



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.

DCG, Driving at the Center of Gravity







Enclosed Box Way





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									<u>'</u>
(axis trave)			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 balls	screw	mm			920 / 1,0	20(OPT.)		
L axis il avei	Linear way, Enclosed Box Ram/Dual ballscrews		mm	1,000(OPT.) / 1,200(OPT.) / 1,400(OPT.)					
	Box way/ single	Z axis=920	mm		150-1,070(Sta	100-1,020(Standard column)			
Distance	ballscrew(2-step gear)	Z axis=1,020	mm		250-1,270(col	200-1,220(column+200mm)			
from spindle nose to table	Linear way,	Z axis=1,000	mm		150-1,150(Sta	100-1,100(Sta	indard column)		
	Enclosed Box Ram/ Dual ballscrews	Z axis=1,200	mm		150-1,350(col	100-1,300(co	lumn+200mm)		
	(2-step gear/Direct-driven)	Z axis=1,400	mm		150-1,550(col	umn+400mm)		100-1,500(co	lumn+400mm)
Distance bet	ce between columns (port width)		mm		, ,	2,4	100	, (,
ABLE	· ·	,				۷, ۳			
able 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 2,05
	x Number x Pitch)		mm	5,555 A 2,000	1,000 X 2,000		200 (150)	5,550 X 2,000	10,000 x 2,00
Max. table lo	· · · · · · · · · · · · · · · · · · ·		kg/m	13,000	16,000	20,000	22,000	24,000	26.000
SPINDLE			119/111	10,000	10,000	20,000	22,000	24,000	20,000
	ver (cont./ 30 min.)		kW			18 5 / 22/22 / 26 0	PT.)(30 / 37 OPT.)		
philais how	1	2 oton sees				•			
Spindle	Box way / single ballscrew Linear way,	2-step gear	rpm				,000(OPT.)		
peed	Enclosed Box Ram/	2-step gear	rpm	4,000(OPT.) / 6,000(OPT.)					
No to all a days a	Dual ballscrews	Direct-driven	rpm				O(OPT.)		
Spindle tape	er 		-			ВВ	Г-50		
EED								I	
Cutting feed			mm/min		1-10	1-7,000			
	X/Y(Y+700)		m/min	24 / 2	20(15)		15 / 2	0 (15)	
Rapid raverse	Z:Box way / single ballscrew Z:Linear way/ Dual ballscrews		m/min			1	5		
	Z:Enclosed Box Ram/[Dual ballscrews	m/min			1	2		
3 axis motor p	power(FANUC)(Z:Box way / single balls	crew)	kW	7 / 4.5 / 7			9 / 4.5 / 7		
3 axis motor power(FANUC)(Z:Linear way, Enclosed Box Ram/Dual ballscrews				7/4.5/4.5*2 9/4.5/4.5*2					
3 axis motor p	power(FANUC)(Z:Linear way, Enclosed	Box Ram/Dual ballscrews)	kW	1 / 4.5 / 4.5 2			9 / 4.5 / 4.5"2		
	1 // 2	Box Ram/Dual ballscrews)	kW	7 / 4.5 / 4.5 2			9 / 4.5 / 4.5 2		
ACCURACY	1 // 2	Box Ram/Dual ballscrews)	kW	± 0.008 / Full travel	± 0.009 /	Full travel	974.574.5"2	±0.010 / Full trave	I
ACCURACY Positioning a	Y	,			±0.009/		974.574.5°2	±0.010 / Full trave	P0.032
ACCURACY Positioning a	couracy (JIS B6333)	,	mm	± 0.008 / Full travel)18			
ACCURACY Positioning a Positioning a Repeatability	Accuracy (JIS B6333) accuracy (ISO-230-2 &	VDI 3441)	mm mm	±0.008 / Full travel P0.015	P0.0)18 ±0	P0.026	P0.028	P0.032
ACCURACY Positioning a Positioning a Repeatability Repeatability	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333)	VDI 3441)	mm mm mm	± 0.008 / Full travel)18 ±0	P0.026		
ACCURACY Positioning a Positioning a Repeatability Repeatability	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333)	VDI 3441)	mm mm mm	±0.008 / Full travel P0.015	P0.0	±0 015	P0.026	P0.028	P0.032
ACCURACY Positioning a Positioning a Repeatability ATC ATC type/	y (JIS B6333) accuracy (JSO-230-2 & y (JIS B6333) y (JIS B6333) y (ISO-230-2 & VDI 344	VDI 3441)	mm mm mm mm	±0.008 / Full travel P0.015	P0.0	118 ±0 015 32 / 40(OPT	P0.026 .003 Ps0.020	P0.028	P0.032
ACCURACY Positioning a Positioning a Repeatability ATC ATC type/	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344) Vertical type tool char Floor-standing type vertical to	VDI 3441) 11) rige di change	mm mm mm mm	±0.008 / Full travel P0.015	P0.0	018 ± 0 015 32 / 40(OPT 32(OPT.) / 40(OPT.)	P0.026 .003 Ps0.020	P0.028	P0.032
Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical-huma	VDI 3441) 11) rige di change	mm mm mm mm pcs pcs pcs	±0.008 / Full travel P0.015	P0.0	018 ±0 015 32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C	P0.026 .003 Ps0.020) / 60(OPT.) DPT.) / 60(OPT.)	P0.028	P0.032
Positioning a Positioning a Repeatability Repeatability ATC ATC type/ Lapaciry	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical-huma	VDI 3441) 11) rige di change	mm mm mm pcs pcs	±0.008 / Full travel P0.015	P0.0	018 ±0 015 32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C	P0.026 .003 Ps0.020 .) / 60(OPT.) DPT.) / 60(OPT.)	P0.028	P0.032
ACCURACY Positioning a Repeatability Repeatability ATC ATC type/ apaciry Max. tool we Tool shank	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical-huma	VDI 3441) 11) rige di change	mm mm mm mm pcs pcs pcs kg	±0.008 / Full travel P0.015	P0.0	32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C 32(OPT.) / BB	P0.026 .003 Ps0.020 .)/60(OPT.) OPT.)/60(OPT.) OPT.)/60(OPT.)	P0.028	P0.032
ACCURACY Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we Tool shank Pull stud	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical to Floor-standing type vertical-human from the standing type vertical-huma	VDI 3441) 11) rige di change	mm mm mm mm pcs pcs pcs kg -	±0.008 / Full travel P0.015	P0.0	32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C 32(OPT.) / BB	P0.026 .003 Ps0.020 .) / 60(OPT.) DPT.) / 60(OPT.)	P0.028	P0.032
Positioning a Positioning a Repeatability ATC ATC type/capacity Max. tool we Tool shank Pull stud GENERAL	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hot sight	VDI 3441) 11) rige di change	mm mm mm mm pcs pcs pcs kg -	±0.008 / Full travel P0.015	P0.0	32 / 40(OPT) 32(OPT.) / 40(C 32(OPT.) / 40(C BB	P0.026 .003 Ps0.020 .)/60(OPT.) OPT.)/60(OPT.) OPT.)/60(OPT.)	P0.028	P0.032
Positioning a Positioning a Positioning a Repeatability Repeatability ATC ATC type/ eapaciry Max. tool we Tool shank Pull stud GENERAL Power requir	curacy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344) Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-holidate in the second control of	VDI 3441) 11) rige di change	mm mm mm mm pcs pcs pcs kg	±0.008 / Full travel P0.015	P0.0	32 / 40(OPT) 32(OPT.) / 40(C 32(OPT.) / 40(C BB'	P0.026 .003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.) OT-1	P0.028	P0.032
Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we Fool shank Pull stud GENERAL Power requir	cocuracy (JIS B6333) accuracy (ISO-230-2 & 'y (JIS B6333) y (ISO-230-2 & VDI 344) Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hosight	VDI 3441) 11) rige di change	mm mm mm mm pcs pcs pcs kg kVA kg/cm²	±0.008 / Full travel P0.015 Ps0.012	P0.0	32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C 2 BB' P5(P0.026 .003 Ps0.020) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.)	P0.028	P0.032
Power requir	accuracy (JIS B6333) accuracy (ISO-230-2 & ' y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-ho sight rement requirement t weight	VDI 3441) 1) rige ol change orizontal tool change	mm mm mm mm pcs pcs pcs kg kVA kg/cm² kg	±0.008 / Full travel P0.015 Ps0.012 30,400 / 32,500	Ps0. Ps0. 35,800 / 37,800	118 ±0 1015 32 / 40(OPT) 32(OPT.) / 40(C) 32(OPT.) / 40(C) 2 BB' P5(P0.026 .003 Ps0.020) / 60(OPT.)) / 60(OPT.) 	P0.028 Ps0.022 59,200 / 61,500	P0.032 Ps0.025
ACCURACY Positioning a Positioning a Repeatability	accuracy (JIS B6333) accuracy (ISO-230-2 & ' y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-ho sight rement requirement t weight Vertical type tool char	VDI 3441) 1) nge ol change orizontal tool change	mm mm mm mm pcs pcs pcs kg kVA kg/cm²	±0.008 / Full travel P0.015 Ps0.012	P0.0	32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C 2 BB' P5(P0.026 .003 Ps0.020) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.)	P0.028	P0.032

