

TWINHORN TS-814 TURNING CENTER
STANDARD FEATURES

- ▶ Fanuc Oi-TC / 640 Meters Memory
- ▶ 8.4" Color TFT CRT
- ▶ AC Digital Servo & Spindle Drivers
- ▶ 12 Station Servo Driven Turret
- ▶ PCMCIA Slot for Memory Expansion
- ▶ Harden & Ground Box Ways
- ▶ Meehanite Cast Iron Bed, Base & Headstock
- ▶ Heat Exchanger for Electrical Cabinet
- ▶ Automatic Power off (M30)
- ▶ Fanuc Operating & Maintenance Manual
- ▶ One Year Machine Parts Warranty
- ▶ Fanuc 20 HP Spindle Motor
- ▶ 8" 3 Jaw Hydraulic Chuck
- ▶ Spindle Speed 3600 RPM
- ▶ Chip Conveyor & Cart
- ▶ Programmable Tailstock Quill
- ▶ Auto Lubrication System
- ▶ Pitch Error Compensation
- ▶ RS232 Interface
- ▶ Tool Kit / Work Light
- ▶ Operating & Electrical Manuals
- ▶ Two Year Control Warranty

MACHINE SPECIFICATIONS

Travel X Axis -----	8.27" (210mm)
Travel Z Axis -----	17.72" (450mm)
Rapid Feed Rate X Axis -----	787ipm
Rapid Feed Rate Z Axis -----	787ipm
Positioning X Axis -----	0.0004" / 4"
Positioning Z Axis -----	0.0008" / 12"
Repeatability X & Z Axis -----	±0.0001" (±0.003mm)
Swing Over Bed -----	23.62" (600mm)
Swing Over Carriage Cover -----	14.57" (370mm)
Distance Between Centers -----	16.14" (410mm)
Maximum Turning Diameter x Full Length -----	13.78" x 17.72" (350mm x 450mm)
Spindle Center Height -----	36.22" (920mm)
Spindle Nose -----	ASA A2-6
Spindle Bore -----	3.94" (100mm)
Bar Capacity -----	2.05" (52mm)
Spindle Motor -----	FANUC AC Spindle Motor B 12 / 7000i
Spindle Horse Power -----	20 HP
Spindle Speed -----	3600 RPM
Servo Drive Motor X & Z Axis -----	Fanuc BIS 8 / 3000

Note: Prices and model specifications are subject to change without prior notice. All prices are in U.S. Dollars.

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Turning Tool Shank Size -----	1"
Boring Bar Holder Size -----	1.50"
Turret Index Time (Station to Station) -----	0.1 Seconds
Tailstock Quill Traverse -----	3.94" (100mm)
Tailstock Quill Diameter -----	2.95" (75mm)
Tailstock Quill Taper -----	M.T. 4
Floor Space -----	70.87"x141.73"x74.80" (1800mmx3600mmx1900mm)
Power Requirement -----	220V, 3 Phase, 60Hz, 30kVA, 75Amp
Machine Weight -----	8,800 lb (4000 kg)

MACHINE PRICES

TS-814/Fanuc Oi-TC/8"Hydraulic Chuck/12 Station Servo Driven Turret -----	\$66,000
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OPTIONAL ACCESSORIES

Turning Tool Holder -----	\$225
Boring Bar Holder -----	\$225
Parts Catcher -----	\$2,200
Auto Tool Setter -----	\$3,650
Auto Door Open/Close -----	T/A
Transformer 30KVA -----	\$1,300
Boring Bar Bushing (Set) 1/2, 5/8, 3/4, 7/8, 1, 1 1/4, 1 1/2 -----	\$560
Morse Taper Bushing (Set) MT#2, MT#3, MT#4 -----	\$240
Soft Jaw 8" Chuck (Pointed) -----	\$65
Soft Jaw 8" Chuck (Flat) -----	\$65
Soft Jaw 10" Chuck (Pointed) -----	\$65
Soft Jaw 10" Chuck (Flat) -----	\$65
5C Collet Chuck A2-5 Overall Length 5" Capacity 1 1/16" -----	\$693
5C Collet Chuck A2-6 Overall Length 5" Capacity 1 1/16" -----	\$809
5C Collet Chuck A2-6 Overall Length 6" Capacity 1 1/16" -----	\$914
5C Collet Chuck A2-8 Overall Length 6" Capacity 1 1/16" -----	\$956
16C Collet Chuck A2-5 Overall Length 6" Capacity 1 5/8" -----	\$851
16C Collet Chuck A2-6 Overall Length 6" Capacity 1 5/8" -----	\$924
16C Collet Chuck A2-8 Overall Length 6" Capacity 1 5/8" -----	\$998
3J Collet Chuck A2-5 Overall Length 6" Capacity 1 3/4" -----	\$882
3J Collet Chuck A2-6 Overall Length 6" Capacity 1 3/4" -----	\$956
3J Collet Chuck A2-8 Overall Length 6" Capacity 1 3/4" -----	\$1,124

