



TCV400 and TCV400 APC

CNC Vertical Machining Center

A travelling column machine with six variants

- 1 G
- 60 m/ min
- 12,000 rpm spindle
- 180° pallet changer



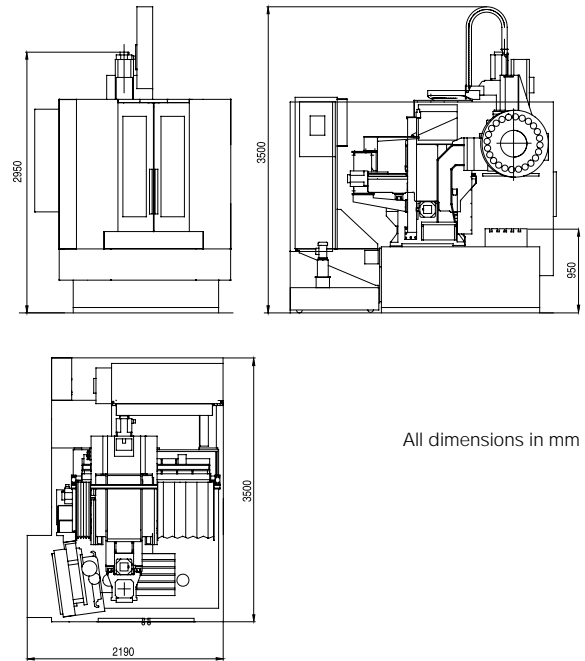
Machine Layout

TCV400 and TCV400 APC

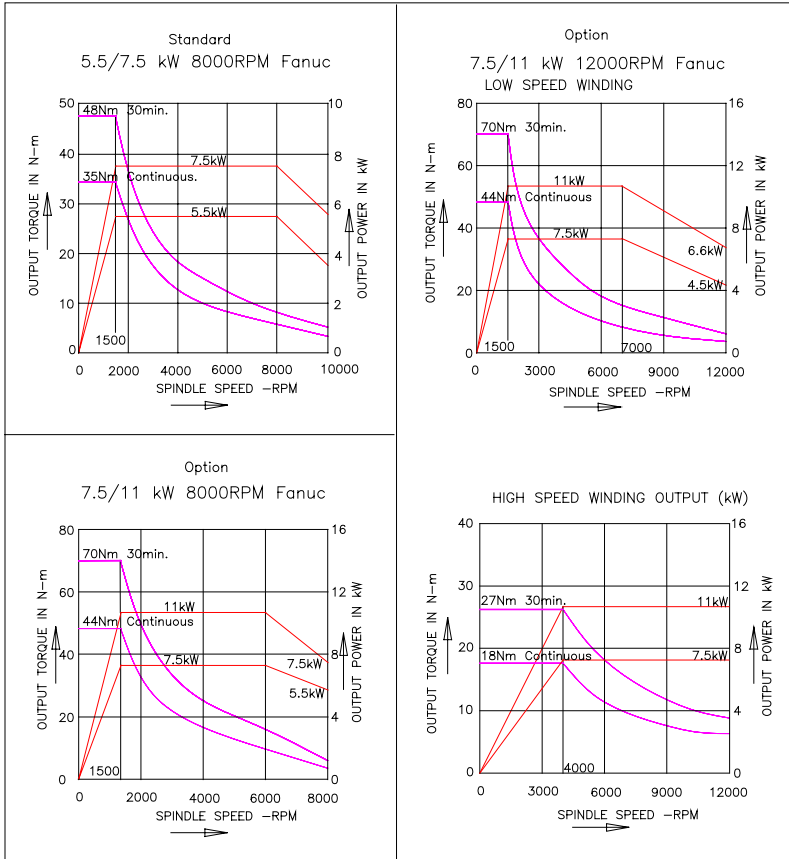
CNC Vertical Machining Center

Vikrant – This high dynamic VMC has been created for high volume auto/ aero component machining industry. Designed for high speed, heavy duty machining, **Vikrant** is fit for transfer line applications. TPM features along with isolation of chip and coolant zone ensure long and trouble free service from **Vikrant**. The **Vikrant** can be delivered in nine possible configurations.

