

F SERIES NF / HF

High Efficiency Double Column Machining Center



Intelligent 5-face Machining High Efficiency Production

- The rigid beam possesses 1.1m width with stepped structure design, and large span in Y axis benefits to rigidity.
- Y axis adopts 65mm ultra-load guide way not only enhances more than 40% rigidity on higher cutting load but also prolongs the lifetime.
- The position of 3 roller type guide way is symmetric and lateral two rails with large span are symmetric to the center of table load*s gravity. The middle rail and the ballscrew are designed with the minimal span, and aligned to the center of the motion, which achieves the high dynamic straightness in full travel.

Multi-Angel
Machining

DCG, Driving at the Center of Gravity



| Linear Way |



| Enclosed Box Way |



NF Specification | NF-xx23/30 Series

MODEL		Unit	NF-3023/ NF-3030	NF-4023/ NF-4030	NF-5023/ NF-5030	NF-6023/ NF-6030	NF-8023/ NF-8030	NF-10023/ NF-10030	
TRAVEL									
X axis travel		mm	3,100	4,100	5,100	6,100	8,100	10,100	
Y axis travel		mm	2,300 / 3,000						
Z axis travel	Box way / single ballscrew	mm	920 / 1,020(OPT.)						
	Linear way, Enclosed Box Ram/Dual ballscrews	mm	1,000(OPT.) / 1,200(OPT.) / 1,400(OPT.)						
Distance from spindle nose to table	Box way/ single ballscrew(2-step gear)	Z axis=920	mm				150-1,070(Standard column)		100-1,020(Standard column)
		Z axis=1,020	mm				250-1,270(column+200mm)		200-1,220(column+200mm)
	Linear way, Enclosed Box Ram/ Dual ballscrews (2-step gear/Direct-driven)	Z axis=1,000	mm				150-1,150(Standard column)		100-1,100(Standard column)
		Z axis=1,200	mm				150-1,350(column+200mm)		100-1,300(column+200mm)
		Z axis=1,400	mm				150-1,550(column+400mm)		100-1,500(column+400mm)
Distance between columns (port width)		mm	2,400						
TABLE									
Table size		mm	3,000 x 2,050	4,000 x 2,050	5,000 x 2,050	6,000 x 2,050	8,000 x 2,050	10,000 x 2,050	
T-slot(Width x Number x Pitch)		mm	28 x 11 x 200 (150)						
Max. table load		kg/m	13,000	16,000	20,000	22,000	24,000	26,000	
SPINDLE									
