TN SERIES

Modular machine with 1 Spindle, 1 Turret and Gantry Robot

The TN machine is suitable for line integration such as with the TNW dual spindle lathe for efficient, automated pass through system.
Easy set-up from power-on to production.

High speed indexing turret

Cam type turret by servo motor for high speed indexing to reduce cycle time.

	Number of tool stations	Index time
TN300	10	0.25
TN400	12	0.20

The abore-mentioned data is actual values but not a performance guarantee.

Tailstock

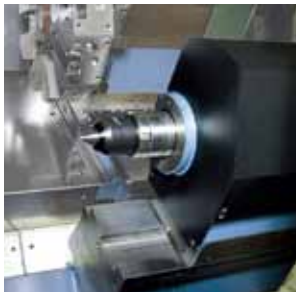
Shaft works are available with tailstock.

TN300

Body position	155mm
Quill stroke	180 or 230mm
Center type	Live Center MT.4

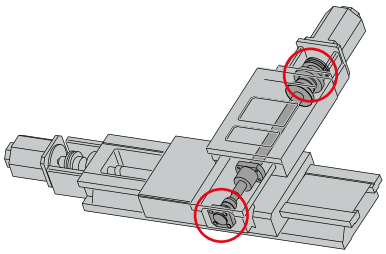
TN400

Body position	290mm
Quill stroke	180 or 230mm
Center type	Live Center MT.5

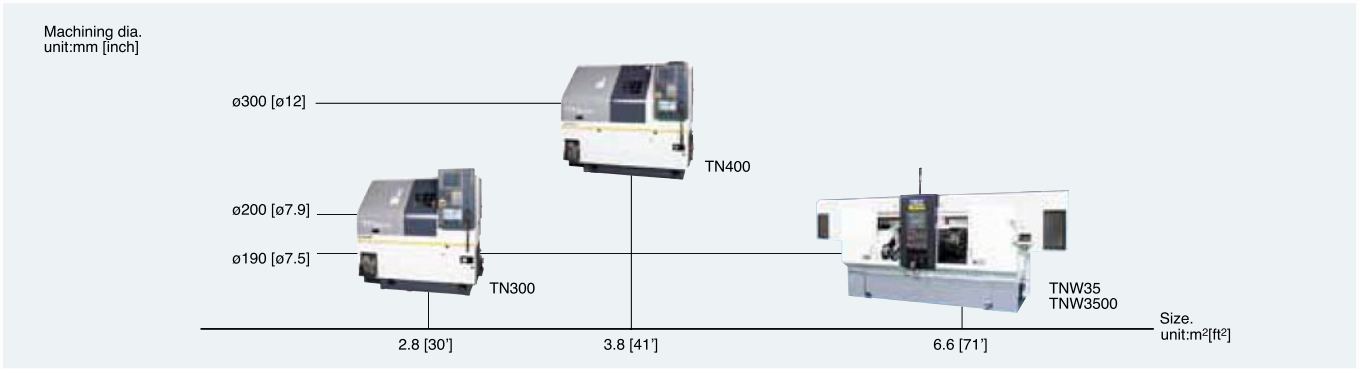


High rigidity slide

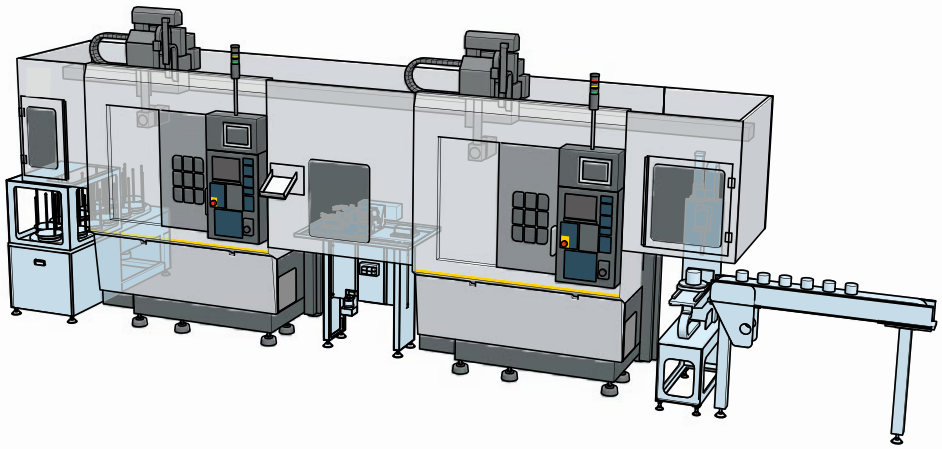
Box way slide with long term history and high reliability. Improved the bearing rigidity up to 140% as compared with old models by changing the constitution of support bearings for X-axis from 2 rows to 3 rows. More stable machining for a long term and heavy duty cutting is possible.



TN series line up



System Layout



Specification for TNW35 / 3500, TN300, TN400

Machine Specification

		mm	TNW35 / 3500	TN300	TN400
Recommended work size		mm [inch]	ø190 x 105 [ø7.5 x 4.1]	ø200 x 80 [ø7.9 x 3.1]	ø300x120 [ø11.8x4.7]
Spindle dia.			ø100 [3.9]	ø100 [3.9]	ø120 [4.7]
Spindle nose		mm [inch]	A2-6	A2-6	A2-8
Spindle bore		r.p.m	ø56 [2.2]	ø56 [2.2]	ø67 [2.6]
Spindle speed		kw [hp]	Max. 4200	Max. 4000	Max. 2220
Spindle motor			11/15 [15/20]	7.5/11 [10/15]	11/15 [15/20]
Number of tool station		sec	10 + 10	10	12
Turret index time			0.4	0.25	0.2
Turret mechaninsm		min-1	Cam	Cam	Cam
Live tool rotary speed		kw [hp]	5000	–	–
Live tool output		mm	2.23.7 [3/5]	–	–
Live tool holder size		inch	ø1~16	–	–
Chuck size			8	8~10	10
CNC control			FANUC 31i-A	FANUC 0i-TD	FANUC 0i-TD
Silide stroke	X-axis	mm [inch]	275 [10.83]	205 [8.1]	265 [10.4]
	Z-axis	mm [inch]	280 [11.02]	385 [15.2]	465 [18.3]
Feed motor	X-axis	kw [hp]	3.0 [4.0]	1.2 [1.6]	1.8 [2.4]
	Z-axis	kw [hp]	3.0 [4.0]	1.2 [1.6]	1.8 [2.4]