- Suitable for ferrous and non-ferrous materials
- Spindle speed up to 12,000 rpm
- Rapid feed rate of 60 m/ min
- 1G acceleration
- Fast tool change 1.8 sec
- Compact front end width
- Efficient chip disposal
- TPM friendly
- Environment friendly



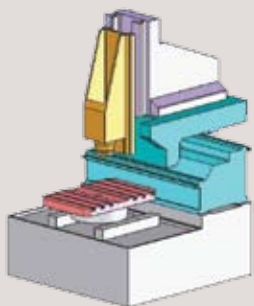
Spindle Speed - Torque Diagram



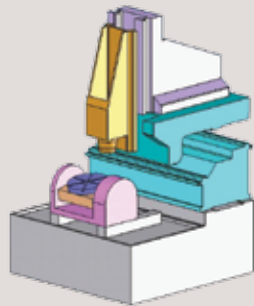
CNC SYSTEM FEATURES	Fanuc Oi	Siemens 802D SL Pro
LCD color monitor	8.4"	10.4"
Part program memory	256 kB	3024 kB
Ethernet connectivity	O	S
AI contour control (AICC)	STD	-
Manual guide Oi/ graphical support for canned cycle and contour programming	O	S
Number of programs on CNC memory	400	99
Alarm help function	S	S
High speed skip function/ measuring stage 1 probe	S	S
Spindle orientation	S	S
Rigid tapping	S	S
Rigid tap retraction	S	S
Linear interpolation	S	S
Circular interpolation	S	S
Simultaneous interpolation (3 axes)	S	S
Helical interpolation	S	S
Canned cycle/ process oriented cycle for drilling	S	S
Look ahead blocks	40	100
Part program edit with mark, copy, delete	S	S
Number of tool offset	400	128
Alarm history display	S	S
Operation history	S	-
Pocket calculator facility	-	S
RS-232C interface port	1&2 S	1 S
DNC operation thru	RS232C S	RS232C/ Ethernet S
Battery backup for memory	Required	Not required
Fixed MPG	S	S
Mobile MPG	O	O
Measuring cycles for milling	-	S
Spline programming (COMPCAD and COMPCURV create a spline out of several linear blocks for die mould application)	-	S
Memory card (PCMCIA) input/ output	O	O
Data server	S	-
Saving and restoring by memory card	S	S
Maintenance information screen	S	-
Periodic maintenance screen	S	-
Custom macro B	S	-
Programming with user variables	-	S
Machine alarm diagnosis	O	-
Tool life management	S	-
Run hour and part count display	S	S

S - Standard feature; O - Optional feature '-' Not available

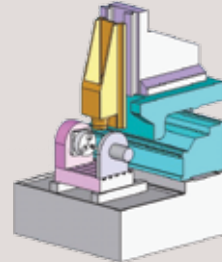
TCV400 Machine Variants



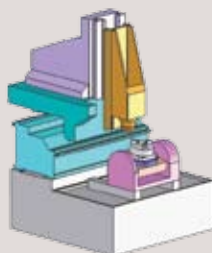
Option 1
Standard machine with APC



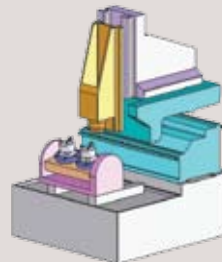
Option 2
Standard machine with cradle type rotary table 4th Axis



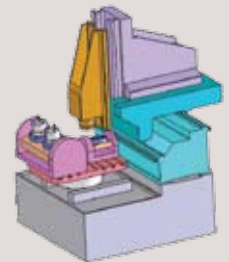
Option 3
Standard machine with rotary table and tailstock



Option 4
Standard machine with chuck on cradle type rotary table



Option 5
Standard machine with two chuck on cradle type rotary table



Option 6
Standard machine with type chuck on index table



Standard features

- AC servo drive
- Hardened and ground linear motion guideways (roller type)
- Hardened and ground ballscrews
- 24 tools ATC
- Spindle speed of 8,000 rpm
- Feedback through absolute encoder
- Rigid tapping
- Electronic counter balance
- Coolant system
- Chip tray
- Manual pulse generator
- Machine lamp
- Levelling kit
- Automatic lubrication system
- Maintenance tool kit
- Spindle taper cleaning
- Air curtain
- RS 232 serial interface
- Full machine guards

Optional features

- Automatic pallet changer
- Linear glass scale feedback
- Spindle speed 12,000 rpm
- Spindle chiller
- High pressure coolant through spindle
- Ring coolant around the spindle
- High column
- Chip conveyor
- Coil conveyor
- Coolant gun
- Air gun
- Edge finder
- CNC rotary table
- Voltage stabiliser
- AC unit for electrical cabinet
- Four tier lamp
- Pull studs
- Siemens 802D SL Pro

