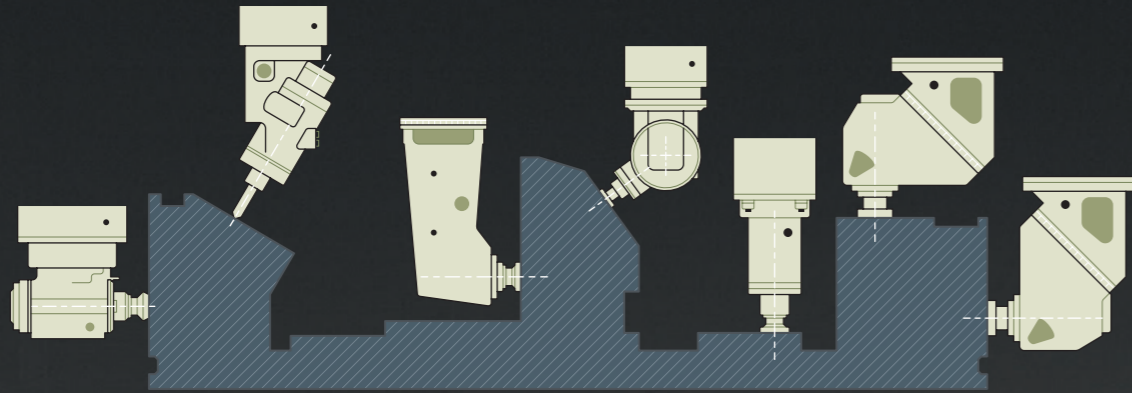


FOUR-STAR

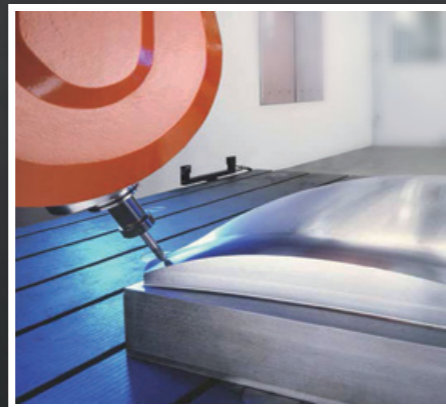
Quality, Credibility, Innovation, Service



5 Face milling head

5 Axis Simultaneous milling head

5A head machining



FOUR-STAR

YONG JU PRECISION TECHNOLOGY CO.,LTD.

Moving Cross-Rail Double Columns Machining Center

FDW series

↑
W travel
(1000~2000mm)
↓



YONG JU PRECISION TECHNOLOGY CO.,LTD.

TEL : +886-4-2565-3981 E-mail: yjpt@fourstarcnc.com
FAX: +886-4-2560-8430 http://www.fourstarcnc.com

No.6-2, Lane 292, Da Lin Road, Da Ya District, Taichung City, 42847, Taiwan.



