

NC Unit Specifications / FANUC 0i-MF

Item	Description	
Controlled axes	Controlled axes	3(X, Y, Z)
	Max. simultaneously controlled axes	Positioning (G00)/ Linear Interpolation (G01) Circular Interpolation (G02, G03)
	Least input increment	0.001 mm / 0.0001"
Spindle function	Spindle speed control	S5 (5 Digit)
	Spindle speed override	50~150%
	Spindle orientation	M19
Feed function	Feedrate override (10% increase)	0~200%
	Dwell	G04
	Reference position return	G27 / G28 / G29 / G30
	Manual pulse generator	0.001/0.01/0.1mm
	Cutting feed override	0 ~ 5,000 mm/min
Tool function	Rapid traverse override	F0(Fine Feed), 25/50/100%
	Tool number command	T2(2 Digit)
	Tool nose radius compensation	G43 / G44
	Tool radius compensation	G41 / G42
	Tool offset pairs	400 EA
Programming function	Tool geometry / wear offset	G90 / G91
	Canned cycle	G70 ~ G72 / G74 ~ G76 / G80 / G83 ~ G88
	Decimal point input	Able to input up to decimal point
	R command circular interpolation	R radial programming without using I, J, K values
	SUB program	4 phase
	Work coordinate system	G54 ~ G59
Tape Functions	Local / machine coordinate	G52 / G53
	Max program dimension	±99999.999mm
	M function	M3 (3 digit)
	Input code	ISO/EIA auto recognition
	I/O interface	RS232C
Tape Functions	Program storage space	512 Kbyte
	Number of stored programs	400ea
	Display unit / MDI	8.4" color LCD / Soft input type MDI
	Synchronized tapping	Rigid tapping function
	Background editing	Program saving / editing during automatic operation
	Backlash compensation	Pitch error offset compensation for each axis
	Search function	Sequence / program number search
	Safety function	Emergency stop / overtravel
	Program test function	Machine Lock / Single Block
	Control function	Memory / MDI / Manual
	Mirror image	M75 / M76
Custom macro	#100 ~ #199, #500 ~ #999	

SMEC

PCV 430

VERTICAL MACHINING CENTER



SMEC
SMEC America Corp.

14 West Forest Avenue Englewood, NJ 07631 USA
Office: +1 201-227-7632
Email: sales@esmecamerica.com

www.esmecamerica.com
www.youtube.com/smecmachinetoolsamerica

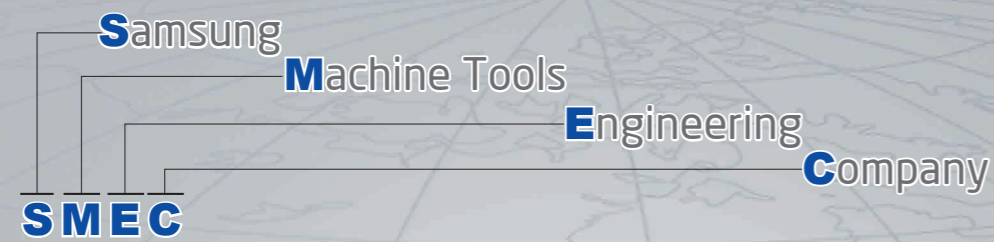


◆ Design and specifications subject to change without notice.

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SMEC
SMEC America Corp.

SMEC



Company History

- 1988 - Started as **Samsung Heavy Industries** Machine Tools Business
- 1989 - Horizontal and vertical machining center technology partnership with **OKK Japan**
- 1991 - Turning center and vertical machining center technology partnership with **Mori Seiki**
- 1996 - 5-sided processing center technology partnership with **Toshiba**
- 1999 - Spun out from **Samsung Aerospace Industries** and established **SMEC Co., Ltd**
- 2018 - **SMEC America Corp** established to provide factory support to the distributor network and customers

