

# PRIMA

## Horizontal Machining Center PRIMA 54 & PRIMA 55



**Competitive edge for your manufacturing!**

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**BFW**  
Bharat Fritz Werner

## Horizontal Machining Center - PRIMA 54 & PRIMA 55

Prima is a product of decades of our experience in building Horizontal Machining Centers amalgamated with valuable feedback from our customers.

Prima is a machine, with many innovative first-in-class features as under:

- Isolated machine elements from chip zone.
- Stainless steel lamella covers for X-Y & Z axes.
- Chip disposal through stainless steel chute right below the cutting zone.
- Fully enclosed machining area
- Maximum spindle torque upto 235 Nm on Prima 54 & upto 382 Nm on Prima 55
- Overhead shower wash with copious coolant flow.

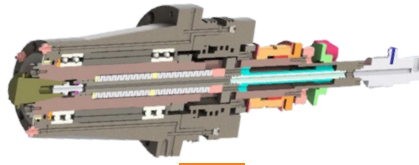
Prima stands for reliability, performance & productivity.



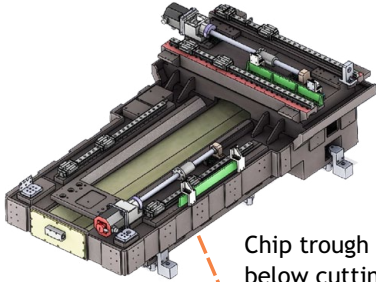
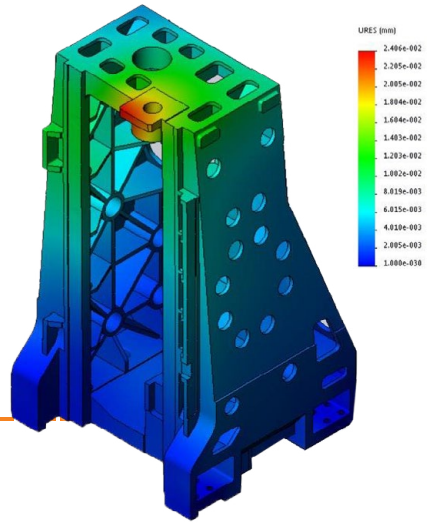
Model		PRIMA 34	PRIMA 44	PRIMA 54	PRIMA 55	PRIMA 65
Pallet size	mm	400 x 320	500 x 400	630 x 500	630 x 500	800 x 630
Spindle Taper	type	HSK A63, BT40			HSK A100, BT50	
Axes Traverse	mm	500, 500, 500	600, 600, 600	800, 700, 800	800, 700, 800	1000, 850, 900
Job swing Dia x Ht (mm)	mm	500 600 250	630 700 400	700 800 500	700 800 500	1050 1050 1000
Weight (kg)						