2016. October



www.fourstarcnc.com

Specification

Between Columns : 1850/2150/2450/2850/3250/3650/4250mm

X - travel : 2200~6000mm

Y - travel : 1800~2400mm

Z - travel : 800/1100mm

W - travel : 1000/1500/2000mm



MODEL INFO

FD W-36 60+5F

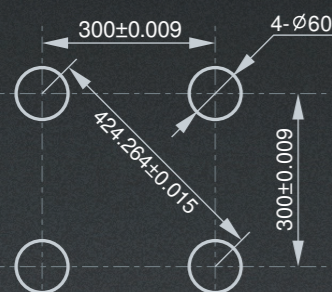
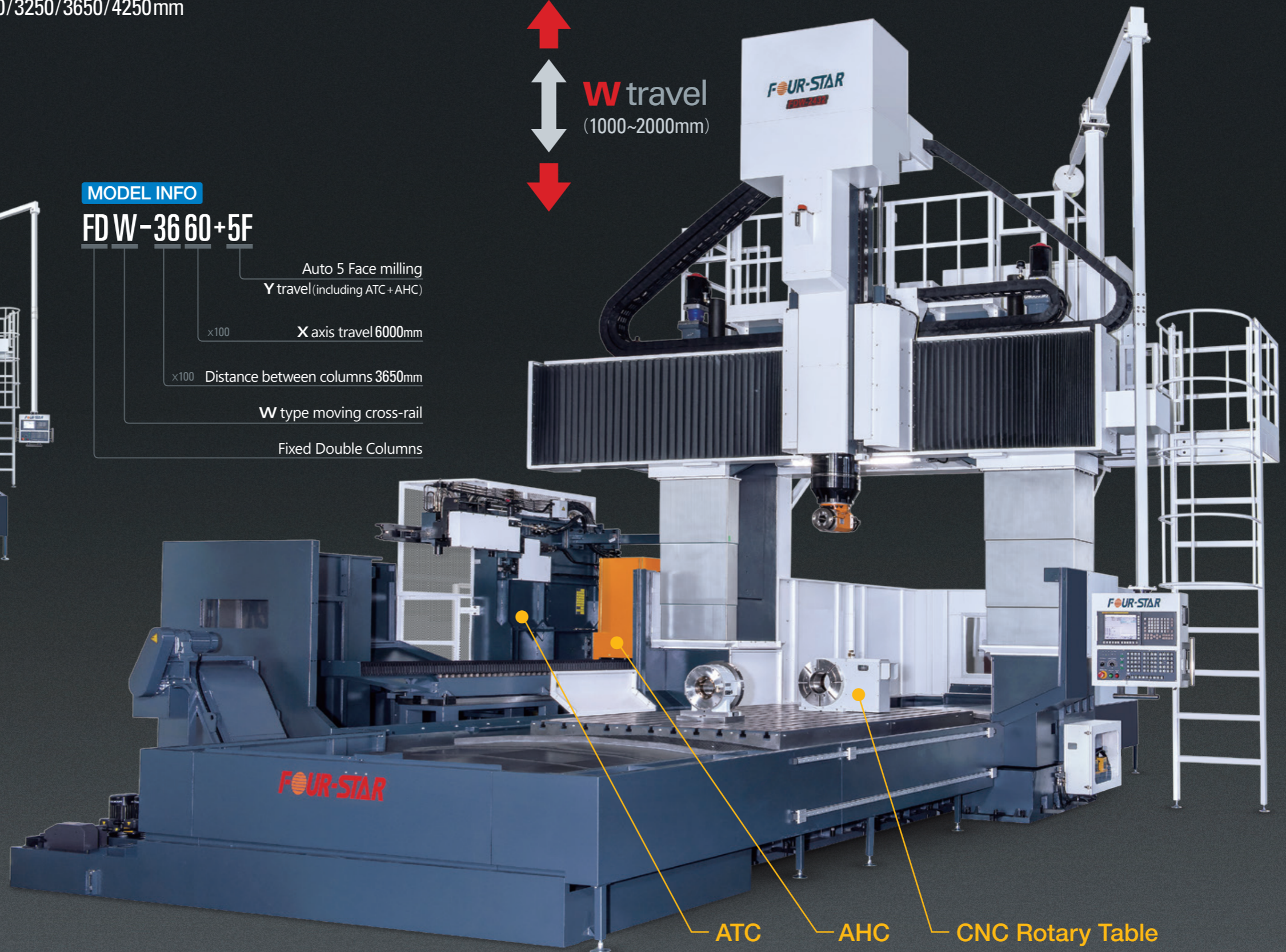
Auto 5 Face milling
Y travel (including ATC+AHC)