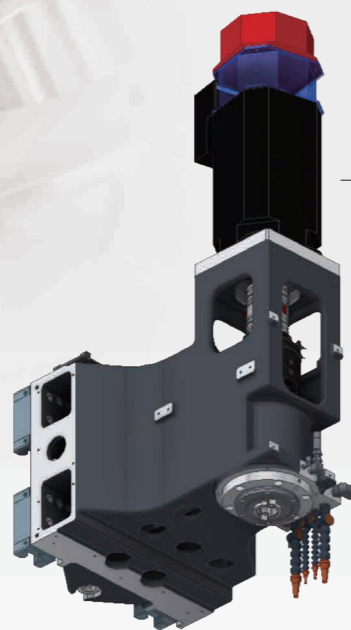
PCV 430

Designed for **high speed** and **ultra precision** machining

High speed, Ultra precision
Vertical Machining Centers

- The largest machining capacity in its class
- Low centered base structure and rigid one-piece cast iron bed
- The widest guide way span and Saddle in its class





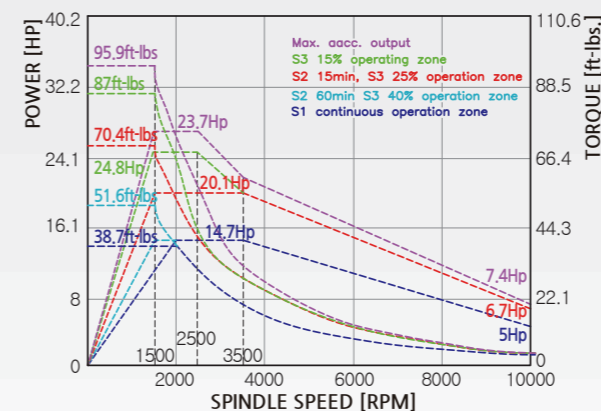
Spindle(Direct Drive)

Spindle Speed
10,000 rpm

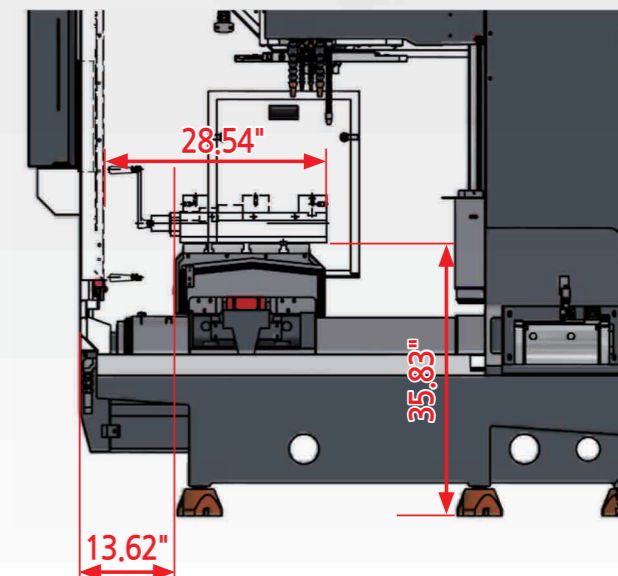
Spindle Motor
14.6(cont.)/27.2(max.) HP

Spindle Torque
70.4(15min)/87(max.) ft·lbs

Spindle Power and Torque Diagram



Easy Accessibility to Spindle(PCV 430)



Using 4-rows of P4 angular ball bearings, headstock temperature is effectively controlled while thermal displacement is minimized by forced heat dispersion from the headstock.