Spindle power (cont./ 30 min.)		kW	18.5 / 22(22 / 26 OPT.)(30 / 37 OPT.)						
Spindle speed	Box way / single ballscrew	2-step gear	rpm	4,000 / 6,000(OPT.)					
	Linear way, Enclosed Box Ram/ Dual ballscrews	2-step gear	rpm	4,000(OPT.) / 6,000(OPT.)					
		Direct-driven	rpm	10,000(OPT.)					
Spindle taper		-	BBT-50						
FEED									
Cutting feed rate		mm/min	1-10,000				1-7,000		
Rapid traverse	X/Y(Y+700)	m/min	24 / 20(15)			15 / 20 (15)			
	Z:Box way / single ballscrew	m/min	15						
	Z:Linear way/ Dual ballscrews	m/min	12						
3 axis motor power(FANUC)(Z:Box way / single ballscrew)		kW	7 / 4.5 / 7			9 / 4.5 / 7			
3 axis motor power(FANUC)(Z:Linear way, Enclosed Box Ram/Dual ballscrews)		kW	7 / 4.5 / 4.5*2			9 / 4.5 / 4.5*2			
ACCURACY									
Positioning accuracy (JIS B6333)		mm	±0.008 / Full travel	±0.009 / Full travel			±0.010 / Full travel		
Positioning accuracy (ISO-230-2 & VDI 3441)		mm	P0.015	P0.018			P0.026	P0.028	P0.032
Repeatability (JIS B6333)		mm	±0.003						
Repeatability (ISO-230-2 & VDI 3441)		mm	Ps0.012	Ps0.015			Ps0.020	Ps0.022	Ps0.025
ATC									
ATC type/ capacity	Vertical type tool change	pcs	32 / 40(OPT.) / 60(OPT.)						
	Floor-standing type vertical tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
	Floor-standing type vertical-horizontal tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
Max. tool weight		kg	20						
Tool shank		-	BBT-50						
Pull stud		-	P50T-1						
GENERAL									
Power requirement		kVA	60						
Pneumatic requirement		kg/cm ²	6						
Machine net weight		kg	30,400 / 32,500	35,800 / 37,800	41,100 / 43,200	46,000 / 48,000	59,200 / 61,500	68,300 / 70,600	
Dimensions (LxWxH)	Vertical type tool change	m	11.2 x 6.8 x 4.9	13.2 x 6.8 x 4.9	15.2 x 6.8 x 4.9	17.2 x 6.8 x 4.9	22 x 6.8 x 4.9	26 x 6.8 x 4.9	
	Floor-standing vertical type tool change	m	11.2 x 8.5 x 4.9	13.2 x 8.5 x 4.9	15.2 x 8.5 x 4.9	17.2 x 8.5 x 4.9	22 x 8.5 x 4.9	26 x 8.5 x 4.9	
	Floor-standing vertical-horizontal type tool change	m	11.2 x 9.0 x 5.2	13.2 x 9.0 x 5.2	15.2 x 9.0 x 5.2	17.2 x 9.0 x 5.2	22 x 9.0 x 5.2	26 x 9.0 x 5.2	

* Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

* For details, please refer to Machine Specification.

* The manufacture reserves the right to modify the design, specifications mechanism, etc.

NF Specification | NF-xx26/33 Series

MODEL		Unit	NF-3026/ NF-3033	NF-4026/ NF-4033	NF-5026/ NF-5033	NF-6026/ NF-6033	NF-8026/ NF-8033	NF-10026/ NF-10033	
TRAVEL									
X axis travel		mm	3,100	4,100	5,100	6,100	8,100	10,100	
Y axis travel		mm	2,600 / 3,300						
Z axis travel	Box way / single ballscrew	mm	920 / 1,020(OPT.)						
	Linear way, Endosed Box Ram/Dual ballscrews	mm	1,000(OPT.) / 1,200(OPT.) / 1,400(OPT.)						
Distance from spindle nose to table	Box way/ single ballscrew(2-step gear)	Z axis=920	mm	150-1,070(Standard column)			100-1,020(Standard column)		
		Z axis=1,020	mm	250-1,270(column+200mm)			200-1,220(column+200mm)		
	Linear way, Enclosed Box Ram/ Dual ballscrews (2-step gear/Direct-driven)	Z axis=1,000	mm	150-1,150(Standard column)			100-1,100(Standard column)		
		Z axis=1,200	mm	150-1,350(column+200mm)			100-1,300(column+200mm)		
		Z axis=1,400	mm	150-1,550(column+400mm)			100-1,500(column+400mm)		
Distance between columns (port width)		mm	2,750						
TABLE									
Table size		mm	3,000 x 2,450	4,000 x 2,450	5,000 x 2,450	6,000 x 2,450	8,000 x 2,450	10,000 x 2,450	
T-slot(Width x Number x Pitch)		mm	28 x 13 x 200 (150)						
Max. table load		kg/m	13,000	16,000	20,000	22,000	24,000	26,000	
SPINDLE									
Spindle power(cont./ 30 min.)		kW	18.5 / 22(22 / 26OPT.)(30 / 37OPT.)						
Spindle speed	Box way / single ballscrew	2-step gear	rpm	4,000 / 6,000(OPT.)					
	Linear way, Enclosed Box Ram/ Dual ballscrews	2-step gear	rpm	4,000(OPT.) / 6,000(OPT.)					
		Direct-driven	rpm	10,000(OPT.)					
Spindle taper		-	BBT-50						
FEED									
Cutting feed rate		mm/min	1-10,000				1-7,000		
Rapid traverse	X/Y(Y+700)	m/min	24 / 20(15)			15 / 20 (15)			
	Z:Box way / single ballscrew	m/min	15						
	Z:Linear way/ Dual ballscrews		12						
3 axis motor power(FANUC)(Z.Box way / single ballscrew)		kW	7 / 4.5 / 7		9 / 4.5 / 7				
3 axis motor power(FANUC)(Z.Linear way, Enclosed Box Ram/Dual ballscrews)		kW	7 / 4.5 / 4.5*2		9 / 4.5 / 4.5*2				
ACCURACY									
Positioning accuracy (JIS B6333)		mm	± 0.008 / Full travel	± 0.009 / Full travel			± 0.010 / Full travel		
Positioning accuracy (ISO-230-2 & VDI 3441)		mm	P0.015	P0.018			P0.026	P0.028	P0.032
Repeatability (JIS B6333)		mm	± 0.003						
Repeatability (ISO-230-2 & VDI 3441)		mm	Ps0.012	Ps0.015			Ps0.020	Ps0.022	Ps0.025
ATC									
ATC type/ capacity	Vertical type tool change	pcs	32 / 40(OPT.) / 60(OPT.)						
	Floor-standing type vertical tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
	Floor-standing type vertical-horizontal tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
Max. tool weight		kg	20						
Tool shank		-	BBT-50						
Pull stud		-	P50T-1						
GENERAL									
Power requirement		kVA	60						
Pneumatic requirement		kg/cm ²	6						
Machine net weight		kg	36,400 / 38,400	41,400 / 43,900	46,400 / 48,900	51,000 / 53,900	60,000 / 63,900	69,000 / 73,900	
Dimensions (LxWxH)	Vertical type tool change	m	11.2 x 7.2 x 4.9	13.2 x 7.2 x 4.9	15.2 x 7.2 x 4.9	17.2 x 7.2 x 4.9	22 x 7.2 x 4.9	26 x 7.2 x 4.9	
	Floor-standing vertical type tool change	m	11.2 x 8.8 x 4.9	13.2 x 8.8 x 4.9	15.2 x 8.8 x 4.9	17.2 x 8.8 x 4.9	22 x 8.8 x 4.9	26 x 8.8 x 4.9	
	Floor-standing vertical-horizontal type tool change	m	11.2 x 9.3 x 5.2	13.2 x 9.3 x 5.2	15.2 x 9.3 x 5.2	17.2 x 9.3 x 5.2	22 x 9.3 x 5.2	26 x 9.3 x 5.2	

* Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

* For details, please refer to Machine Specification.

* The manufacture reserves the right to modify the design, specifications mechanism, etc.

NF Specification | NF-xx32/39 Series

MODEL		Unit	NF-3032/ NF-3039	NF-4032/ NF-4039	NF-5032/ NF-5039	NF-6032/ NF-6039	NF-8032/ NF-8039	NF-10032/ NF-10039	
TRAVEL									
X axis travel		mm	3,100	4,100	5,100	6,100	8,100	10,100	
Y axis travel		mm	3,200 / 3,900						
Z axis travel		Box way / single ballscrew	920 / 1,020(OPT.)						
		Linear way, Enclosed Box Ram/Dual ballscrews	1,000(OPT.) / 1,200(OPT.) / 1,400(OPT.)						
Distance from spindle nose to table	Box way/ single ballscrew(2-step gear)	Z axis=920	150-1,070(Standard column)				100-1,020(Standard column)		
		Z axis=1,020	250-1,270(column+200mm)				200-1,220(column+200mm)		
	Linear way, Enclosed Box Ram/ Dual ballscrews (2-step gear/Direct-driven)	Z axis=1,000	150-1,150(Standard column)				100-1,100(Standard column)		
		Z axis=1,200	150-1,350(column+200mm)				100-1,300(column+200mm)		
		Z axis=1,400	150-1,550(column+400mm)				100-1,500(column+400mm)		
Distance between columns (port width)		mm	3,250						
TABLE									
Table size		mm	3,000 x 2,450	4,000 x 2,450	5,000 x 2,450	6,000 x 2,450	8,000 x 2,450	10,000 x 2,450	
T-slot(Width x Number x Pitch)		mm	28 x 11 x 200 (150)						
Max. table load		kg/m	13,000	16,000	20,000	22,000	24,000	26,000	
SPINDLE									
Spindle power(cont./ 30 min.)		kW	18.5 / 22(22 / 26OPT.)(30 / 37OPT.)						
Spindle speed	Box way / single ballscrew	2-step gear	rpm 4,000 / 6,000(OPT.)						
	Linear way, Enclosed Box Ram/ Dual ballscrews	2-step gear	rpm 4,000(OPT.) / 6,000(OPT.)						
		Direct-driven	rpm 10,000(OPT.)						
Spindle taper		-	BBT-50						
FEED									
Cutting feed rate		mm/min	1-10,000				1-7,000		
Rapid traverse	X/Y(Y+700)	m/min	24 / 15 (15)			15 / 15 (15)			
	Z:Box way / single ballscrew	m/min	15						
	Z:Linear way/ Dual ballscrews	m/min	12						
3 axis motor power(FANUC)(Z:Box way / single ballscrew)		kW	7 / 4.5 / 7			9 / 4.5 / 7			
3 axis motor power(FANUC)(Z:Linear way, Enclosed Box Ram/Dual ballscrews)		kW	7 / 4.5 / 4.5*2			9 / 4.5 / 4.5*2			
ACCURACY									
Positioning accuracy (JIS B6333)		mm	±0.008 / Full travel	±0.009 / Full travel			±0.010 / Full travel		
Positioning accuracy (ISO-230-2 & VDI 3441)		mm	P0.015	P0.018			P0.026	P0.028	P0.032
Repeatability (JIS B6333)		mm	±0.003						
Repeatability (ISO-230-2 & VDI 3441)		mm	Ps0.012	Ps0.015			Ps0.020	Ps0.022	Ps0.025
ATC									
ATC type/ capacity	Vertical type tool change	pcs	32 / 40(OPT.) / 60(OPT.)						
	Floor-standing type vertical tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
	Floor-standing type vertical-horizontal tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
Max. tool weight		kg	20						
Tool shank		-	BBT-50						
Pull stud		-	P50T-1						
GENERAL									
Power requirement		kVA	60						
Pneumatic requirement		kg/cm ²	6						
Machine net weight		kg	40,500 / 42,500	44,500 / 48,000	50,500 / 54,000	55,500 / 58,500	64,500 / 68,500	73,500 / 78,500	
Dimensions (LxWxH)	Vertical type tool change	m	11.2 x 7.8 x 4.9	13.2 x 7.8 x 4.9	15.2 x 7.8 x 4.9	17.2 x 7.8 x 4.9	22 x 7.8 x 4.9	26 x 7.8 x 4.9	
	Floor-standing vertical type tool change	m	11.2 x 9.4 x 4.9	13.2 x 9.4 x 4.9	15.2 x 9.4 x 4.9	17.2 x 9.4 x 4.9	22 x 9.4 x 4.9	26 x 9.4 x 4.9	
	Floor-standing vertical-horizontal type tool change	m	11.2 x 10 x 5.2	13.2 x 10 x 5.2	15.2 x 10 x 5.2	17.2 x 10 x 5.2	22 x 10 x 5.2	26 x 10 x 5.2	

* Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m * NF-3239, Y7

* For details, please refer to Machine Specification.

* The manufacture reserves the right to modify the design, specifications mechanism, etc.