x100 X axis travel 6000mm

x100 Distance between columns 3650mm

W type moving cross-rail

Fixed Double Columns



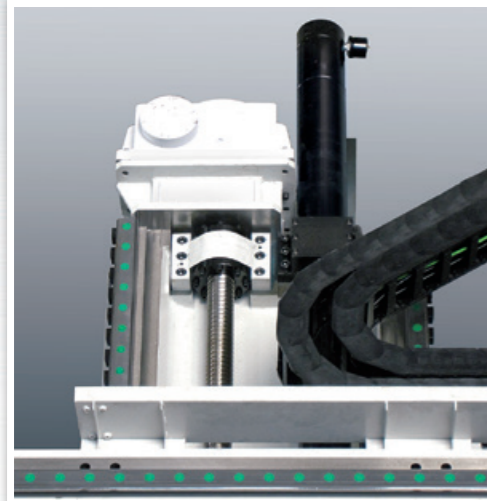
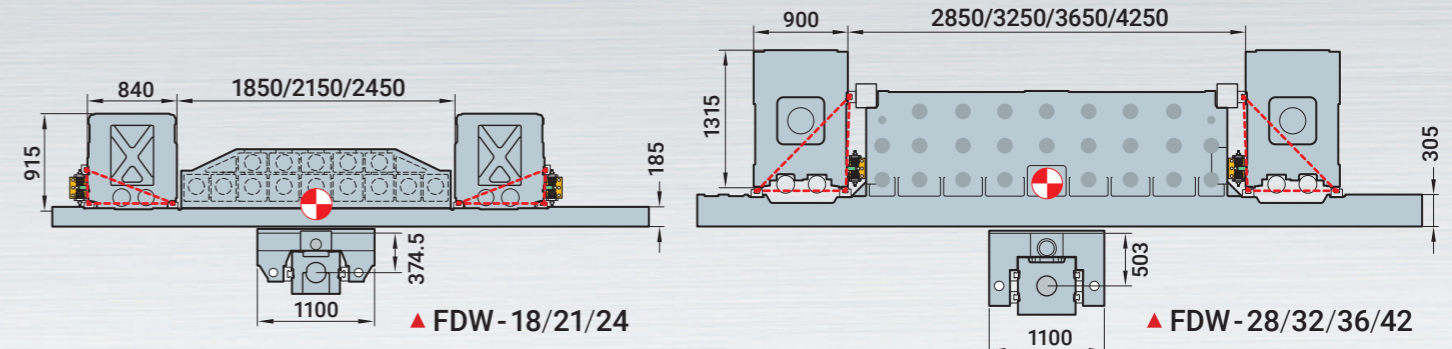
High precision machining

ATC

AHC

CNC Rotary Table

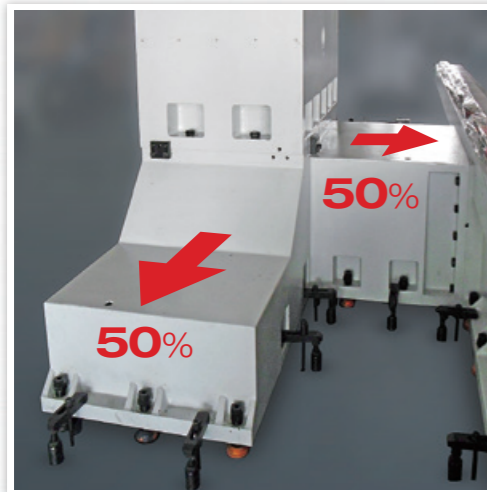
FDW series Moving Cross-Rail DCM



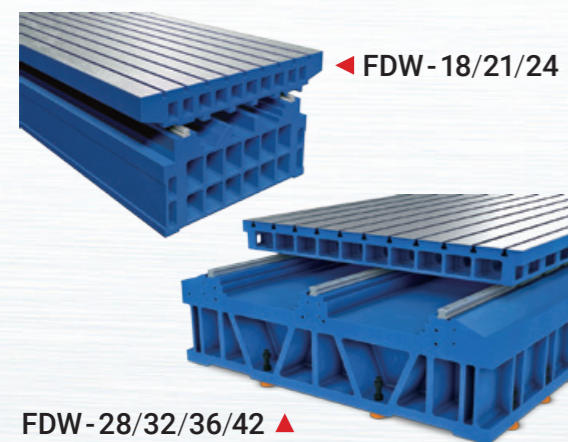
Dual Synchronous servo control
(Patent NO. M503282)



Dia. 800~2000
Embedded CNC Rotary Table
(Indexed / Simultaneous 0.001°)