X-axis Saddle & Table

Wide saddle allows for high precision machining during extended working hours

Z-axis Column & Headstock

Wide column base and high rigidity column enable heavy duty machining

Y-axis Bed & Saddle

Low centered rigid one-piece bed and wide Saddle span minimize table overhang

Rapid Traverse (X/Y/Z)
1,890/1,890/1,417 ipm

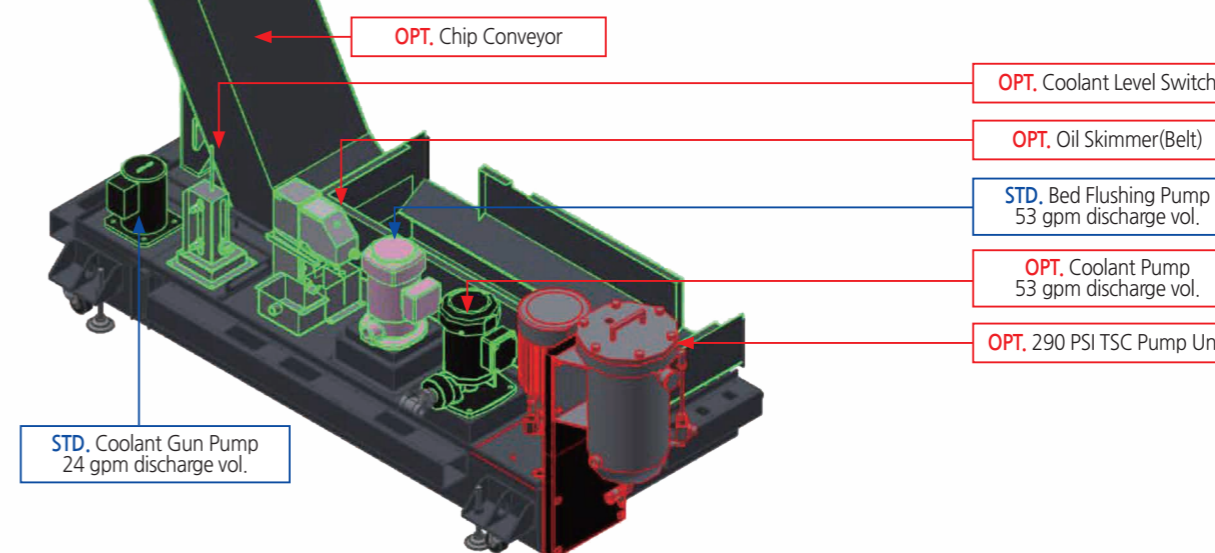
Table Size
29.5×16.5 inch

Centralized Utility Check for Easy Maintenance



Centralized utility monitoring layout makes operators easy to check and maintain lubrication, bearing fluid and air supply.

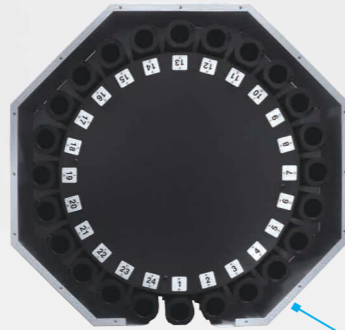
Separate & Easy-to-remove Coolant Tank Design



Machine Structure

TS27R (OPT.)

- Automatic tool length measurement
- Thermal error compensation



CAM Type 24 MG ATC

- CAT 40
- Tool to tool : 1.3 sec
- 24 Tool Pockets
- Twin arm type tool Change System
- Max. tool weight (15.4 lbs)
- Max. tool diameter 3.15" (4.92" adjacent pocket empty)