HF Specification | HF-xx35/42 Series

MODEL		Unit	HF-4035/ HF-4042	HF-5035/ HF-5042	HF-6035/ HF-6042	HF-8035/ HF-8042	HF-10035/ HF-10042
TRAVEL							
X axis travel		mm	4,100	5,100	6,100	8,100	10,100
Y axis travel		mm	3,500 / 4,200				
Z axis travel	Box way / single ballscrew	mm	920 ; 1,020(OPT.)				
	Linear way, Enclosed Box Ram/Dual ballscrews	mm	1,000(OPT.) ; 1,200(OPT.) ; 1,400(OPT.)				
Distance from spindle nose to table	Box way/ single ballscrew(2-step gear)	Z axis=920	mm	270-1,190(Standard column)			
		Z axis=1,020	mm	170-1,090(Standard column)			
	Linear way, Enclosed Box Ram/ Dual ballscrews (2-step gear/Direct-driven)	Z axis=1,000	mm	270-1,270(Standard column)			
		Z axis=1,200	mm	270-1,470(column+200mm)			
		Z axis=1,400	mm	270-1,670(column+400mm)			
Distance between columns (port width)		mm	3,550				
TABLE							
Table size		mm	4,000 x 3,000	5,000 x 3,000	6,000 x 3,000	8,000 x 3,000	10,000 x 3,000
T-slot(Width x Number x Pitch)		mm	28 x 13 x 250 (150)				
Max. table load		kg/m	20,000	24,000	28,000	32,000	36,000
SPINDLE							
Spindle power(cont./ 30 min.)		kW	22 / 26(30 / 37OPT.)				
Spindle speed	Box way / single ballscrew	2-step gear	rpm	4,000 / 6,000(OPT.)			
	Linear way, Enclosed Box Ram/ Dual ballscrews	2-step gear	rpm	4,000(OPT.) / 6,000(OPT.)			
		Direct-driven	rpm	10,000(OPT.)			
Spindle taper		-	BBT-50				
FEED							
Cutting feed rate		mm/min	1-7,000				
Rapid traverse	X/Y(Y+700)	m/min	24 / 15 (15)	15 / 15 (15)			
	Z:Box way / single ballscrew Z:Linear way/ Dual ballscrews	m/min	15				
	Z:Enclosed Box Ram/Dual ballscrews	m/min	12				
3 axis motor power(FANUC)(Z.Box way / single ballscrew)		kW	9 / 4.5 / 7				
3 axis motor power(FANUC)(Z.Linear way, Enclosed Box Ram/Dual ballscrews)		kW	9 / 4.5 / 4.5*2				
ACCURACY							
Positioning accuracy (JIS B6333)		mm	±0.013/ Full travel			±0.015/ Full travel	
Positioning accuracy (ISO-230-2 & VDI 3441)		mm	P0.040		P0.045		P0.050
Repeatability (JIS B6333)		mm	±0.003				
Repeatability (ISO-230-2 & VDI 3441)		mm	Ps0.028		Ps0.035		Ps0.040
ATC							
ATC type/ capacity	Vertical type tool change	pcs	32 / 40(OPT.) / 60(OPT.)				
	Floor-standing type vertical tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)				
	Floor-standing type vertical-horizontal tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)				
Max. tool weight		kg	20				
Tool shank		-	BBT-50				
Pull stud		-	P50T-1				
GENERAL							
Power requirement		kVA	65				
Pneumatic requirement		kg/cm ²	6				
Machine net weight		kg	57,000 / 59,000	63,000 / 65,000	69,000 / 71,000	83,000 / 85,000	99,000 / 100,000
Dimensions (LxWxH)	Vertical type tool change	m	14 x 8.2 x 5.1	16 x 8.2 x 5.1	18 x 8.2 x 5.1	23 x 8.2 x 5.1	28 x 8.2 x 5.1
	Floor-standing vertical type tool change	m	14 x 9.4 x 5.1	16 x 9.4 x 5.1	18 x 9.4 x 5.1	23 x 9.4 x 5.1	28 x 9.4 x 5.1
	Floor-standing vertical-horizontal type tool change	m	14 x 10 x 5.2	16 x 10 x 5.2	18 x 10 x 5.2	23 x 10 x 5.2	28 x 10 x 5.2

* Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

* For details, please refer to Machine Specification.

* The manufacture reserves the right to modify the design, specifications mechanism, etc.