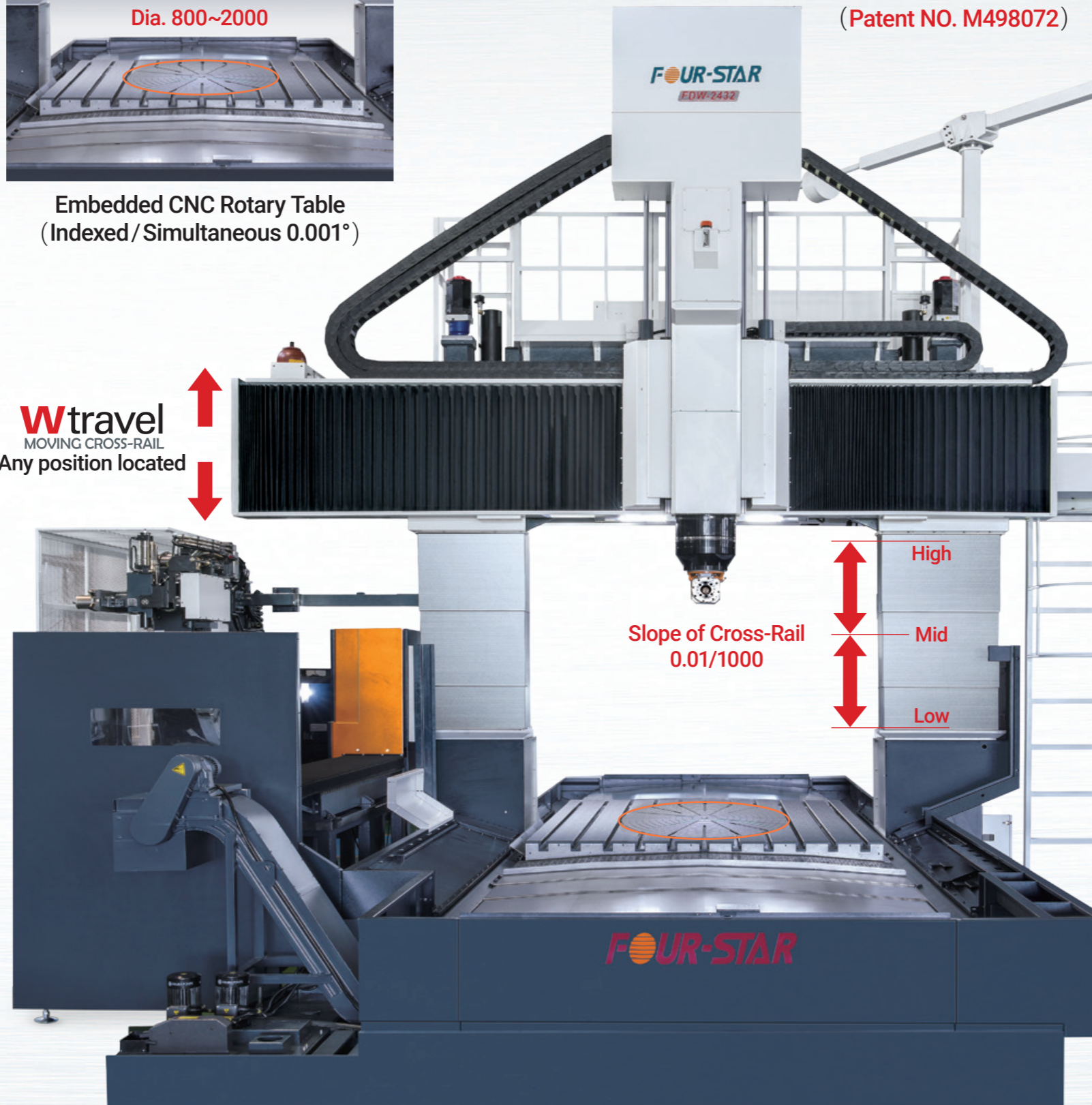


Extend column base

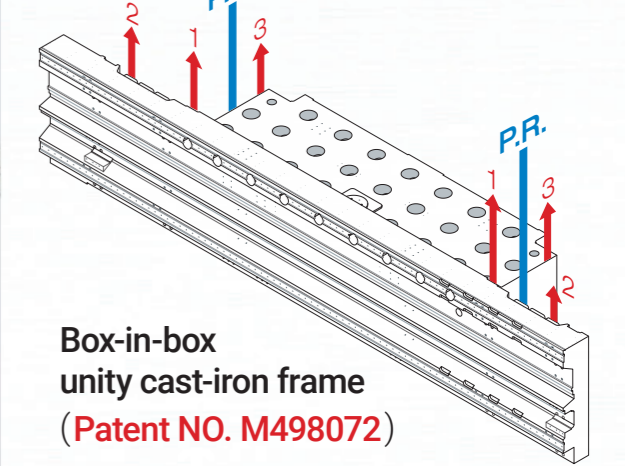
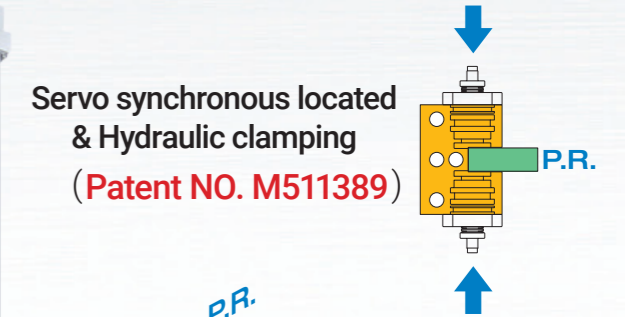