SPECIFICATIONS	UNIT	TCV400	TCV 400-APC
Table/ Pallet			
Clamping area	mm x mm	470 x 650	450 x 650 (x2)
No./ Width/ CD of T-slots	No./ mm/ mm	5/ 18/ 80	5/ 18/ 80
Maximum safe load on table	kg	450	200 (x2)
Distance from table to spindle face	mm	150 - 610	150 - 610
Pallet change time	sec	-	4.5
Traverse			
X-axis	mm	610	610
Y-axis	mm	460	460
Z-axis	mm	460	460
Axis drive			
Feed rates	mm/ min	1 - 10000	1 - 10000
Rapid feed rate X/ Y/ Z axis	m/ min	60/ 60/ 60	60/ 60/ 60
Spindle			
Power (Cont./ 30 min. rating)	kW	5.5/ 7.5 (7.5/ 11)	5.5/ 7.5 (7.5/ 11)
Speed	rpm	8,000 (12,000)	8,000 (12,000)
Taper		BT 40	BT 40
Auto tool changer			
Number of tools	Nos.	24	24
Maximum tool diameter with adj. pocket full/ empty	mm	80/ 125	80/ 125
Maximum tool length	mm	250	250
Maximum tool weight	kg	8	8
Tool change time (tool to tool)	sec	1.8	1.8
Accuracy			
Positioning	mm	± 0.003	± 0.003
Repeatability	mm	± 0.002	± 0.002
Installation data			
Machine weight (approx.)	kg	6500	7500
Total connected load	kVA	28.5	30
Pneumatic supply	Bar	6	6
Power supply		415 V, 50 Hz, 3 phase	
CNC system		Fanuc OiMC (Siemens 810D)	

Values within brackets are optional features.

Bharat Fritz Werner Ltd.

An ISO9001:2000 and ISO14001:2004 Machine Tool Manufacturer

Off Tumkur Road, Bangalore - 560 022, India. Ph: 91-80-28395745/ 39821100

Fax: 91-80-28394816, e-mail: bfwmarketing@bfw.co.in URL: www.bfwindia.com



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REGIONAL OFFICES

- BANGALORE:** Off Tumkur Road, Bangalore - 560 022. Ph: (080) 28395745, 39821208. Fax: (080) 28394816 E-mail: bfwbangalore@bfw.co.in
- CHENNAI:** 4G, Century Plaza, 560/ 562, Mount Road, Chennai - 600 018. Ph: (044) 24349299, 24343367. Fax: (044) 42132353 E-mail: bfw.chennai@bfw.co.in
- COIMBATORE:** HI, Damodar Centre (1st Floor), 1050, Avinashi Road, Coimbatore - 641 018. Ph: (0422) 2211694. E-mail: bfwcoimbatore@bfw.co.in
- HYDERABAD:** Flat No.204, 1-11-229, Ramaveda Sirisampada, Apt., Near Shyamalal Bldgs., Begumpet, Hyderabad - 500 016. Ph: (040) 27762035 E-mail: bfwhyderabad@bfw.co.in
- KOLKATA:** 8, India Exchange Place, Ruby House (6th Floor), Kolkata - 700 001. Ph: (033) 22429334 Fax: (033) 22427286. E-mail: bfwkolkata@bfw.co.in
- MUMBAI:** 206, Runwal Commercial Complex, II Floor, LBS Marg, Mulund West, Mumbai - 400 080. Ph: (022) 25653362, 25653358. Fax: (022) 25653392. E-mail: bfwmumbai@bfw.co.in
- NEW DELHI:** 510, Mahatta Towers, B-Block, Community Center, Janakpuri, New Delhi - 110 058. Ph: (011) 25522210, 25522214. Fax: (011) 25530696 E-mail: bfwdelhi@bfw.co.in
- PUNE:** BFW House, 124A, H Block, MIDC Pimpri, Pune - 411 018. Ph: 020-32524638. E-mail: bfwpune@bfw.co.in
- CHANDIGARH:** S.C.O. 907, 1st Floor, NAC, Manimajra, Chandigarh - 160 101. Ph: 0172-4649055. E-mail: bfwchandigarh@bfw.co.in

Dealer/ Representative

Resident representatives at Aurangabad, Jamshedpur and Kanpur

We are continuously working on the development of our products, the information contained in this brochure is subject to modification.

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