

CNC FIXED DOUBLE COLUMNS MACHINING CENTER **FD&FDW** series

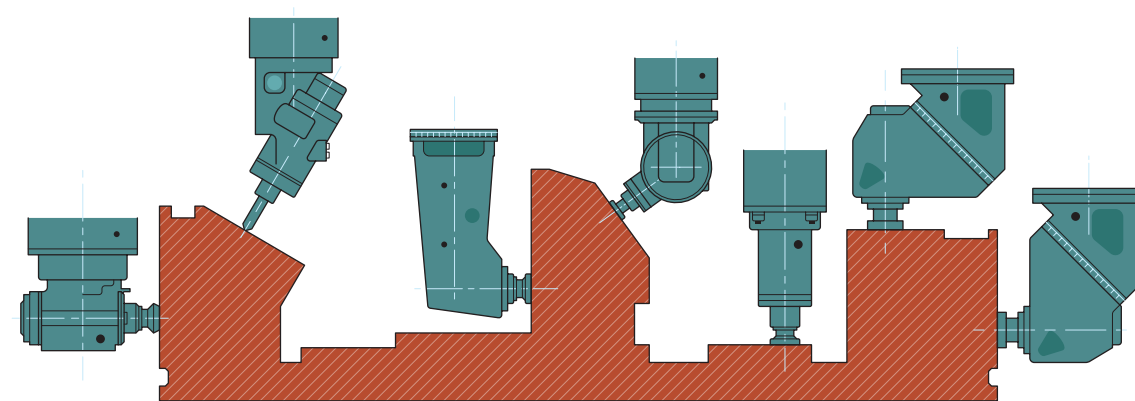
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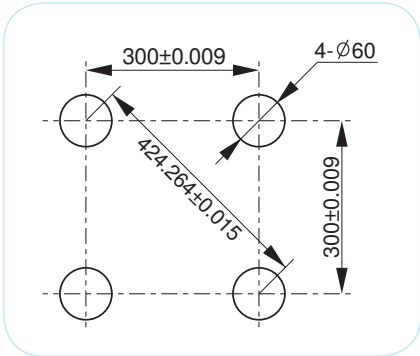
President
荻野 一郎



FIXED DOUBLE COLUMNS MACHINING CENTER

FDW Moving Cross-Rail TRAVEL

X-travel : 3200~6000mm
Y-travel : 2400/2800/3200/3600/4200mm
Z-travel : 800 (1100/1400)mm
W-travel : 1000 (1500/2000)mm



High precision machining

FD W - 36 60

- x100 X travel 6000mm
- x100 Span 3650mm
- W type moving cross-rail
- Fixed Double Columns

MOVING CROSS-RAIL
W travel



Semi-enclosed splash guard



FD - 32 52

- x100 X travel 5200mm
- x100 Span 3250mm
- Fixed Double Columns

FD TRAVEL

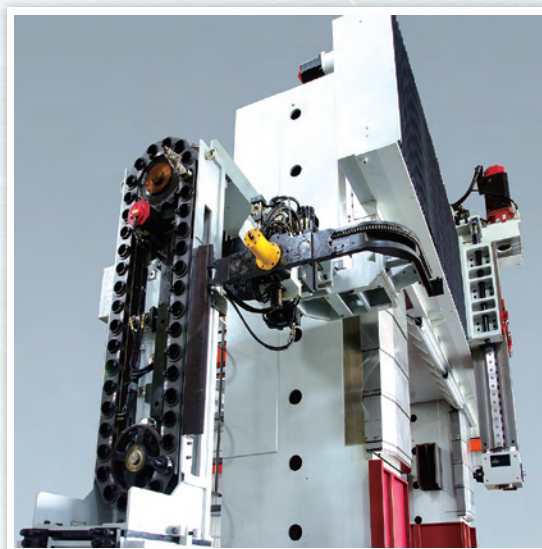
X-travel : 2200~6000mm
Y-travel : 1800/2100/2400/2800/3200/3600/4200mm
Z-travel : 800 (1100/1400)mm