FDW-28/32/36/42 ▲

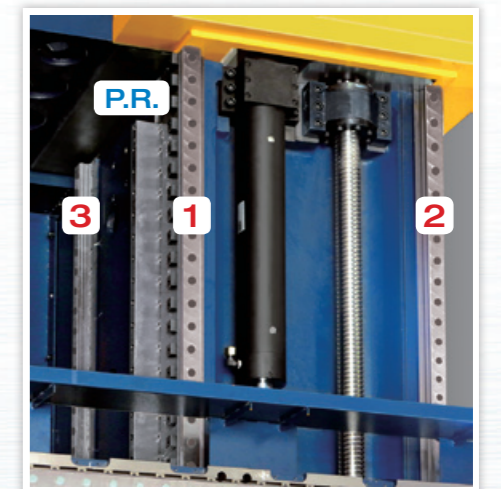
wtravel
MOVING CROSS-RAIL
Any position located



Triangular rigid supporting made gravity-center falls column inside.
(Patent NO. M498072)

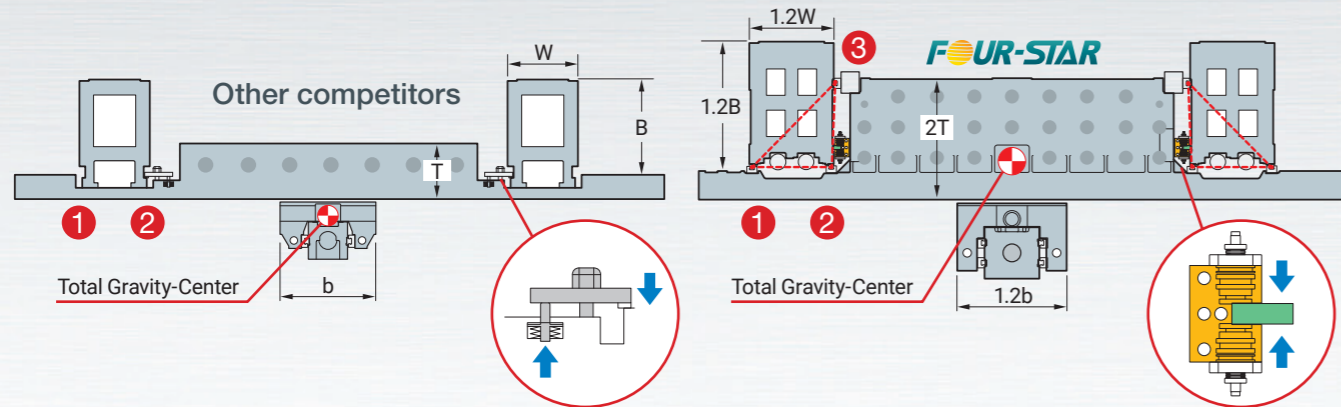


Box-in-box
unity cast-iron frame
(Patent NO. M498072)



Each column with 3 linear
guide-ways and 1 position rail (P.R.)
(Patent NO. M511389)