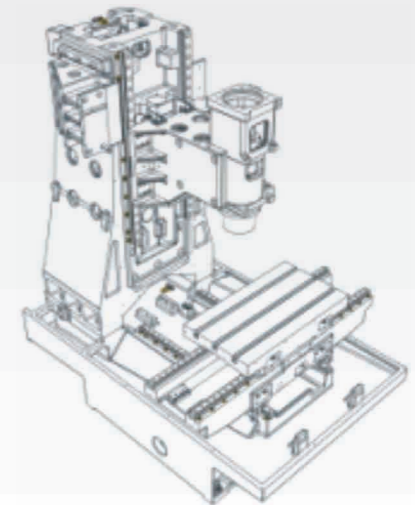


Big Plus BBT40 Taper

- Maximum taper and face contact
- Minimal tool vibration

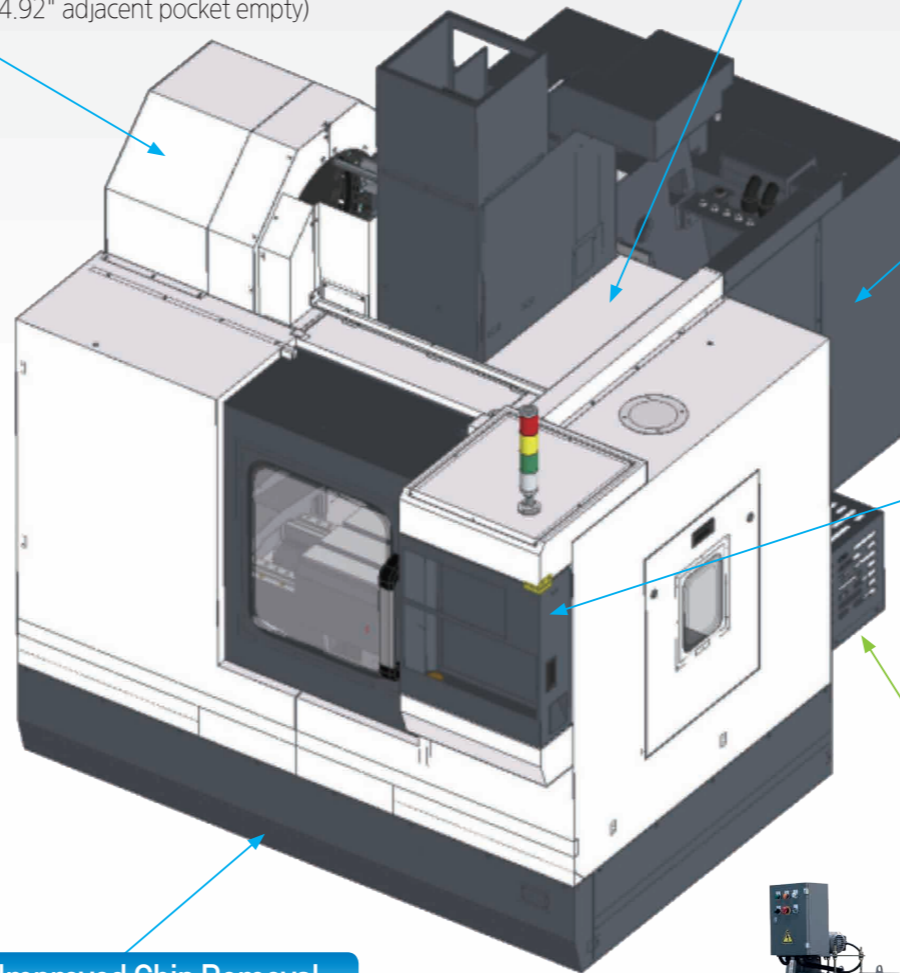
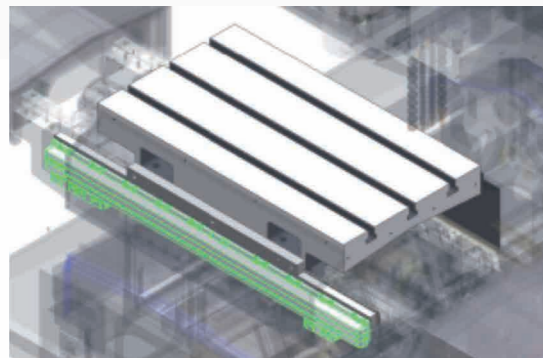
Rigid Column

- Arch shape column
- Balanced wide frame



Linear scale (OPT.)

- Direct Feed Back

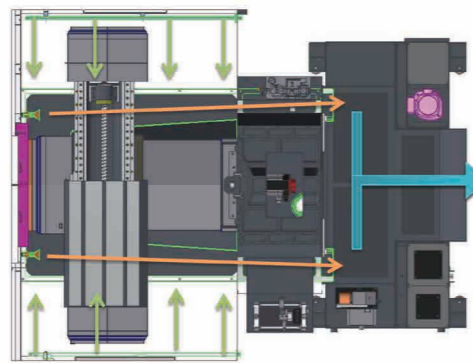


Swivel OP Box

- Easy to use operator panel layout



Oil Cooler (OPT.)