# PRIMA

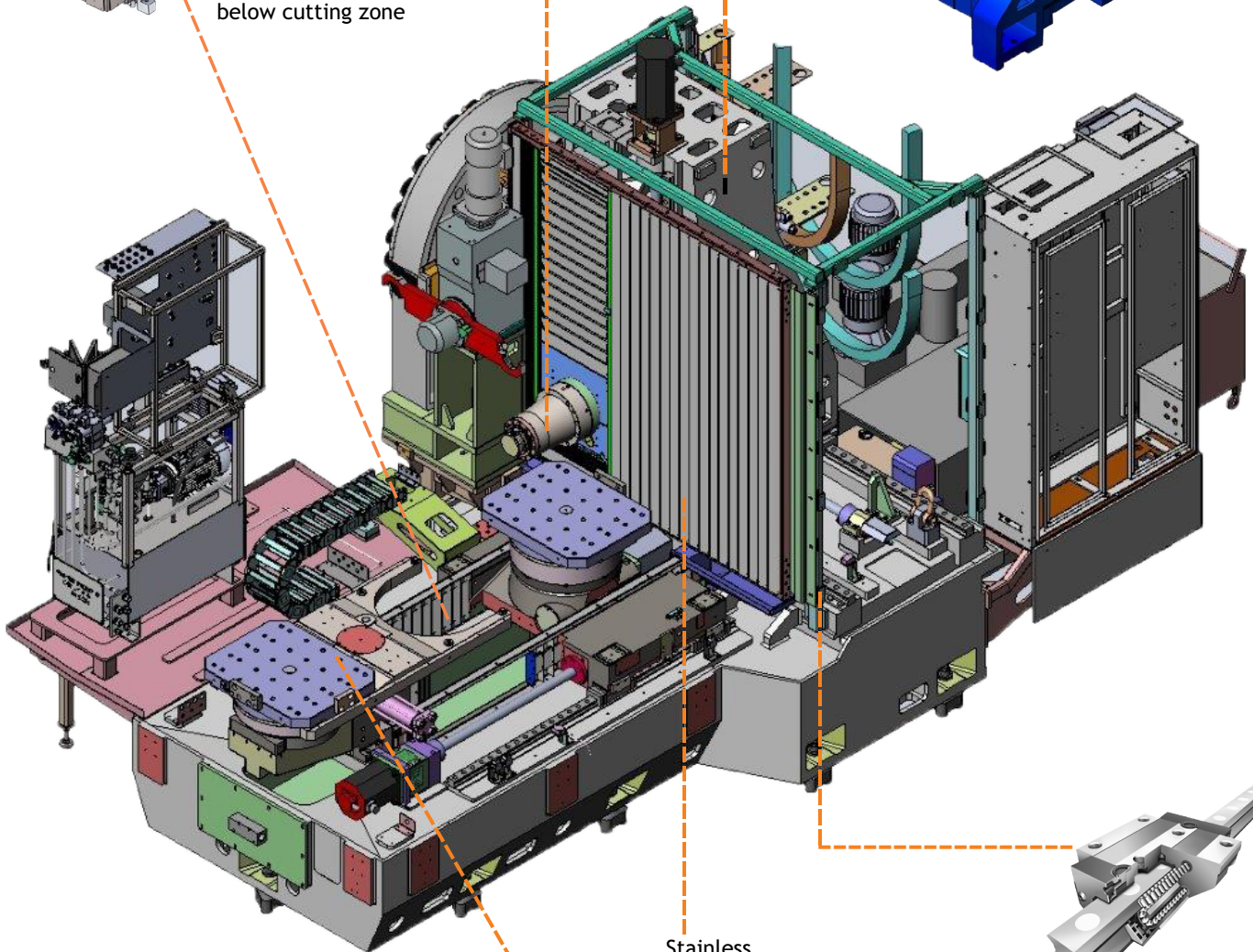
Best in class  
torque of 235 Nm on Prima 54  
torque of 382 Nm on Prima 55



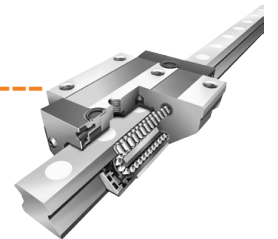
Rigid,  
Thermo-symmetric  
structures, designed &  
FEA analysed for best  
strength to  
weight ratio



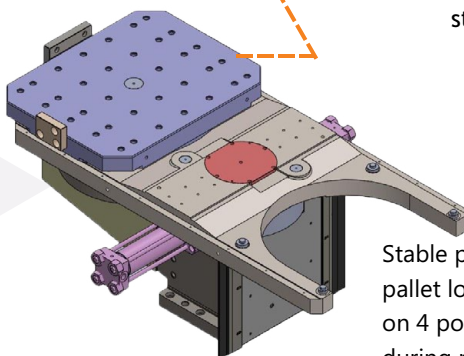
Chip trough directly  
below cutting zone



Stainless  
steel lamella covers

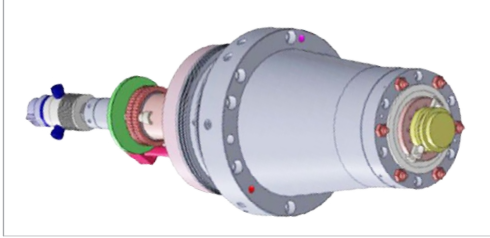


Roller type LM guide-ways  
for better rigidity & sustained accuracies



Stable pallet change with  
pallet located & supported  
on 4 points  
during pallet change.

## Spindle



Cartridge type design of spindle ensures ease of maintenance & replacement.