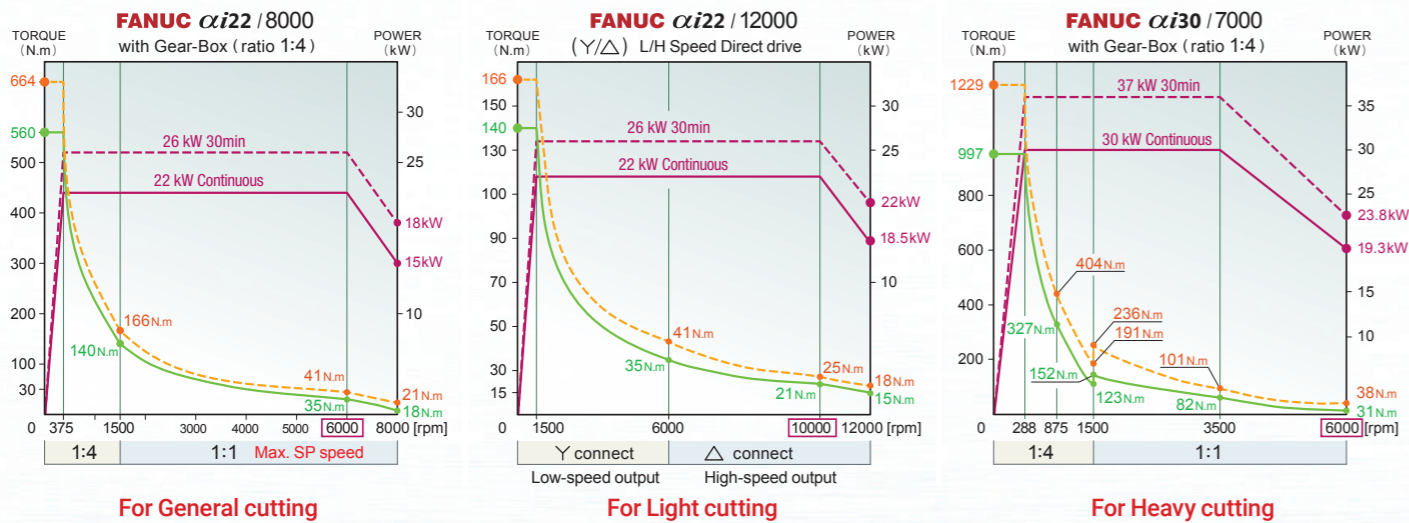
Innovative patented design



10 key points excellent design

- 1 Box-in-Box unity cast-iron high rigidity structure.
- 2 AHC and Column separate independent from ground.
- 3 Column-base extended & separate with base.
- 4 Extend Y travel for auto 5F machining space.
- 5 All linear guideways enhance rigidity and accuracy.
- 6 Cross-rail positioned by both sides hydraulic clamping.
- 7 Increase the beam dimension & weight increase rigidity.
- 8 The optional 4 guideways 550 x 550 ram for heavy cutting.
- 9 The hydraulic clamping makes the slope of cross-rail 0.01/1000
- 10 Cross-rail supported by triangular track made gravity-center fall column inside.

Cutting Capability



Enlarge Cutting Space

Cutting Record (from FDW-2432)

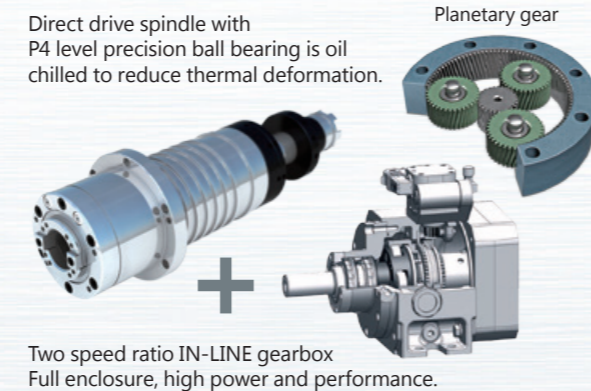


Face cutting S45C
Ø150mm, 350rpm, t=8mm
600mm/min, SP load 70%
X axis load 28%, RMS 12s