Improved Chip Removal

- Chip flushing with coolant
- Bed flushing

Chip Conveyor (OPT.)



Cross Roller Guide Ways



User Friendly Control System Design

Easy-to-use Software Package

Samsung's easy-to-use operating software is customized to provide easy programming solutions, easy program set-ups and user-friendly operations of the machine.

Probe GUI (Option)



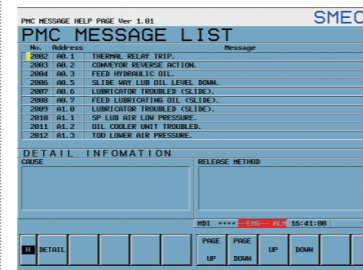
The GUI guides users through numerous probing and tool setting functions, resulting in fast and accurate set-ups.

Manual Guide I (Option)



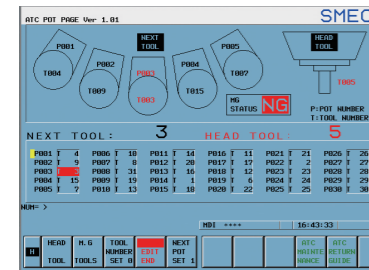
The operator-friendly software Manual Guide I makes your work at the machine or computer easier, covering the work from drawing to manufactured component in the shortest amount of time.

PMC Message List



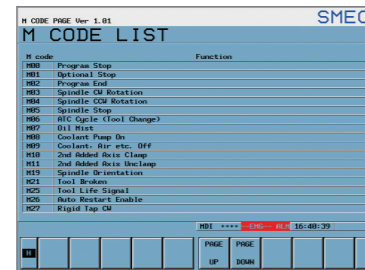
Provides PMC error messages and guides the operator to find the cause of the error quickly for minimal machine downtime.

Tool Data Registry (Option)



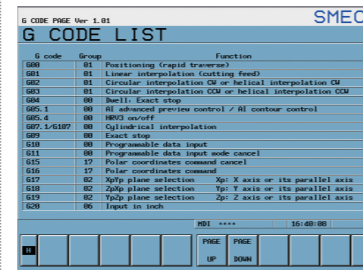
Provides ATC tool pot information and guides the operator for easy tool recovery in the event of emergency stop of ATC.

M Code List



Provides easy-to-review of M codes and their functionalities.

G Code List



Provides easy-to-review of G codes and their functionalities.

Easy-to-use Operator Panel

The operator panel and keyboard layout are designed to provide the operator for convenient usages and efficient operation of the machine.



90 Degree Swiveling Control Panel

The control panel can be swiveled up to 90 degree, providing the operator for more convenient position to operate the machine.



Portable MPG

The portable MPG allows the operator to set up workpieces more conveniently.

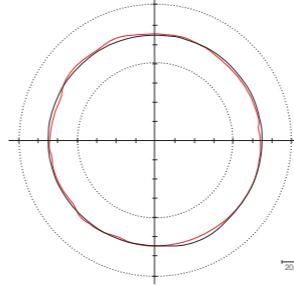


Cutting Capacity (CAT40 14.7/20.1HP)

Face mill	Carbon Steel (SM45C)	Face mill	Aluminum (AL6061)	End mill	Carbon Steel (SM45C)
Ø3.937" Face mill (5Z)	Cutting amount 11.72 in ³ /min	Ø3.15" Face mill (5Z)	Cutting amount 24.59 in ³ /min	Ø1.18" End mill (6Z)	Cutting amount 3.97 in ³ /min
	Spindle speed 1,500 rpm		Spindle speed 1,500 rpm		Spindle speed 230 rpm
	Feedrate 31.50 ipm		Feedrate 49.60 ipm		Feedrate 1.89 ipm