FDW W-type

FIXED DOUBLE COLUMNS MACHINING CENTER

ガントリ綜合加工機

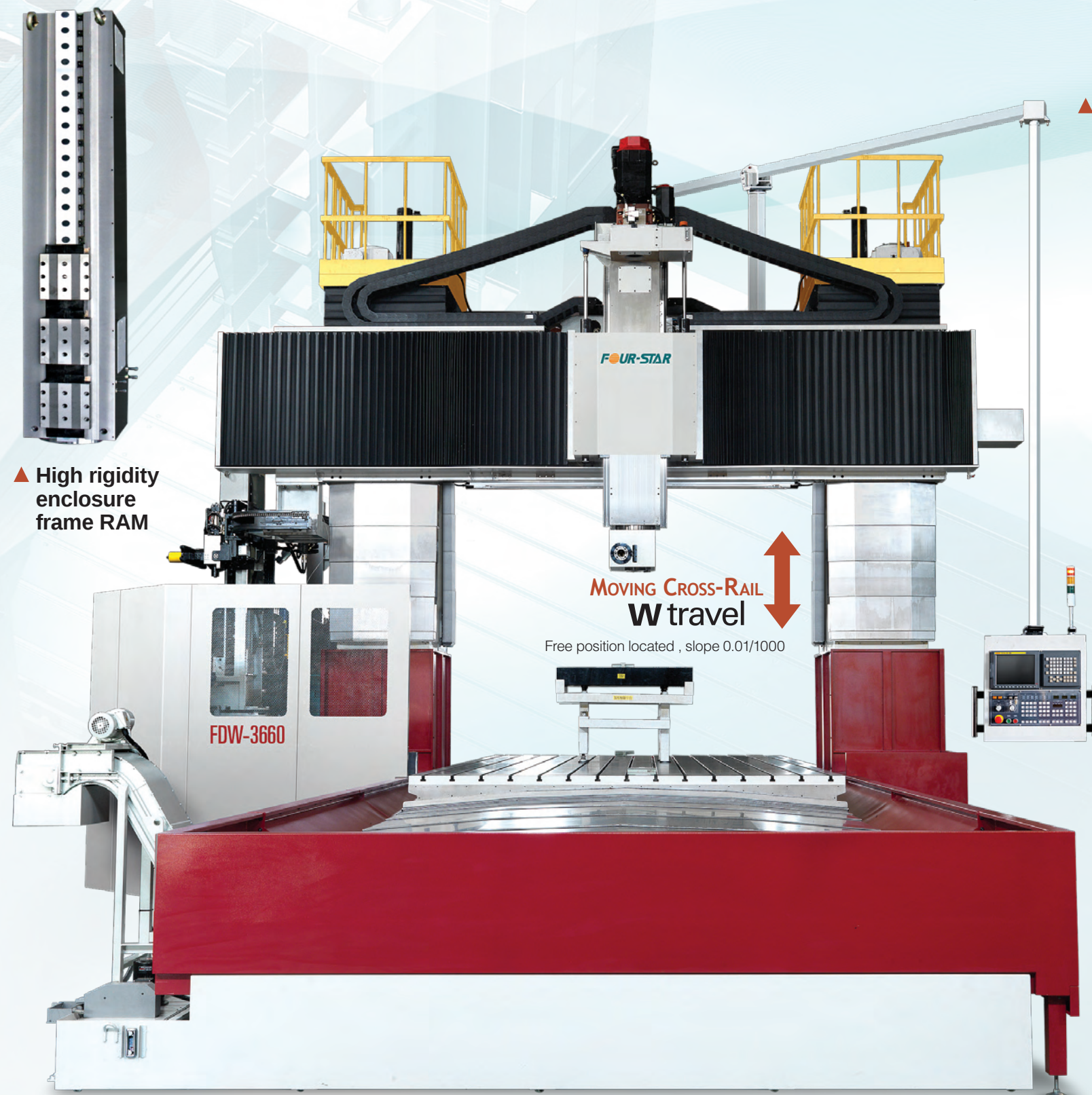
Features



▲ Free position ATC

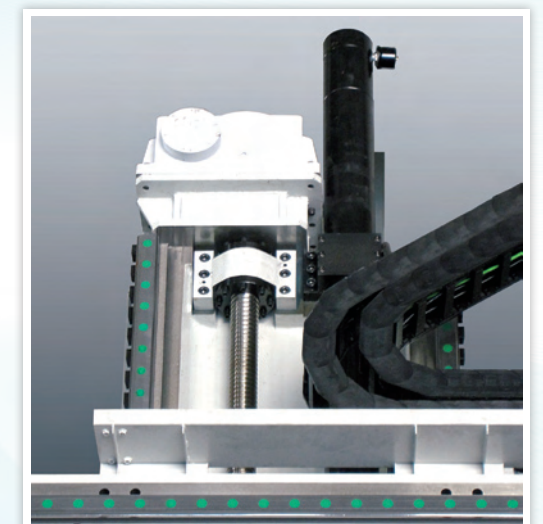


▲ Enlarge column base



▲ High rigidity enclosure frame RAM

▲ Cross-rail box-in-box unity cast-iron frame



▲ Synchronous servo control