 $^{^{\}ast}$ 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.



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	I		mm	2,600 / 3,300						
Z axis travel	Box way / single balls	screw	mm			920 / 1,0	20(OPT.)			
L axis traver	Linear way, Enclosed Box Ram/Dual ballscrews		mm	1,000(OPT.) / 1,200(OPT.) / 1,400(OPT.)						
	Box way/ single Z axis=920		mm	150-1,070(Standard column) 100-1,020(Standard column						
Distance from spindle nose to table	ballscrew(2-step gear)	Z axis=1,020	mm		250-1,270(col	200-1,220(column+200mm)				
	Linear way,	Z axis=1,000	mm		150-1,150(Sta	100-1,100(Sta	andard column)			
	Enclosed Box Ram/ Dual ballscrews	Z axis=1,200	mm		150-1,350(col	100-1,300(co	lumn+200mm)			
	(2-step gear/Direct-driven)	Z axis=1,400	mm		150-1,550(col	umn+400mm)		100-1,500(co	lumn+400mm)	
Distance bet	ce between columns (port width)		mm			2,7	50		,	
ΓABLE										
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 2,45	
 Γ-slot(Width	x Number x Pitch)		mm		, ,	28 x 13 x		1	<u> </u>	
Max. table lo			kg/m	13,000	16,000	20,000	22,000	24,000	26,000	
SPINDLE			<u> </u>	,	1,	,	,	,		
	ver(cont./ 30 min.)		kW			18.5 / 22(22 / 260	PT.)(30 / 370PT.)			
' '	Box way / single ballscrew	2-step gear	rpm			4,000 / 6,	,,,			
Spindle	Linear way,	7 0 1 0				4,000(OPT.)	, ,			
speed	Enclosed Box Ram/ Dual ballscrews	Direct-driven	rpm			10,000				
Spindle tape		Biloot dilivoir	-			BB1				
EED	,, , , , , , , , , , , , , , , , , , ,									
Cutting feed	rate		mm/min		1-10	000		1.7	000	
Juling 1000	X/Y(Y+700)		m/min	24.12		,000	15 / 0	1-7,000		
) i - i	Z:Box way / single ba	llcorow		24 / 2	.0(13)		13 / 2	20 (15)		
Rapid raverse	Z:Linear way/ Dual ba		m/min			1	5			
	Z:Enclosed Box Ram/I	Dual ballscrews	m/min			1	2			
3 axis motor p	power(FANUC)(Z:Box way / single balls	crew)	kW	7 / 4.5 / 7			9 / 4.5 / 7			
3 axis motor power(FANUC)(Z:Linear way, Enclosed Box Ram/Dual ballscrews)				7/4.5/4.5*2 9/4.5/4.5*2						
3 axis motor p	power(FANUC)(Z:Linear way, Enclosed	Box Ram/Dual ballscrews)	kW	7 / 4.5 / 4.5 2			9 / 4.5 / 4.5*2			
<u> </u>		Box Ram/Dual ballscrews)	kW	/ / 4.5 / 4.5 ~ 2			9 / 4.5 / 4.5*2			
ACCURACY		Box Ram/Dual ballscrews)	kW	± 0.008 / Full travel	±0.009/	Full travel	9 / 4.5 / 4.5*2	±0.010 / Full trave	I	
ACCURACY Positioning a	/	,			±0.009/		9 / 4.5 / 4.5*2 P0.026	±0.010 / Full trave	P0.032	
ACCURACY Positioning a	couracy (JIS B6333)	,	mm	± 0.008 / Full travel			P0.026			