Robot Specification

Robot		L676H	L672H	L673H	L672B
Carryling capacity	kg [lb.]	5+5 [11+11]	5+5 [11+11]	5+5 [11+11]	10+10 [22+22]
Robot controller		MAX SP1	MAX SP1	MAX SP1	MAX SP1

Machine Size

Footprint mm X mm [feet, inch X feet, inch]	3500 x 1880 [11'6"x6'2"]	1600 x 1766 [5'3"x5'10"]	1900x2001 [6'3"x6'7"]
Machine height mm [feet, inch]	–	1699 [5'7"]	1827 [6'0"]
Machine height [with Robot] mm [feet, inch]	2750 [9'0"]	2578 [8'5.4"]	2673 [8'9"]
Machine weight kg [lb.]	–	2500 [5511]	3500 [7716]
Machine weight [with Robot] kg [lb.]	8000 [17600]	3000 [6614]	4000 [8818]

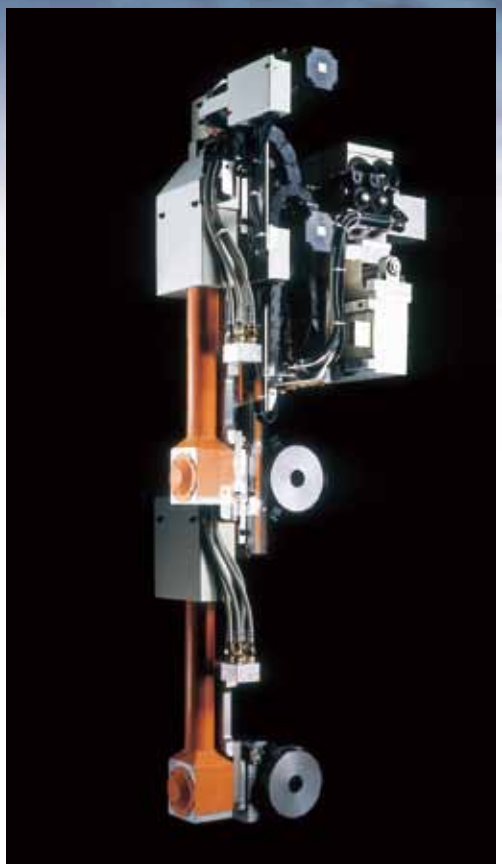
Specifications are subject to change without notice.

Gantry Robot

L67x

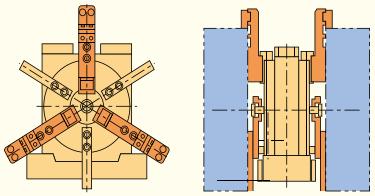
Double action mechanism

The robot has two arms (primary and secondary), with the secondary arm begin a 2:1 geared extension of the primary arm. This means that for every movement of the primary arm, the end of the secondary arm (i.e. the robot hand) travels twice that distance.

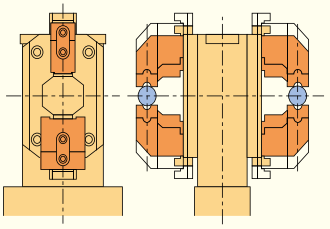


Robot Chuck

Robot hand for ring work



Robot hand for shaft work



		L676H	L672H	L673H	L672B
Machine model		TNW35 / TNW3500	TN300	TN400	TN400
Maximum traverse speed	m/min	100	100	100	66
Maximum up/down speed	m/min	73	73	73	30
Carring capacity	kg	5+5	5+5	5+5	10+10
	mm	ø200 × 80	ø200 × 80	ø200 × 80	ø300 × 120
Robot chuck stroke(dia)	mm	ø25 [OP:40]	ø25 [OP:40]	ø25 [OP:40]	ø30 [OP:50]

The hydraulic robot chuck enables stable clamping and workpiece handling with minimum space is possible by the thin type double hand.

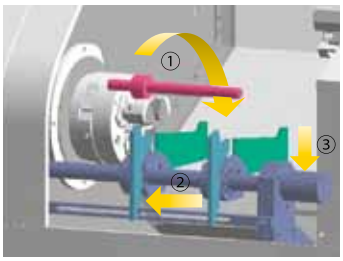
Option

Auxiliary loader

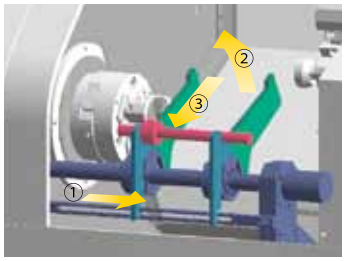
At the end of front machining, the auxiliary loader fitted to the Z-axis slide, removes the machined workpiece from the chuck. Next the robot receives the workpiece from the auxiliary loader, reverses the workpiece, and places it back into the chuck for back machining.

SWS type loading/unloading device

Loading



Unloading



The loading & unloading is operated by swinging and sliding the device. The mechanism which all motions are actuated by one cylinder is simple and reliable.