Prima spindles offer best-in-class power & torque.

Robust spindle with Ø 80 bearing ID on Prima 54 & Ø 90 bearing ID on Prima 55 offers unmatched performance.

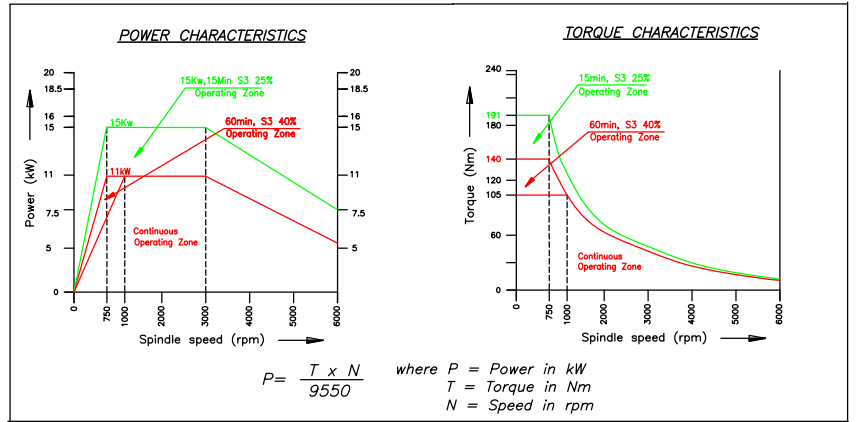
## Applications



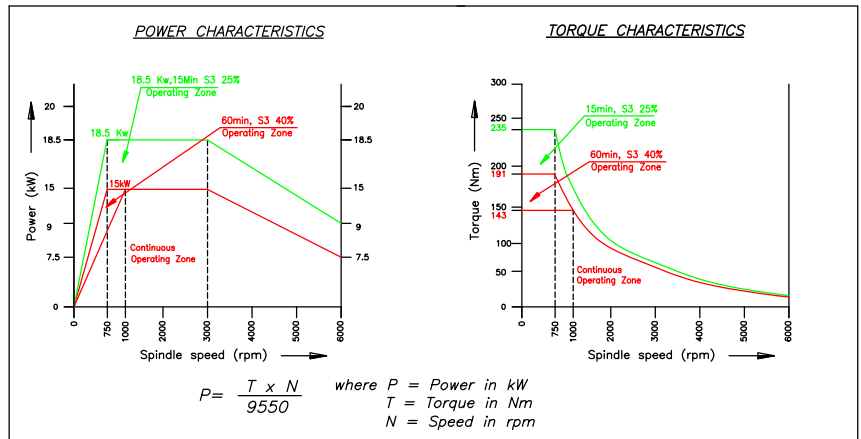
Many more..