▲ Three linear guideways column

Structural Design

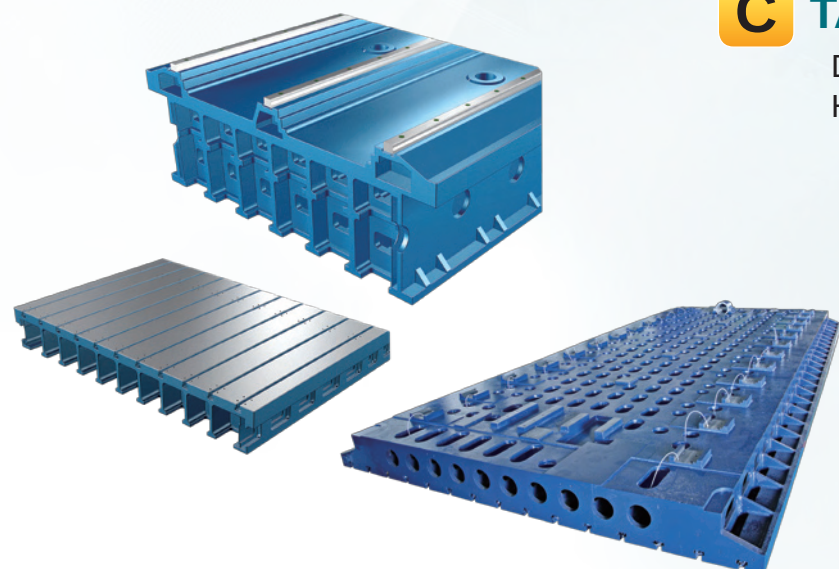
A SPINDLE BOX (RAM)

Optimum cross-section 400x450mm² (550x550, 650x650)
Interior loop ribs reinforcement, rigid roller guide way



B BASE

Box-in-box unity frame
FD24~FD36 three guideways
Interior loop ribs reinforcement