ACCURACY Positioning a Positioning a Repeatability	Y accuracy (JIS B6333) accuracy (ISO-230-2 & '	VDI 3441)	mm mm	± 0.008 / Full travel)18 ± 0.	P0.026			
ACCURACY Positioning a Positioning a Repeatability Repeatability	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333)	VDI 3441)	mm mm mm	± 0.008 / Full travel P0.015	P0.0)18 ± 0.	P0.026 003	P0.028	P0.032	
ACCURACY Positioning a Positioning a Repeatability Repeatability	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333)	VDI 3441)	mm mm mm	± 0.008 / Full travel P0.015	P0.0	±0.	P0.026 003	P0.028	P0.032	
ACCURACY Positioning a Positioning a Repeatability ATC ATC type/	y (JIS B6333) accuracy (JIS B6333) accuracy (ISO-230-2 & VDI 344) y (ISO-230-2 & VDI 344)	VDI 3441)	mm mm mm mm	± 0.008 / Full travel P0.015	P0.0	018 ±0. 015 32 / 40(OPT	P0.026 003 Ps0.020	P0.028	P0.032	
ACCURACY Positioning a Positioning a Repeatability ATC ATC type/	accuracy (JIS B6333) accuracy (ISO-230-2 & V y (JIS B6333) y (ISO-230-2 & VDI 344) Vertical type tool char	VDI 3441) 1) nge ol change	mm mm mm mm	± 0.008 / Full travel P0.015	P0.0	118 ± 0.015 32 / 40(OPT 32(OPT.) / 40(C	P0.026 003 Ps0.020	P0.028	P0.032	
Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hoc	VDI 3441) 1) nge ol change	mm mm mm pcs pcs	± 0.008 / Full travel P0.015	P0.0	32 / 40(OPT. 32(OPT.) / 40(C	P0.026 003 Ps0.020 .) / 60(OPT.)	P0.028	P0.032	
Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hoc	VDI 3441) 1) nge ol change	mm mm mm mm pcs pcs pcs	± 0.008 / Full travel P0.015	P0.0	32 / 40(OPT. 32(OPT.) / 40(C	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.)	P0.028	P0.032	
Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we Fool shank	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hoc	VDI 3441) 1) nge ol change	mm mm mm mm pcs pcs pcs kg	± 0.008 / Full travel P0.015	P0.0	118 ± 0.015 32 / 40(OPT 32(OPT.) / 40(O 32(OPT.) / 40(C 2 BB	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.)	P0.028	P0.032	
Positioning a Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we Fool shank Pull stud	accuracy (JIS B6333) accuracy (ISO-230-2 & y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hoc	VDI 3441) 1) nge ol change	mm mm mm mm pcs pcs pcs kg -	± 0.008 / Full travel P0.015	P0.0	118 ± 0.015 32 / 40(OPT 32(OPT.) / 40(O 32(OPT.) / 40(C 2 BB	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.)	P0.028	P0.032	