High Precision

Roundness

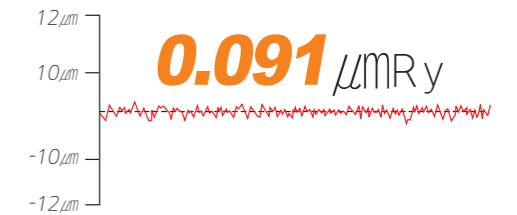


5.80 μm

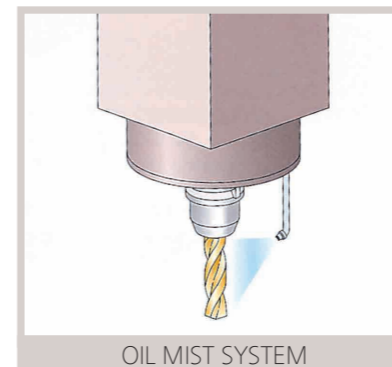
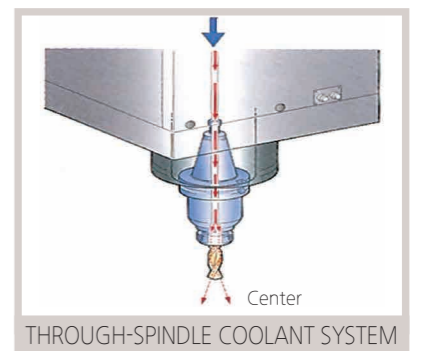
Roundness