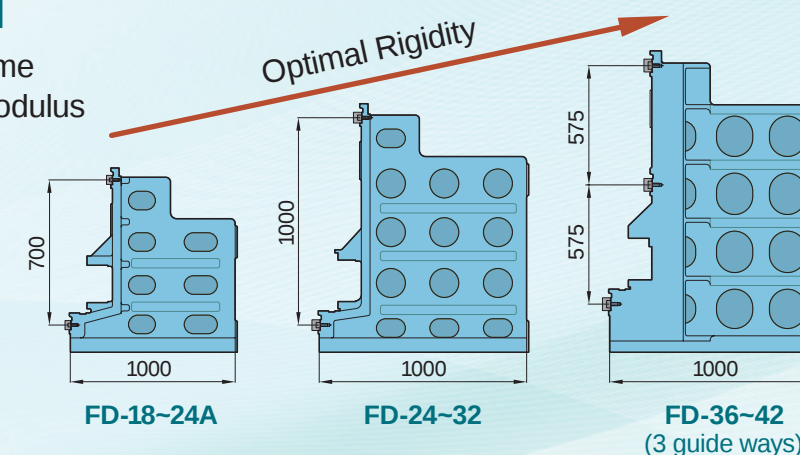
C TABLE

Double layer loop frame
Heavy duty loading



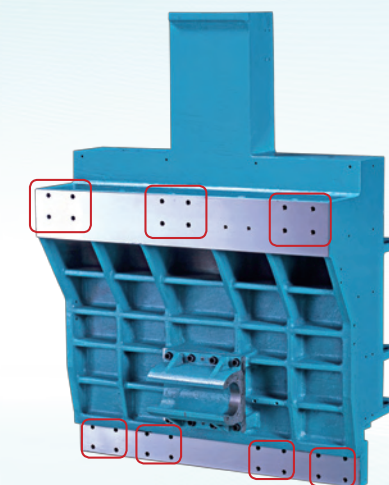
D CROSS BEAM

Box-in-box unity frame
Optimum section modulus



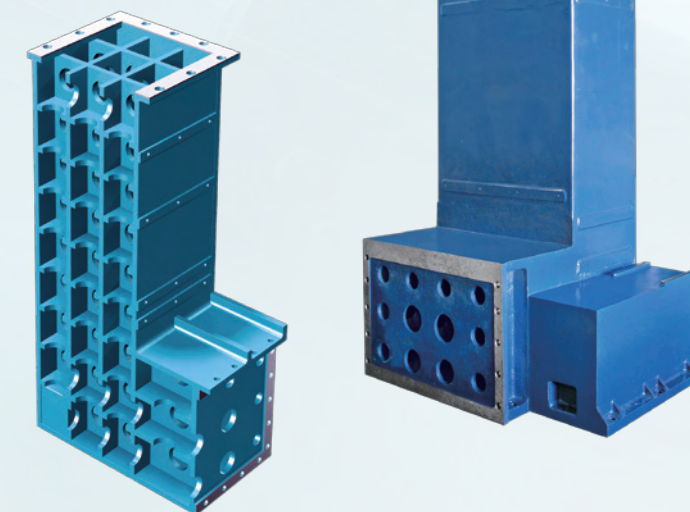
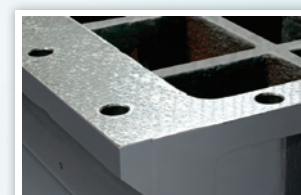
E SADDLE

3 top / 4 bottom support blocks
Unity frame with reinforced ribs
Stair style structural design