## Spindle Characteristics

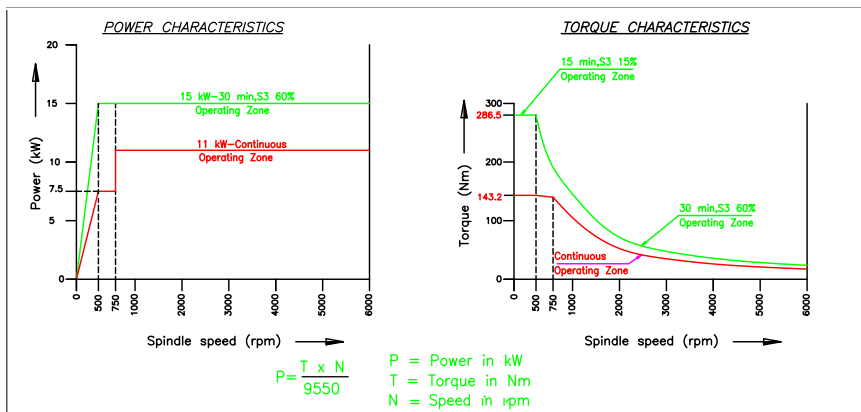
Standard - Prima 54



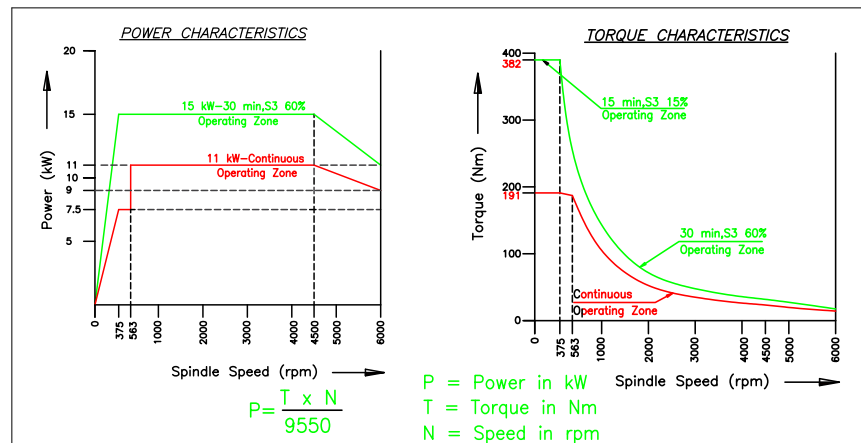
Optional - Prima 54



Standard - Prima 55



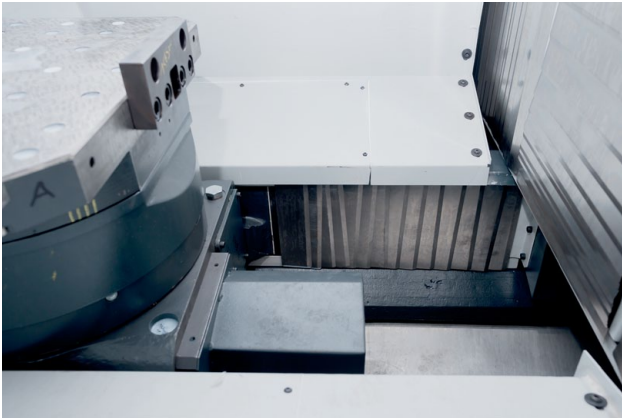
Optional - Prima 55



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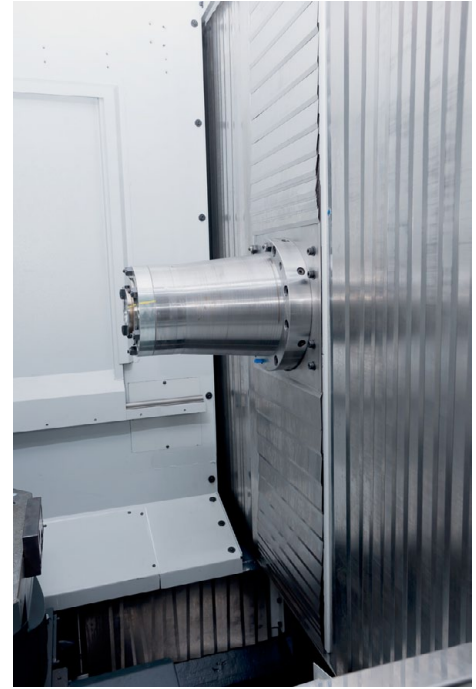


Fully enclosed machining zone with overhead shower wash for most efficient chip evacuation ▲

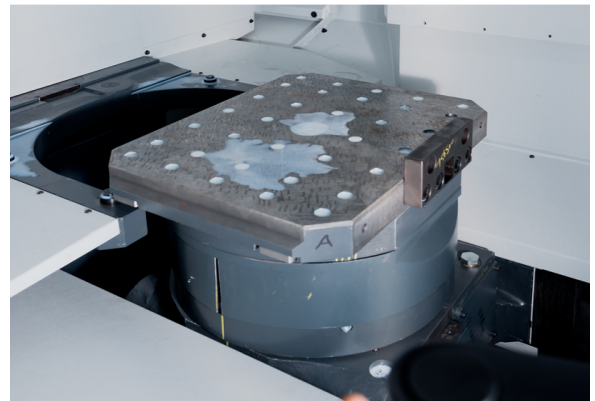


Excellent chip management - stainless steel chip trough directly below the cutting zone for most efficient chip disposal - first-in-class ▲