Machine	PCV 430
Material	A 1050P
Tool	Ø25x4T
Spindle Speed	1,500RPM

Surface Roughness <O.D. cutting>

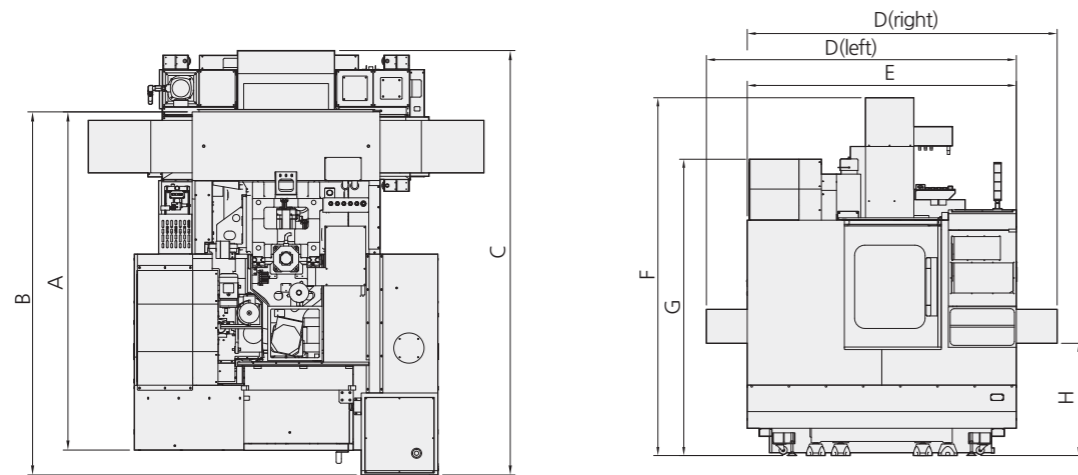


Optional Accessories



Machine Dimensions

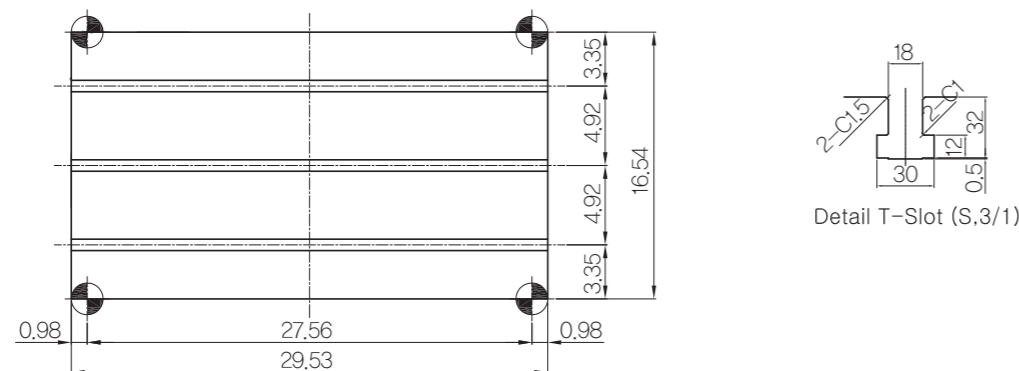
Unit : inch



A	B	C	D	E	F	G	H
(wide)	(with controller box)	(max. wide)	(with chip conveyor)	(length)	(height)	(shipping height)	(discharge)
92.16	98.93	129.44	117.59	82.67	109.92	91.02	34.48

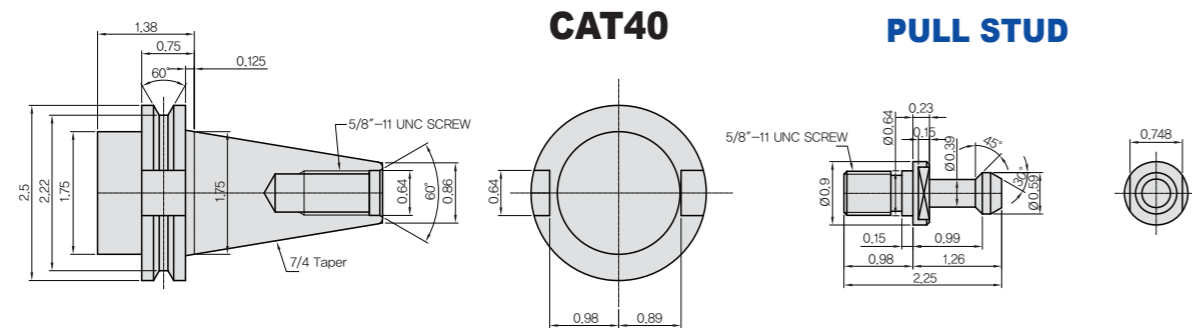
Table & T-Slot

Unit : inch



Tool Shank

Unit : inch



Machine Specification

DESCRIPTION			PCV 430
Travels	X-axis travel	inch	27.6
	Z-axis travel	inch	16.93
	X-axis Rapid traverse rate	inch	20.1
	Z-axis Rapid traverse rate	inch	5.1~25.2
Table	Table size	inch	29.5 X 16.5
	Max. Workpiece weight	lbs	1,234
	Table surface	inch	4.92x0.71x3ea
Spindle	Spindle speed	rpm	10,000
	Motor (Cont./Max)	hp	14.6/27.2
	Torque (15min/Max)	ft-lbs	70.4/87
Feedrate	X-axis Rapid traverse rate	ipm	1,890
	Y-axis Rapid traverse rate	ipm	1,890
	Z-axis Rapid traverse rate	ipm	1,417
ATC	Tool shank	-	CAT 40
	Pull stud	-	MAS P40T-1
	Tool storage capacity	ea	24
	Max. Tool diameter (adjacent empty)	inch	3.15(4.9)
	Max. Tool length / weight	inch/lbs	11.8/15.4
	Tool-to-tool time	sec	1.3
Motors	Tooling changing method	-	Double Arm Swing
	Tool select type	-	Memory random
	Size(with Side Chip conveyor)LxWxH	inch	82.7(117.6)x129.4x110
	Size(with Rear Chip conveyor)LxWxH	inch	-
weight	lbs	9,920	
Coolant tank capacity	Liter	240	
Electric Power Supply	kVA/V	32/220	
Controller		FANUC	

• Design and specifications subject to change without notice.

() : Option

Standard Accessories

- TOOL AND TOOL BOX
- WORK LIGHT
- MPG
- COOLANT SYSTEM AND TANK
- FULL SPLASH GUARD
- 24 TOOL ATC

Optional Accessories

- CHIP CONVEYOR
- AUTO TOOL LENGTH MEASUREMENT
- ROTARY TABLE 4thAXIS, 5thAXIS
- PARTS PROBE
- THRU SPINDLE COOLANT