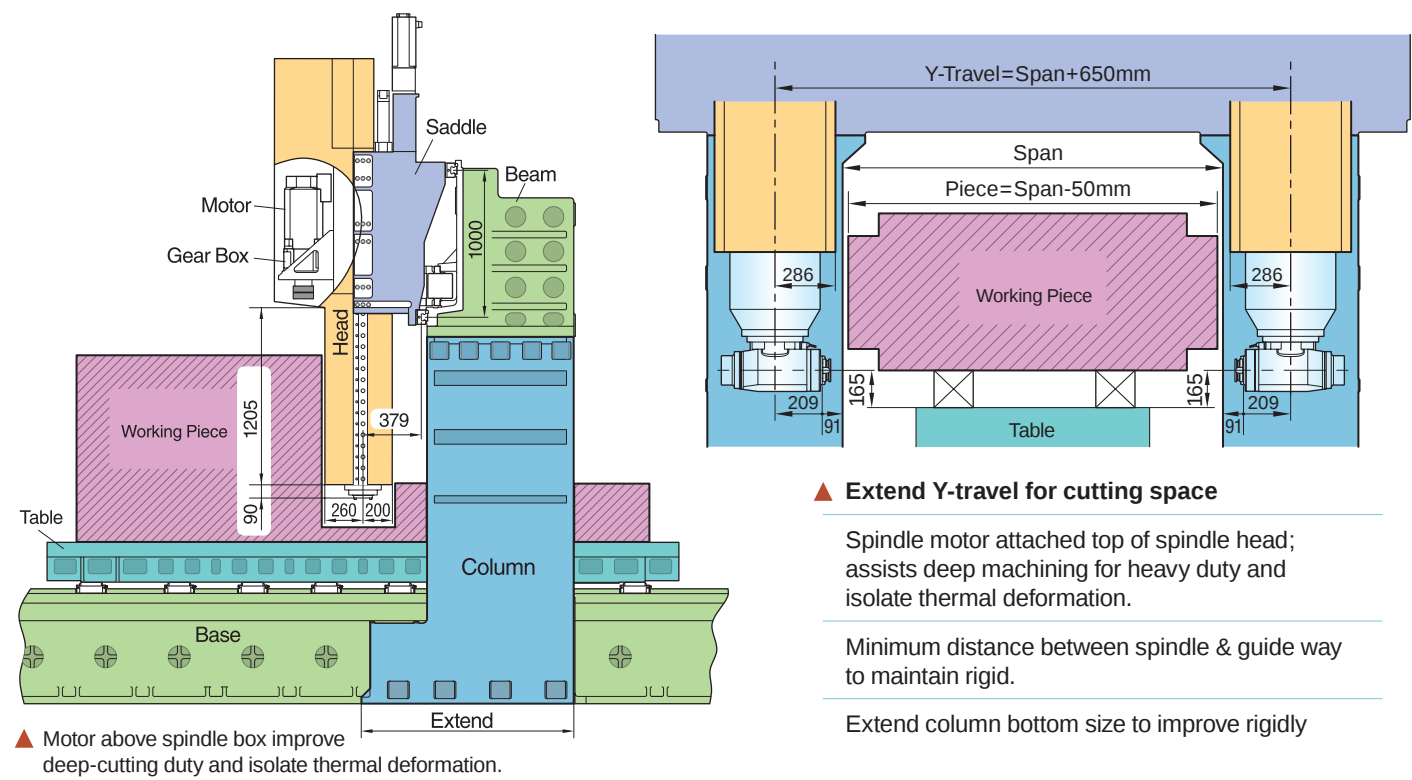


F COLUMN

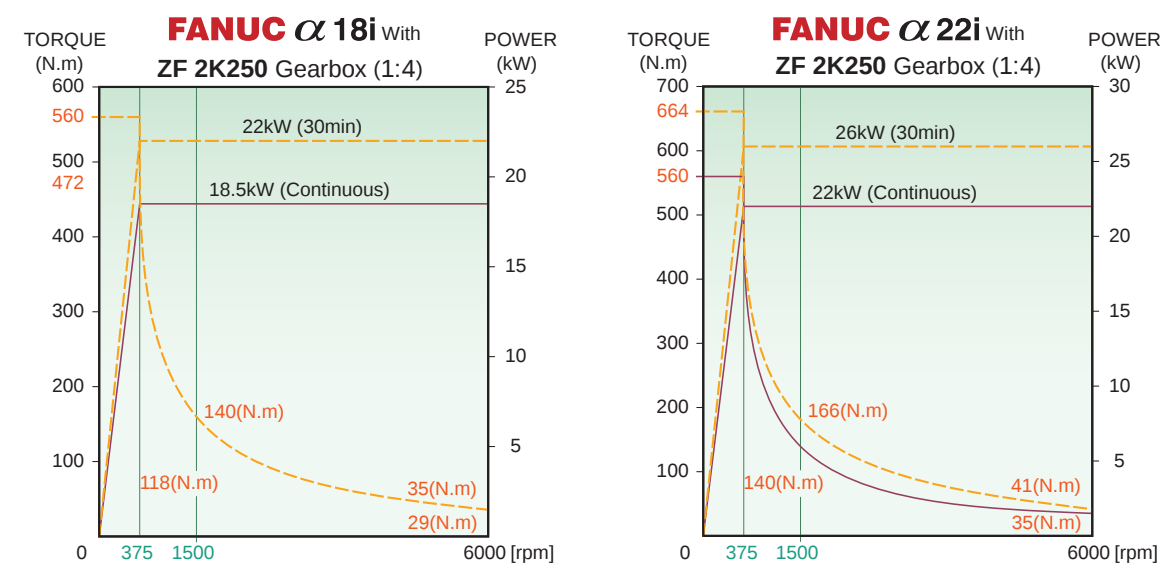
High damping box structure
Hand scraped attach surfaces
Extend bottom size to improve rigidity