Positioning a Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we Fool shank Pull stud GENERAL	accuracy (JIS B6333) accuracy (ISO-230-2 & ' y (JIS B6333) y (ISO-230-2 & VDI 344) Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-hoeight	VDI 3441) 1) nge ol change	mm mm mm mm pcs pcs pcs kg -	± 0.008 / Full travel P0.015	P0.0	32 / 40(OPT) 32(OPT.) / 40(C 32(OPT.) / 40(C 2 BB	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.)	P0.028	P0.032	
Positioning a Positioning a Repeatability Repeatability ATC ATC type/capaciry Max. tool we Fool shank Pull stud GENERAL Power require	Accuracy (JIS B6333) Accuracy (ISO-230-2 & 'y (JIS B6333) Accuracy (ISO-230-2 & VDI 344) Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-to eight	VDI 3441) 1) nge ol change	mm mm mm mm pcs pcs pcs kg	± 0.008 / Full travel P0.015	P0.0	32 / 40(OPT) 32(OPT.) / 40(C) 32(OPT.) / 40(C) 2 BB ^T P50	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) 00 F-50 DT-1	P0.028	P0.032	
Power require	accuracy (JIS B6333) accuracy (ISO-230-2 & ' y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-ho sight	VDI 3441) 1) nge ol change	mm mm mm mm pcs pcs pcs kg kVA	± 0.008 / Full travel P0.015	P0.0	32 / 40(OPT) 32(OPT.) / 40(C) 32(OPT.) / 40(C) 2 BB ^T P50	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.) 0 0 0 0 0	P0.028	P0.032	
ACCURACY Positioning a Positioning a Repeatability Repeatability ATC ATC type/ capaciry Max. tool we Tool shank Pull stud GENERAL Power requir Pneumatic r Machine net	accuracy (JIS B6333) accuracy (ISO-230-2 & ' y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-ho sight rement requirement t weight Vertical type tool char	VDI 3441) 1) nge ol change orizontal tool change	mm mm mm mm pcs pcs pcs kg kVA kg/cm²	±0.008 / Full travel P0.015 Ps0.012	P0.0	32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C 2 BBT P5C	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) OPT.) / 60(OPT.) OIT-1	Ps0.022 Ps0.022 60,000 / 63,900	Ps0.025 Ps0.025	
ACCURACY Positioning a Positioning a Repeatability	accuracy (JIS B6333) accuracy (ISO-230-2 & ' y (JIS B6333) y (ISO-230-2 & VDI 344 Vertical type tool char Floor-standing type vertical to Floor-standing type vertical-ho sight rement requirement t weight Vertical type tool char	VDI 3441) 1) 1) 1) 1) 1) 1) 1) 1) 1)	mm mm mm mm pcs pcs pcs kg kVA kg/cm² kg	±0.008 / Full travel P0.015 Ps0.012 36,400 / 38,400	Pso. Pso. 41,400 / 43,900	118 ± 0. 1015 32 / 40(OPT 32(OPT.) / 40(C 32(OPT.) / 40(C 2 BB* P5C 6 46,400 / 48,900	P0.026 003 Ps0.020 .) / 60(OPT.) OPT.) / 60(OPT.) 0 0 0 0 0 1-50 0 0 51,000 / 53,900	P0.028	P0.032	