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Twinhorn TS-814 Machine Specifications

1. HEADSTOCK

A. Spindle Bearings

Front Angular Contact -----	7020A5P4
O.D -----	5.91" (150mm)
I.D -----	3.94" (100mm)
Rear Double Row Roller -----	NN3018KR
O.D -----	5.51" (140mm)
I.D -----	3.15" (90mm)

B. Spindle Shaft Hardness ----- HRC 58° - 62°

Spindle Bore -----	3.94" (100mm)
Spindle Nose -----	ASA A2-6
Spindle Runout Max. -----	0.0002" (0.005mm)
Spindle Taper -----	M.T. #6
Bar Capacity -----	2.05" (52mm)

C. Chuck

8" Chuck -----	Tonfou TF-3B
Plunger Stroke -----	0.63" (16mm)
Jaw Stroke -----	0.29" (74mm)
Max. Clamping Dia with standard soft jaw -----	8"
Min. Clamping Dia with standard soft jaw -----	0.47"
Max. Speed RPM -----	4900RPM
Max. Clamping Force -----	19,291 lb (8769kg)

D. Rotating Cylinder For TF3B-6"A5 ----- Tonfou RC6

Piston Stroke -----	0.59" (15mm)
Max RPM -----	7000RPM
Max Pressure -----	88 lb (40kg)

Rotating Cylinder For TF3B-8"A6 ----- Tonfou RC8

Piston Stroke -----	(22 mm) 0.87"
Max RPM -----	6200RPM
Max Pressure -----	88 lb (40kg)

Rotating Cylinder For TF3B-10"A8 ----- Tonfou RC10

Piston Stroke -----	0.98" (25mm)
Max RPM -----	4700RPM
Max Pressure -----	88 lb (40kg)

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2. TURRET

A. Type	-----	12 Station Servo Driven
B. Servo Motor	-----	Fanuc AC Alpha 6/20000
C. Gear Coupling	-----	24 Teeth Curvic
D. Clamping Force	-----	6,485 lb (2948kg)
E. Indexing	-----	Servo Driven
F. Indexing Time (Station to Station)	-----	0.1 Seconds
G. Turning Tools	-----	1"
H. Boring Tools	-----	1.50"
I. Min. Interference Dia. (Adjacent Position Loaded) 8 Tools	-----	8.5" (216mm)
12 Tools	-----	7.70" (196mm)

3. X AXIS

A. Ballscrew Dia.	-----	1.26" (32mm)
Lead	-----	0.39" (10mm)
Accuracy	-----	0.0002" (0.005mm) (C3)
Drive Motor (Standard)	-----	Fanuc B8is
B. Torque	-----	280lb (122kgf)
C. Rapid Rate	-----	780ipm (20m / min)
D. Travel	-----	8.27" (210mm)
E. Positioning	-----	0.0002"/12"
F. Repeatability	-----	± 0.0001"

4. Z AXIS

A. Ballscrew Dia.	-----	1.26" (32mm)
Lead	-----	0.39" (10mm)
Accuracy	-----	0.0002" (0.005mm) (C3)
B. Drive Motor (Standard)	-----	Fanuc B8is
C. Torque	-----	163 lb (71kgf)
D. Rapid Rate	-----	780ipm (20m / min)
E. Travel	-----	17.72" (450mm)
F. Positioning	-----	0.0002"/12"
G. Repeatability	-----	± 0.0001"

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5. TAILSTOCK

- A. Holding Force ----- 1350 lb (613kg)
- B. Quill Diameter and Travel ----- 2.95" x 3.94" (75mm x 100mm)
- C. Quill Taper ----- M.T. #4
- D. Slideway ----- Box Guideway

6. BED

- A. Cast Iron ----- Meehanite Process
- B. Width ----- 14.9"
- C. Angle ----- 45 Degrees

7. FLOOR SPACE REQUIREMENTS

- A. Length ----- 70.87" (1800mm)
- B. Width ----- 141.73" (3600mm)

8. PACKING SIZE

- A. Length ----- 70.87" (1800mm)
- B. Width ----- 141.73" (3600mm)
- C. Height ----- 74.80" (1900mm)

9. WEIGHT

- A. Gross ----- 8,360 lb (3800kg)

10. POWER REQUIREMENTS

- A. 220 Volt ----- 208/220 VAC, 3 Phase / 75 Amps
- B. 440 Line Voltage ----- Minimum: 440-220 3 Phase, Transformer / 30 KVA

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