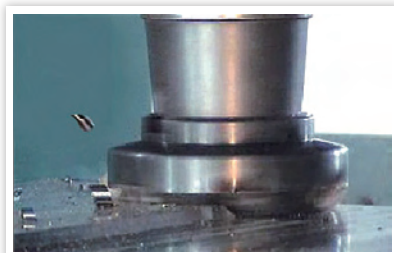
Enlarge Cutting Space



Rigidity Capability



Cutting Record (from FD-1832)

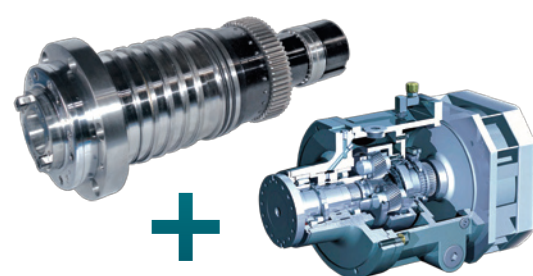


Face cutting S45C
Ø150mm, 350rpm, t=8mm
400mm/min, SP load 70% x load 28%,
RMS 12s



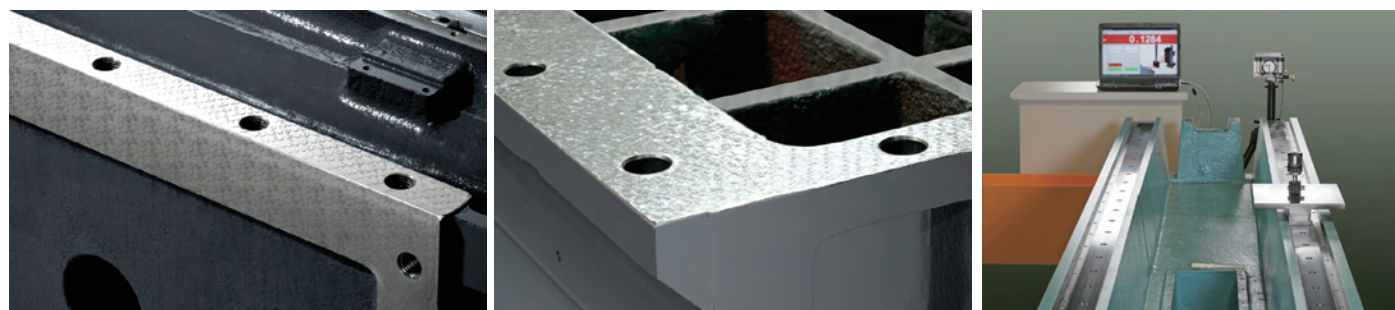
Drilling S45C
Ø48mm, 1200rpm
30mm/min, Z load 80%,
tolerance +0.1mm

High efficiency spindle
P4 level precision ball bearing is oil chilled to reduce thermal deformation.



Two speed ZF 2K 250 gearbox
Full enclosure, high performance.

Quality Assurance



All attached surfaces of base by precision hand-scraped.

All attached surfaces of columns by precision hand-scraped.