 $^{^{\}ast}$ Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

 $[\]mbox{\ensuremath{^{*}}}\xspace$ For details, please refer to Machine Specification.

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



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 avia traval Box way / single ballscrew		screw	mm			920 / 1,0	20(OPT.)			
Z axis travel	Linear way, Enclosed Box Ram/Dual ballscrews		mm	1,000(OPT.) / 1,200(OPT.) / 1,400(OPT.)						
	Box way/ single Z axis=920		mm		150-1,070(Standard column) 100-1,020(Standard column)					
Distance from spindle nose to table	ballscrew(2-step gear) Linear way,	Z axis=1,020	mm		250-1,270(col	200-1,220(co	200-1,220(column+200mm)			
		Z axis=1,000	mm		ndard column)					
	Enclosed Box Ram/	Z axis=1,200	mm		150-1,150(Sta 150-1,350(col			, ,	umn+200mm)	
	Dual ballscrews (2-step gear/Direct-driven)		mm		150-1,550(col	. ,	umn+400mm)			
Distance bety	ween columns (port wid		mm		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3,2	250	100 1,000(00		
TABLE	(1	,				0,2				
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	
	x Number x Pitch)		mm	3,000 X 2,430	4,000 X 2,400		200 (150)	0,000 X 2,430	10,000 X 2,430	
Max. table lo			kg/m	13,000	16,000	20,000	22,000	24,000	26,000	
SPINDLE	uu		Ng/III	13,000	10,000	20,000	22,000	24,000	20,000	
	er(cont./ 30 min.)		kW			10 5 / 20/20 / 200	DT \/20 / 27ODT \			
opinate powe	1	0 atam					PT.)(30 / 37OPT.)			
Spindle	Box way / single ballscrew Linear way,	2-step gear	rpm				,000(OPT.)			
speed	Enclosed Box Ram/	2-step gear	rpm			, , ,	/ 6,000(OPT.)			
0: ".	Dual ballscrews	Direct-driven	rpm				O(OPT.)			
Spindle taper	•		-			ВВ	Γ-50			
FEED			, ,					T		
Cutting feed			mm/min		1-10	1-7,000				
	X/Y(Y+700)		m/min	24 / 15	5 (15)		15 / 1	15 (15)		
Rapid traverse	Z:Box way / single ba Z:Linear way/ Dual ba		m/min			1	5			
	Z:Enclosed Box Ram/[Dual ballscrews	m/min			1	2			
3 axis motor p	ower(FANUC)(Z:Box way / single balls	crew)	kW	7 / 4.5 / 7			9 / 4.5 / 7			
3 axis motor p	ower(FANUC)(Z:Linear way, Enclosed	Box Ram/Dual ballscrews)	kW	7 / 4.5 / 4.5*2			9 / 4.5 / 4.5*2			
ACCURACY										
Positioning a	ccuracy (JIS B6333)		mm	±0.008 / Full travel	±0.009/	Full travel		± 0.010 / Full trave		
Positioning a	ccuracy (ISO-230-2 &	VDI 3441)	mm	P0.015	P0.018 P0.026		P0.026	P0.028	P0.032	
Repeatability	(JIS B6333)		mm		±0.003					
Repeatability	(ISO-230-2 & VDI 344	-1)	mm	Ps0.012	Ps0.	015	Ps0.020	Ps0.022	Ps0.025	
ATC										
ATOL	Vertical type tool cha	nge	pcs			32 / 40(OPT	T.) / 60(OPT.)			
ATC type/ capaciry	Floor-standing type vertical to	ool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
0	Floor-standing type vertical-horizontal tool change		pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
Max. tool wei	ight		kg			2	20			
Tool shank	<u>-</u>		-	BBT-50						
Pull stud			-			P50	DT-1			
GENERAL										
Power require	ement		kVA			6	60			
Pneumatic re			kg/cm ²				6			
Machine net	•		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	
	Vertical type tool char	nae	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	
Dimensions	Floor-standing vertical type to		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	
(LxWxH)	Floor-standing vertical 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	
		17 po 1001 on on 190								

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

^{*} NF-3239, Y7

 $[\]ensuremath{^*}$ For details, please refer to Machine Specification.

 $[\]mbox{\ensuremath{^{\star}}}$ The manufacture reserves the right to modify the design, specifications mechanism, etc.