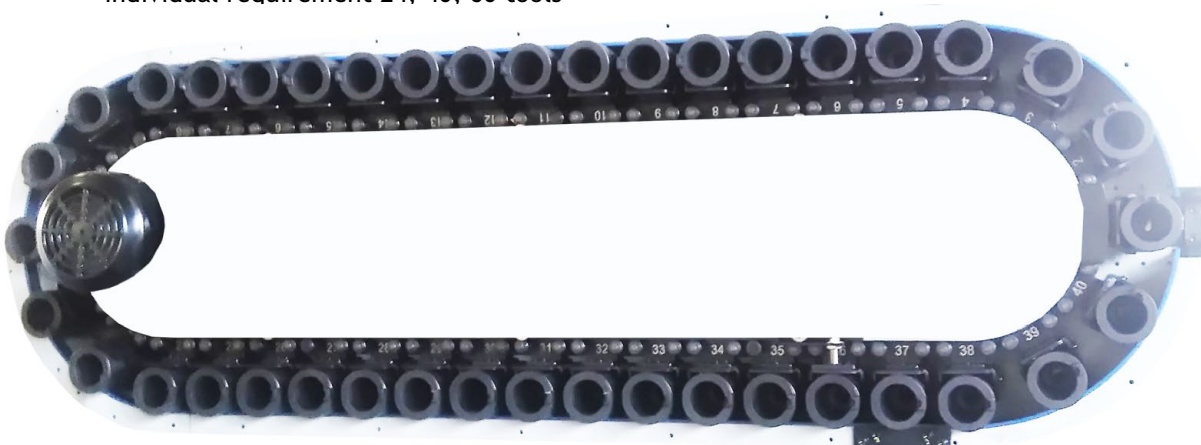
Innovative use of stainless steel Lamella covers - first-in-class ▼



Stable pallet change - pallet supported & located at four points during pallet change ▼



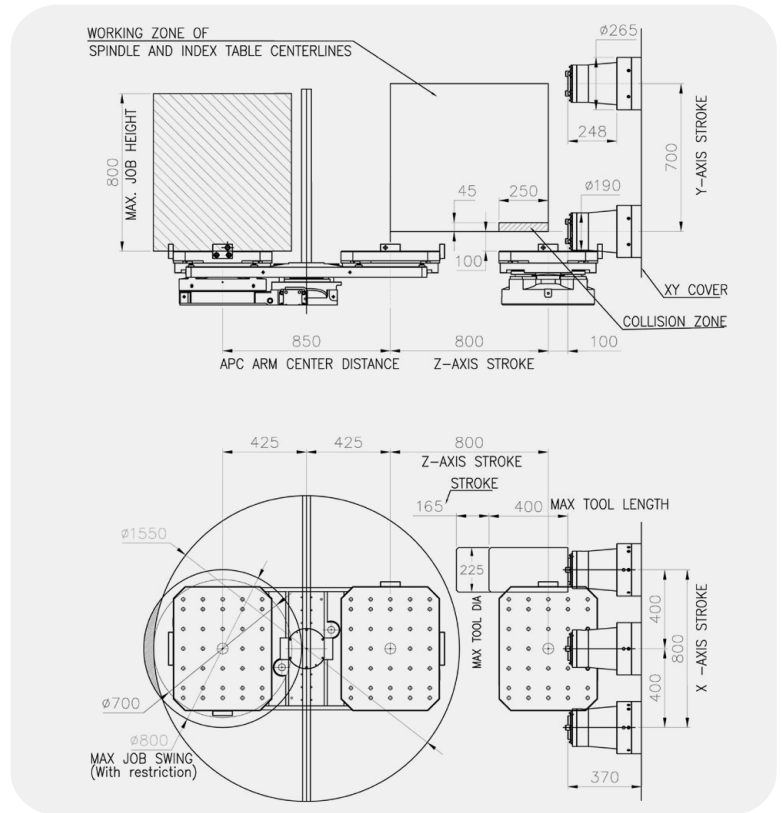
▼ Tool magazine - robust tool changer; tool storage capacity to suit individual requirement 24, 40, 60 tools



