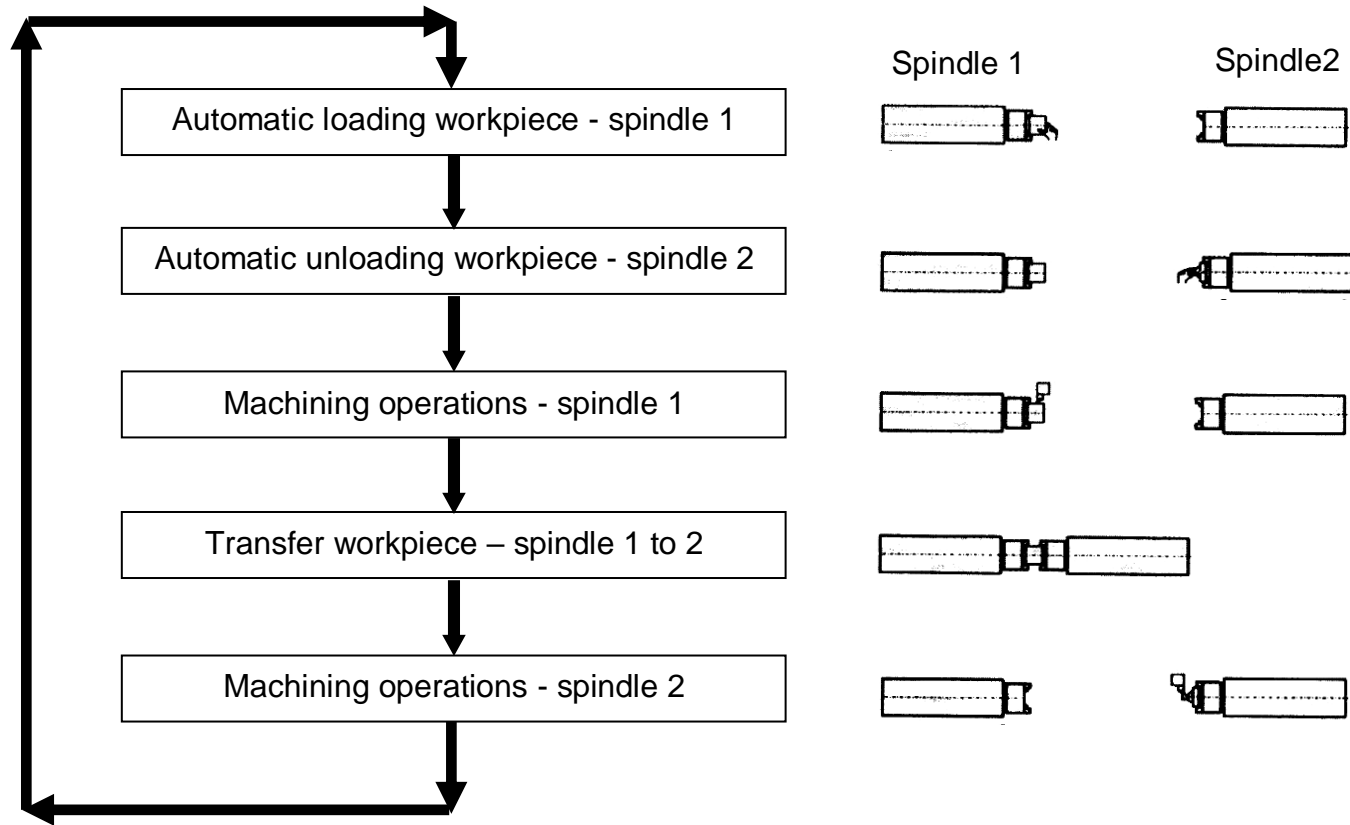
— servo motor fonctionnal power curve (S6 – 40% and 100%)
 — servo motor fonctionnal power curve (S1)

DT 2

Operation of the twin-spindle lathe

Chucks and Turret

Machining cycle on the twin-spindle lathe



Spindle 1 (main)

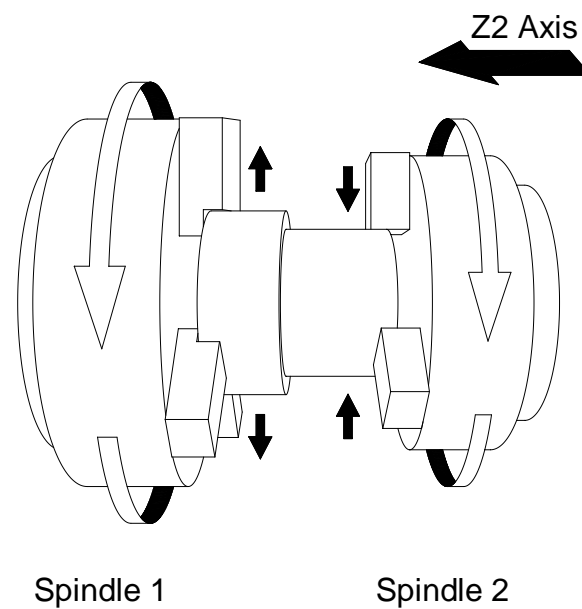


Spindle 2 (counter)

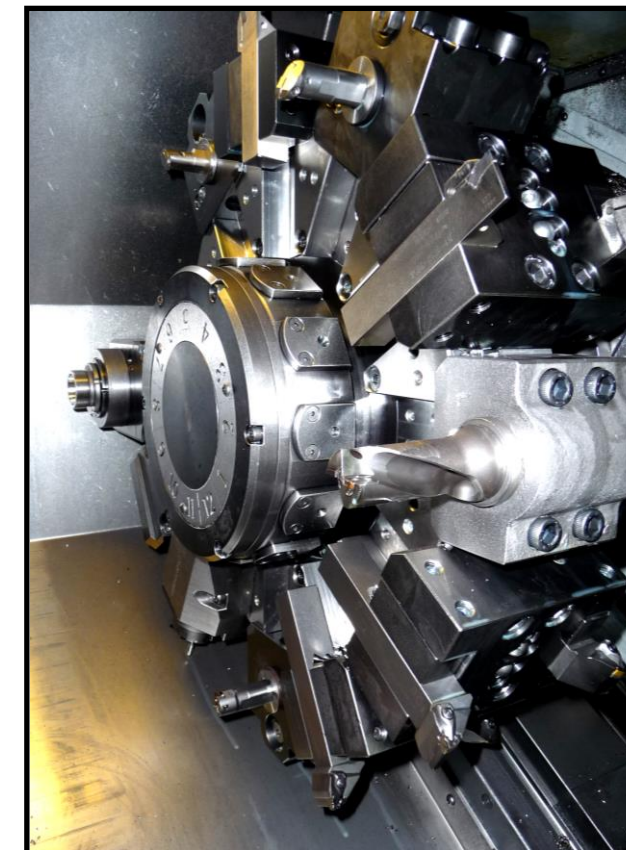


Synchronization and transfer of workpiece

To transfer a workpiece from the main spindle to the counter spindle, the speed must be synchronized. If the workpiece is transferred without speed synchronisation, it may be scratched.



Turret



DT 2