Accuracy and Precision assembly

Special Head (Exchange model)



90° head Extension head Extension 90° head BC swiveling head

Model	Automatic	Semi-Automatic	Manual
Head exchange	Auto	Manual (hydraulic)	Manual (bolts)
Head indexed	Auto. (5°/15°)	Auto. (5°/15°)	Manual (5°/15°)
Tool clamped	Booster	Booster	Bolt

Auto head exchanger (AHC)



With multiple auto. model heads

Not exchange model head

5 Face head (Indexed) **5 Axis head (Simultaneous)**



Universal head 5 Face head AC5K

FD Fixed Double Columns Machining Center

Item		Unit	FD-18 Series					FD-21 Series			FD-24A Series			
Model		FD-	1822	1827	1832	1842	1852	2132	2142	2152	2432A	2442A	2452A	
Distance between columns		mm	1850					2150			2450			
Table size	Length	mm	2300	2800	3300	4300	5300	3300	4300	5300	3300	4300	5300	
	Width	mm	1500					1800			2000			
T-slot	Width x NO x Pitch	mm	22 x 9 x 150				22 x 5 x 250		22 x 7 x 250			22 x 7 x 250		
Travel	X-axis	mm	2200	2700	3200	4200	5200	3200	4200	5200	3200	4200	5200	
	Y-axis	mm	1800					2100			2400			
	Z-axis	mm	800 (1100)											
Spindle	Nose to table	mm	200~1000 (200~1300)				380~1180 (200~1300)							
	Center to column	mm	427 (435)											
	Taper / Speed / Power	rpm/kW	BT50 - 6,000 - 18.5 / 22											
feedrate	Cutting	mm/min	5~8000											
	X-axis G00	m/min	20		15	12	10	15	12	10	12	10	10	
	Y/Z-axis G00	m/min	15/15											
Accuracy		mm	Positioning ±0.005 / 300 ; Repeatability ±0.003											
ATC & tool magazine	Capcity / Dia	mm	24pcs / Max. dia Ø110(full tools) ; Ø200(Adjacent pocket empty)											
	Max tool weight / Length	Kg/mm	18kg / 350mm											
	Tool selection		Take shortest direction / M24 P3.0-45°											
Requirement	Power / Pneumatic		40~50 KVA / 6.5 kg/cm²											
Maximum Table Load		ton	10				11		12			13		
Machine size	Length	mm	6400	7400	8400	10400	12400	8400	10400	12400	8400	10400	12400	
	Width	mm	4550					4850			5150			
	Height	mm	4570				4850							
Machine Weight (app.)		ton	23	26	28	35	40	30	37	42	32	39	45	

FDW W-type Double Columns Machining Center

Item		Unit	FDW-24 Series				FDW-28 Series				FDW-32 Series		
Model		FDW-	2432	2442	2452	2460	2832	2842	2852	2860	3242	3252	3260
Distance between columns		mm	2450				2850				3250		
Table size	Length	mm	3300	4300	5300	6200	3300	4300	5300	6200	4300	5300	6200
	Width	mm	2000				2200				2600		
T-slot	Width x NO x Pitch	mm	28 x 11 x 180				28 x 13 x 180				28 x 15 x 180		
Travel	X-axis	mm	3200	4200	5200	6000	3200	4200	5200	6000	4200	5200	6000
	Y-axis	mm	2400				2800				3200		
	Z-axis	mm	800 (1100)										
	W-axis	mm	1000 (1500) Free position located										
Spindle	Nose to table	mm	200 ~ W+Z										
	Taper / Speed / Power	rpm/kW	BT50 - 6,000 - 22 / 26										
Feedrate	X,Y,Z Cutting	mm/min	5~5000										
	X/Y/Z/W Rapid	m/min	10 / 10 / 10 / 2										
Accuracy		mm	Positioning ±0.005 / 300 ; Repeatability ±0.003 ; Cross-rail slope 0.01/1000										
ATC & tool magazine	Capcity / Dia	mm	32pcs / Max. dia Ø125(full tools) ; Ø220(Adjacent pocket empty)										
	Max tool weight / Length	Kg/mm	18kg / 350mm										
	Tool selection / Pull stud		Free position take shortest direction / M24 P3.0-45°										
Requirement	Power / Pneumatic		60~70 KVA / 6.5 kg/cm²										
Maximum Table Load		ton	15				17				20		
Machine size	Length	mm	9400	11400	13400	15400	9400	11400	13400	15400	11400	13400	15400
	Width	mm	6000				6500				7000		
	Height	mm	6000 (6500)										
Machine Weight (app.)		ton	45	50	56	63	48	53	59	66	57	63	70