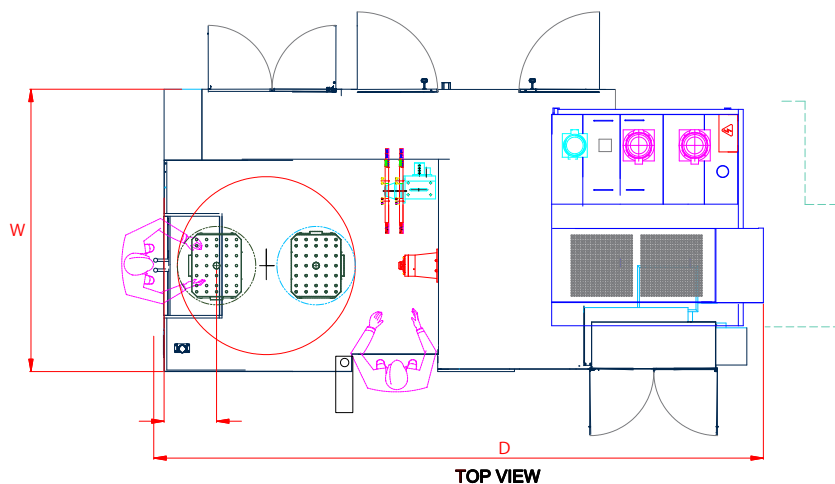
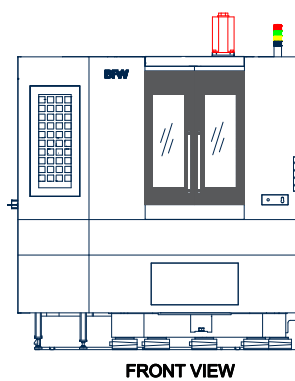
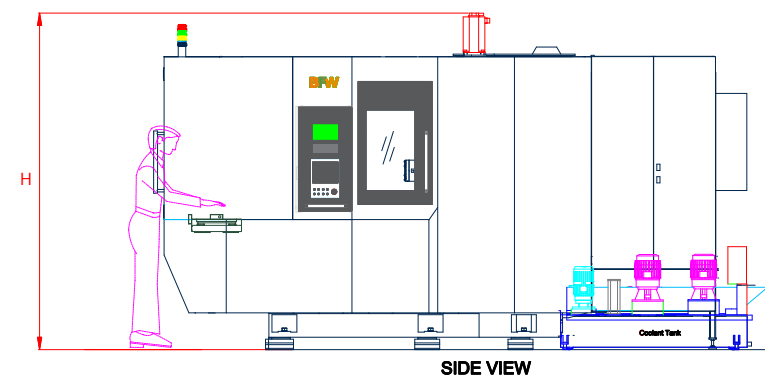
## Job Size



## Stroke Diagram



## Machine Dimensions



		PRIMA 54	PRIMA 55
W	mm	~ 3000	~ 3000
D	mm	~ 5500	~ 5500
H	mm	~ 3100	~ 3100

All dimensions in mm

Standard machine with  
 coolant tank and 24 tools (PRIMA 54)  
 coolant tank and 30 tools (PRIMA 55)