HF Specification | HF-xx40/47 Series

MODEL		Unit	HF-4040/ HF-4047	HF-5040/ HF-5047	HF-6040/ HF-6047	HF-8040/ HF-8047	HF-10040/ HF-10047	
TRAVEL								
X axis travel		mm	4,100	5,100	6,100	8,100	10,100	
Y axis travel		mm	4,000 / 4,700					
Z axis travel	Box way / single ballscrew	mm	920 ; 1,020(OPT.)					
	Linear way, Enclosed Box Ram/Dual ballscrews	mm	1,000(OPT.) ; 1,200(OPT.) ; 1,400(OPT.)					
Distance from spindle nose to table	Box way/ single ballscrew(2-step gear)	Z axis=920	mm					270-1,190(Standard column)
		Z axis=1,020	mm					170-1,090(Standard column)
	Linear way, Enclosed Box Ram/ Dual ballscrews (2-step gear/Direct-driven)	Z axis=1,000	mm					270-1,270(Standard column)
		Z axis=1,200	mm					270-1,470(column+200mm)
		Z axis=1,400	mm					270-1,670(column+400mm)
Distance between columns (port width)		mm	4,050					
TABLE								
Table size		mm	4,000 x 3,500	5,000 x 3,500	6,000 x 3,500	8,000 x 3,500	10,000 x 3,500	
T-slot(Width x Number x Pitch)		mm	28 x 15 x 250 (150)					
Max. table load		kg/m	20,000	24,000	28,000	32,000	36,000	
SPINDLE								
Spindle power(cont./ 30 min.)		kW	22 / 26(30 / 37OPT.)					
Spindle speed	Box way / single ballscrew	2-step gear	rpm		4,000 / 6,000(OPT.)			
	Linear way, Enclosed Box Ram/ Dual ballscrews	2-step gear	rpm		4,000(OPT.) / 6,000(OPT.)			
		Direct-driven	rpm		10,000(OPT.)			
Spindle taper		-	BBT-50					
FEED								
Cutting feed rate		mm/min	1-7,000					
Rapid traverse	X/Y(Y+700)	m/min	24 / 15 (15)	15 / 15 (15)				
	Z:Box way / single ballscrew Z:Linear way/ Dual ballscrews	m/min	15					
	Z:Enclosed Box Ram/Dual ballscrews	m/min	12					
3 axis motor power(FANUC)(Z.Box way / single ballscrew)		kW	9 / 4.5 / 7					
3 axis motor power(FANUC)(Z:Linear way, Enclosed Box Ram/Dual ballscrews)		kW	9 / 4.5 / 4.5*2					
ACCURACY								
Positioning accuracy (JIS B6333)		mm	±0.013/ Full travel			±0.015/ Full travel		
Positioning accuracy (ISO-230-2 & VDI 3441)		mm	P0.040		P0.045		P0.050	
Repeatability (JIS B6333)		mm	±0.003					
Repeatability (ISO-230-2 & VDI 3441)		mm	Ps0.028		Ps0.035		Ps0.040	
ATC								
ATC type/ capacity	Vertical type tool change	pcs	32 / 40(OPT.) / 60(OPT.)					
	Floor-standing type vertical tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)					
	Floor-standing type vertical-horizontal tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)					
Max. tool weight		kg	20					
Tool shank		-	BBT-50					
Pull stud		-	P50T-1					
GENERAL								
Power requirement		kVA	65					
Pneumatic requirement		kg/cm ²	6					
Machine net weight		kg	58,000 / 60,000	64,000 / 66,000	70,000 / 72,000	84,000 / 86,000	100,000 / 101,000	
Dimensions (LxWxH)	Vertical type tool change	m	14 x 8.7 x 5.1	16 x 8.7 x 5.1	18 x 8.7 x 5.1	24 x 8.7 x 5.1	28.5 x 8.7 x 5.1	
	Floor-standing vertical type tool change	m	14 x 10 x 5.1	16 x 10 x 5.1	18 x 10 x 5.1	24 x 10 x 5.1	28.5 x 10 x 5.1	
	Floor-standing vertical-horizontal type tool change	m	14 x 10.5 x 5.2	16 x 10.5 x 5.2	18 x 10.5 x 5.2	24 x 10.5 x 5.2	28.5 x 10.5 x 5.2	

* Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

* For details, please refer to Machine Specification.

* The manufacture reserves the right to modify the design, specifications mechanism, etc.