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							
7!- 4	Box way / single ballscrew		mm	mm 920 ; 1,020(OPT.)						
Z axis travel	Linear way, Enclosed Box Ram/Dual ballscrews		mm	1,000(OPT.); 1,200(OPT.); 1,400(OPT.)						
	Box way/ single Z axis=920		mm		2	70-1,190(Standard colum	nn)			
Distance	ballscrew(2-step gear)	Z axis=1,020	mm	170-1,090(Standard column)						
from spindle nose to table	Linear way, Enclosed Box Ram/	Z axis=1,000	mm	270-1,270(Standard column)						
		Z axis=1,200	mm	270-1,470(column+200mm)						
	Dual ballscrews (2-step gear/Direct-driven)	Z axis=1,400	mm	270-1,47 ((column+400mm))						
Distance hety	ween columns (port wid		mm			3,550	,			
TABLE	ween columns (port wit	3411)				3,330				
Table size			mm	4.000 v 2.000	E 000 v 2 000	6.000 × 2.000	9,000 × 3,000	10,000 x 3,000		
	v Number v Ditab)			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		
,	x Number x Pitch)		mm	20.000	04.000	28 x 13 x 250 (150)	00.000	00.000		
Max. table loa	au		kg/m	20,000	24,000	28,000	32,000	36,000		
SPINDLE	/ //00 : :		110							
Spindle powe	er(cont./ 30 min.)		kW			22 / 26(30 / 37OPT.)				
Spindle	Box way / single ballscrew	2-step gear	rpm			4,000 / 6,000(OPT.)				
peed	Linear way, Enclosed Box Ram/	2-step gear	rpm		4	4,000(OPT.) / 6,000(OPT	Г.)			
	Dual ballscrews	Direct-driven	rpm			10,000(OPT.)				
Spindle taper	•		-			BBT-50				
FEED										
Cutting feed i	rate		mm/min			1-7,000				
	X/Y(Y+700)		m/min	24 / 15 (15)		15 / 1	15 (15)			
Rapid raverse	Z:Box way / single ba Z:Linear way/ Dual ba		m/min	15						
	Z:Enclosed Box Ram/[Dual ballscrews	m/min	12						
3 axis motor p	ower(FANUC)(Z:Box way / single balls	crew)	kW	9/4.5/7						
3 axis motor p	ower(FANUC)(Z:Linear way, Enclosed	Box Ram/Dual ballscrews)	kW	9/4.5/4.5*2						
ACCURACY	Y 10 2	<u>'</u>								
	ccuracy (JIS B6333)		mm	±0.013/ Full travel ±0.015/ Full tr						
	ccuracy (ISO-230-2 &	VDI 3441)	mm	P0.040 P0.045				P0.050		
Repeatability	* `		mm			±0.003				
	(ISO-230-2 & VDI 344	.1)	mm	±0.003 Ps0.028 Ps0.035						
ATC	(.55 250 2 & VDI 077	• /		. 00		1 00		Ps0.040		
	Vertical type tool char	nge	pcs			32 / 40(OPT.) / 60(OPT.)			
ATC type/	Floor-standing type vertical to	-	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)						
capaciry	Floor-standing type vertical-ho		pcs			(OPT.) / 40(OPT.) / 60(O	,			
Max. tool wei		medital tool charige	kg		32(20	1 1.)			
riax. tool wei Tool shank	yıı.		kg -							
						BBT-50				
Pull stud			-			P50T-1				
GENERAL			LA / A							
Power require			kVA			65				
Pneumatic re	•		kg/cm ²			6	I	T		
Machine net	1		kg	57,000 / 59,000	63,000 / 65,000	69,000 / 71,000	83,000 / 85,000	99,000 / 100,000		
Dimensions	Vertical type tool char	nge	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		
(LxWxH)	Floor-standing vertical type to	ol 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-horizon	ntal 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		

 $^{^{\}ast}$ Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

 $[\]ensuremath{^*}$ For details, please refer to Machine Specification.