## Technical Specification

Specifications	Unit	PRIMA 54	PRIMA 55
<b>Spindle</b>			
Spindle taper	type	BT 40 (HSK A 63)	BT 50 (HSK A 100)
Spindle power & torque- cont/ int - standard	kW	11/15, 105/191Nm	11/15, 143/286Nm
Spindle power & torque- cont/ int (option 1)	kW	15/18.5, 143/235Nm	15/18.5, 143/235Nm
Spindle power & torque- cont/ int (option 2)	kW	-	11/15, 191/382Nm
Spindle Speed - standard (option)	rpm	6000 (8000)	6000
<b>Axes</b>			
X/Y/Z axes	mm	800/ 700/ 800	800/ 700/ 800
Feed rate	mm/	1 - 10000	1 - 10000
Rapid traverse X/ Y/ Z axes	m/ min	40	40
Pallet top to spindle centre (min./ max)	mm	100 - 800	100 - 800
Pallet top to spindle centre (min./ max)	mm	100 - 900	100 - 900
<b>Index Table/ Rotary Table</b>			
Pallet size	mm	630 x 500	630 x 500
Pallet type		Tapped holes (M16 x 34 nos.)	
Load capacity	kg	500	500
Maximum job size (dia x height)	mm	ø 700 x 800 ht (ø 800 with restriction)	
Index positions Std (Option)	deg	360 x 1deg (720 x 0.5deg)	
Rotary table - option	deg	360,000 x 0.001 deg	
<b>Automatic Tool Changer</b>			
No of Tools - Std (Option1, Option 2)	No	24 (40, 60)	30 (40, 60)
Maximum tool dia with all pockets full	No	75	125 (105 for 30 T Mag.)
Maximum tool dia with adjacent pockets empty	mm	125	225
Maximum tool length	mm	300	400
Tool weight	kg	7	15kg (30 & 40 tools) 25kg (60 tools)
Tool change time	sec	2.2	3.5
Chip to chip time (mm) as per ISO 10791- 9	sec	6.5	8.5
Pull stud		MAS 403 PT 40 - 1	MAS 403 PT 50 - 1
<b>Accuracy as per ISO 230 - 2</b>			
<b>Linear axes</b>			
Positioning A	mm	0.012	0.012
Repeatability R	mm	0.009	0.009
<b>B axis - Index Table</b>			
Positioning A	arc sec	8	8
Repeatability R	arc sec	6	6
<b>B axis - Rotary Table</b>			
Positioning A	arc sec	12	12
Repeatability R	arc sec	9	9
<b>Automatic Pallet Changer</b>		180 deg swing type	180 deg swing type
<b>CNC System</b>		Fanuc Oi MF	Fanuc Oi MF
<b>Installation Data</b>			
Basic weight of machine	kg	~ 11000	~ 12000
Floor Area for Std. Machine W x D	mm	~ 2900 x 5500	~ 3000 x 5500
Total connected load	kVA	~ 45	~ 48
Compressed air	bar	6	6
Power supply		415 V ± 10 % AC, 50 ± 2 % Hz, 3 phase	

### Standard Features

- ▶ Roller type guide-ways for all linear axes
- ▶ Precise ball-screws for all linear axes
- ▶ Electronic counter-balance for the vertical axis
- ▶ Automatic centralised lubrication system
- ▶ AC servo drives for all axes
- ▶ Air blast for spindle taper cleaning
- ▶ Tool clamping through disc springs & de-clamp by hydraulics
- ▶ Basic coolant system with bed wash & flood coolant
- ▶ Lamella covers on linear axes
- ▶ AC unit for electrical cabinet
- ▶ Hydraulic powerpack
- ▶ Spindle taper BT40 (Prima 54) & BT 50 (Prima 55)
- ▶ Belt-driven spindle
- ▶ Tool magazine - 24 tools (prima 54) , 30 tools (Prima 55)
- ▶ Absolute encoders for all axes
- ▶ 8.4" color LCD display
- ▶ Backlash & pitch error compensation
- ▶ Rigid tapping & retract function
- ▶ Simultaneous interpolation upto 4 axes
- ▶ Linear, circular & helical interpolation
- ▶ Polar co-ordinate programming
- ▶ Tool life management
- ▶ Machine alarm diagnostics
- ▶ Overhead shower-wash
- ▶ Energy saving function
- ▶ Operator door safety interlock
- ▶ 3-tier signal tower lamp
- ▶ Machine lamp
- ▶ Coolant gun
- ▶ Automatic pallet changer (rotary type)
- ▶ Fanuc Oi MF with B-series motors & drives
- ▶ Coolant tank with chip tray

### Optional Features

- ▶ Chip conveyor with chip trolley
- ▶ High pressure coolant thru spindle system (16 bar/ 40 bar) with non-consumable filtration system
- ▶ Tool magazine capacity of 40 tools & 60 tools
- ▶ Linear magnetic scales (Guide-way integrated)
- ▶ Thermal compensation sensors for linear axes
- ▶ Continuous rotary table (0.001 deg x 360000)
- ▶ Measuring probe
- ▶ Minimum quantity lubrication
- ▶ Chiller for clean coolant system
- ▶ Mist collector
- ▶ Machine color as per customer requirement
- ▶ Front gauge panel
- ▶ Hydraulic connections for fixture through rotary distributor (top side)

Figures within brackets are optional features



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