NF / HF Standard & Optional Accessories

Standard

- 1 FANUC 0iMF PLUS controller
- 2 Box way 4,000rpm 2-step gear type spindle
- 3 Z axis travel 920mm (Box way)
- 4 Spindle oil cooling system
- 5 Air blast through spindle
- 6 Footswitch for tool clamping
- 7 XYZ-axis absolute pulse coder feedback
- 8 XYZ-axis travel hard limits protection
- 9 Twin hydraulic cylinders with pressured Nitrogen assistance counterweight system
- 10 X, Y axis ballscrew support device (X axis $\geq 4m$, Y axis $\geq 3m$)
- 11 Cutting fluid cooling system
- 12 Centralized auto lubrication system
- 13 Independent lubrication oil collector
- 14 Vertical type tool magazine 32 tools
- 15 Enclosed sheet metal guard without roof (NF series X axis $\leq 6m$)
- 16 Four piece sheet metal guard (NF series X axis $\geq 8m$) (all HF series)
- 17 Swiveling arm type operation panel
- 18 Movable manual pulse generator
- 19 Screw type chip conveyor on table sides
- 20 Caterpillar type chip conveyor / Water tank
- 21 Heat exchanger for electrical cabinet
- 22 Wash gun and pneumatic interface
- 23 Vision Wide FX graphical user interface
- 24 Auto power off function
- 25 RJ45 interface
- 26 Working lamp
- 27 Operation cycle finish and alarm light
- 28 Spindle overloading protected by software
- 29 Foundation pads and bolts kits
- 30 Adjustment tool and tool kits
- 31 Technical manuals (operation, maintenance manual and circuit diagram)

Optional

- 1 FANUC 31 iB / HEIDENHAIN TNC640 / SIEMENS 828D / SIEMENS ONE / MITSUBISHI M80 TypeA / MITSUBISHI M830
- 2 Box way :6,000rpm 2-step gear type spindle
- 3 Linear way/Enclosed Box Ram 4,000/6,000rpm 2-step gear type spindle 10,000rpm direct driven type spindle
- 4 Z axis travel 1,020mm (Box way)
- 5 Z axis travel 1000/1200/1400mm(Linear way/Enclosed Box Ram)
- 6 Column heighten 200/400/600/800mm
- 7 Spindle ring cutting coolant device (for no head attachment)
- 8 Coolant through spindle system 20/70 bar
- 9 The interface of coolant through spindle
- 10 Coolant through tool holder interface
- 11 Switch for tool clamping
- 12 Spindle and structure temperature thermal compensation system
- 13 XYZ axis linear scale feedback
- 14 Oil skimmer
- 15 Oil mist cooling device
- 16 Oil mist recycle device
- 17 Vertical type tool magazine 40/60 tools
- 18 Floor-standing vertical type tool magazine 32/40/60 tools
- 19 Floor-standing vertical-horizontal type tool magazine 32/40/60 tools
- 20 Four piece sheet metal guard (NF series X axis $\leq 6m$)
- 21 Enclosed sheet metal guard without roof (NF series X axis $\geq 8m$) (all HF series)
- 22 Enclosed sheet metal guard with roof (NF series X axis $\leq 6m$) (not for NF-xx32/39 and HF series)
- 23 3-axis independent manual pulse generator (only for FANUC)
- 24 Wireless remote control manual pulse generator
- 25 Helical bladed screw conveyor on table sides
- 26 Chip cart
- 27 Air conditioning for electrical cabinet
- 28 Auto measurement system
- 29 Rotary table
- 30 Sub working table
- 31 Interface reserved for fourth axis
- 32 Transformer
- 33 Auto warm up
- 34 Tool axis retract function at power failure

Optional accessories for auto head attachments

- 1 Auto AC 90 degree angular head/ AC 2 axis head/ AC extended head
- 2 Auto AC milling head/ small head/ customized head attachment
- 3 Floor-standing vertical-horizontal type tool magazine 32/40/60 tools (For NF-xx30/33/39, HF-xx42/47 series)
- 4 Manual swiveling arm type head bracket on operation side(one head attachment)
- 5 Auto swiveling arm type head bracket on operation side(one head attachment, one cover)
- 6 Multi-heads magazine (For NF-xx30/33/39, HF-xx42/47 series)
- 7 Auto AC 90 degree angular head/ AC 2 axis head/ AC extended head offered the CTS system

※For the specification of each model please contact our sales representatives