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



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								
7	Box way / single ballscrew		mm	920 ; 1,020(OPT.)							
Z axis travel	Linear way, Enclosed Box Ram/Dual ballscrews		mm	1,000(OPT.); 1,200(OPT.); 1,400(OPT.)							
	Box way/ single Z axis=920		mm	270-1,190(Standard column)							
Distance from spindle nose to table	ballscrew(2-step gear)	Z axis=1,020	mm		170-1,090(Standard column)						
	Linear way, Enclosed Box Ram/	Z axis=1,000	mm	270-1,270(Standard column) 270-1,470(column+200mm) 270-1,670(column+400mm)							
		Z axis=1,200	mm								
	Dual ballscrews (2-step gear/Direct-driven)		mm								
Distance bety	ween columns (port wid		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			
	x Number x Pitch)		mm	1,000 X 0,000	0,000 X 0,000	28 x 15 x 250 (150)	0,000 X 0,000	10,000 X 0,000			
Max. table lo			kg/m	20,000	24.000	28,000	32,000	36,000			
SPINDLE				20,000	2-1,000	20,000	02,000	00,000			
	er(cont./ 30 min.)		kW			22 / 26(30 / 37OPT.)					
Opinale powe	Box way / single ballscrew	2 stop goar	rpm			4,000 / 6,000(OPT.)					
Spindle	Linear way.	2-step gear	rpm			I,000(OPT.) / 6,000(OPT	Γ\				
speed	Enclosed Box Ram/	2-step gear			4		1.)				
Cnindle tener	Dual ballscrews	Direct-driven	rpm _			10,000(OPT.)					
Spindle taper						BBT-50					
	l.		mm/min								
Cutting feed				04.1.45.445		1-7,000	(= /4=)				
	X/Y(Y+700)		m/min	24 / 15 (15) 15 / 15 (15)							
Rapid traverse	Z:Box way / single ballscrew Z:Linear way/ Dual ballscrews		m/min	15							
	Z:Enclosed Box Ram/I	Dual ballscrews	m/min	12							
3 axis motor p	ower(FANUC)(Z:Box way / single balls	screw)	kW	9 / 4.5 / 7							
3 axis motor p	ower(FANUC)(Z:Linear way, Enclosed	l Box Ram/Dual ballscrews)	kW			9 / 4.5 / 4.5*2					
ACCURACY											
Positioning a	ccuracy (JIS B6333)		mm		±0.013/ Full travel		Full travel				
	ccuracy (ISO-230-2 & '	VDI 3441)	mm	P0.040 P0.045							
Repeatability	(JIS B6333)		mm			±0.003					
Repeatability	(ISO-230-2 & VDI 344	1)	mm	Ps0.028 Ps0.035 Ps0.0							
ATC											
ATC type/	Vertical type tool char	nge	pcs			32 / 40(OPT.) / 60(OPT.))				
capaciry	Floor-standing type vertical to	ol change	pcs		32	(OPT.) / 40(OPT.) / 60(OP	PT.)				
	Floor-standing type vertical-ho	orizontal tool change	pcs	32(OPT.) / 40(OPT.) / 60(OPT.)							
Max. tool wei	ight		kg	20							
Tool shank			-			BBT-50					
Pull stud			-			P50T-1					
GENERAL											
Power requir	ement		kVA			65					
Pneumatic re	equirement		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			
D: .	Vertical type tool char	nge	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			
Dimensions (LxWxH)	Floor-standing vertical type to	ol 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			
(LXVVXH)	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			

 $^{^{\}ast}$ Max. tool length : 450 mm, Max. support torque : 2.5 kgf-m

 $[\]mbox{\ensuremath{^{*}}}$ For details, please refer to Machine Specification.

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



VF/H 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 ≥ 4m, Y axis ≥ 3m)
- 11 Cutting fluid cooling system
- 12 Centralized auto lubrication system
- 13 Independent Jubrication oil collector
- 14 Vertical type tool magazine 32 tools
- 15 Enclosed sheet metal guard without roof (NF series X axis ≤6m)
- 16 Four piece sheet metal guard (NF series X axis ≥ 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 ≤ 6m)
- 21 Enclosed sheet metal guard without roof (NF series X axis ≥8m) (all HF series)
- 22 Enclosed sheet metal guard with roof (NF series X axis≦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/ custromized 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