FD-24 Series				FD-28 Series				FD-32 Series			FD-36 Series			FD-42 Series		
2432	2442	2452	2460	2832	2842	2852	2860	3242	3252	3260	3642	3652	3660	4242	4252	4260
2450				2850				3250			3650			4250		
3300	4300	5300	6200	3300	4300	5300	6200	4300	5300	6200	4300	5300	6200	4300	5300	6200
2000				2200				2600			3000					
28 x 11 x 180				28 x 13 x 180				28 x 15 x 180			28 x 15 x 200					
3200	4200	5200	6000	3200	4200	5200	6000	4200	5200	6000	4200	5200	6000	4200	5200	6000
2400				2800				3200			3600			4200		
800 (1100)											1100 (1400)					
300~1100 (300~1400)											300~1400 (300~1700)					
435											473					
BT50 - 6,000 - 22 / 26																
5~5000																
10	10	10	8	10	10	10	8	10	10	8	8					
12/15				10/15				8/15			8/12					
Positioning ±0.005 / 300 ; Repeatability ±0.003																
24pcs / Max. dia Ø110(full tools) ; Ø200(Adjacent pocket empty)																
18kg / 350mm																
Take shortest direction / M24 P3.0-45°																
50~60 KVA / 6.5 kg/cm²																
15				17				20			22					
9400	11400	13400	15400	9400	11400	13400	15400	11400	13400	15400	11400	13400	15400	11400	13400	15400
5600				6000				6400			6800			7200		
4700											5600					
42	47	53	60	45	50	56	63	54	60	67	57	63	70	58	64	71

Standard Accessories

- 1 . Spindle cooler
- 2 . Spindle air blast
- 3 . Cutting coolant system
- 4 . Auto lubrication system
- 5 . Rigid tapping
- 6 . Electric cabinet heat exchanger
- 7 . Program end alarm lamp
- 8 . RS-232 interface
- 9 . ZF-DUOPLAN 2K250 H/L gearbox
- 10 . Air/water cleaning equipment.
- 11 . Twin spir type chip remover
- 12 . Metal belt chip conveyor with cart
- 13 . Operator's manual
- 14 . Tool kit
- 15 . Arm type ATC 24/32 tools magazine
- 16 . ATC auto door
- 17 . Working lamp
- 18 . Foot switch for tool away
- 19 . Semi-enclosed splash guard (no top) (FD)
- 20 . FANUC 0iMD+8.4"LCD (FD series)
- 21 . FANUC 31iMB+10.4"LCD (FDW series)
- 22 . W axis linear scale 2 pcs (FDW series)
- 23 . Leveling screw + foundation bolts

Optional Accessories

- 1 . High pressure coolant thru spindle (CTS)
- 2 . Coolant thru tool holder device
- 3 . Tool length measurement
- 4 . Auto work piece measurment
- 5 . X,Y,Z-axis linear scale
- 6 . Heighten block (sub-table)
- 7 . Oil skimmer
- 8 . CNC rotary (index) table
- 9 . 90° head (AAI, AAC, ATC)
- 10 . BC swiveling head (AAI, AAC, ATC)
- 11 . Universal head (AAI, AAC, ATC)
- 12 . 90° extened head (AAI, AAC)
- 13 . Extened head 500mm (AAC)
- 14 . Auto head changer (AHC)
- 15 . 5 Axis simultaneous head
- 16 . DATA SERVER
- 17 . AI-NANO HPCC (for 31iMB)
- 18 . Spindle motor 30/37KW+ZF 2K-300
- 19 . High speed spindle 8000~24000 rpm
- 20 . Tool Magazine 32, 40, 60, 80 pcs
- 21 . Fully enclosure splash guard (FD series)
- 22 . Controller SIEMENS / HEIDENHAIN
- 23 . Tansformer 40~70 KVA