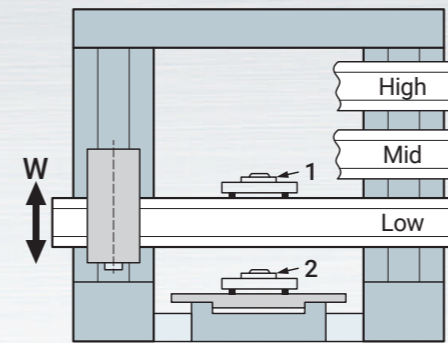


Drilling S45
Ø48mm, 1200rpm, h=100mm
30mm/min, Z axis load 80%,
tolerance +0.1mm

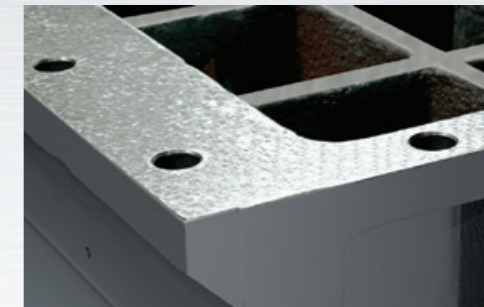
Optimal Efficiency Transmission



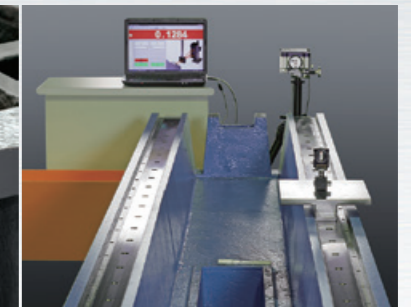
Quality Assurance



▲ High-precision assembly skill.



▲ All mounted surface by precise hand-scraping.



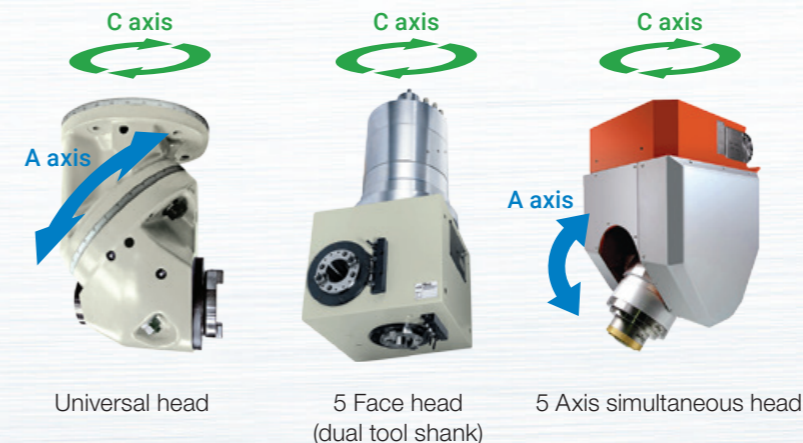
▲ Calibration straightness and flatness by laser.

Special Milling Head (Exchange Type)

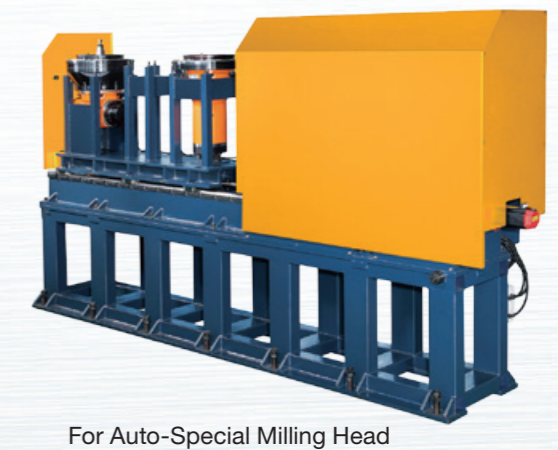
Type	Automatic	Semi-Automatic	Manual
Head exchange	Auto (hydraulic)	Manual (8 bolts)	Manual (8 bolts)
Head indexed	Auto (5°)	Auto (5°)	Manual (5° / free)
Tool clamped	Booster	Booster	Bolt



Special Milling Head (Fixed Type)

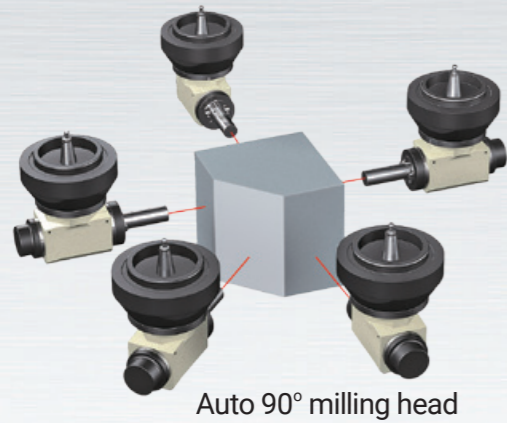


Auto Head exChanger (AHC)

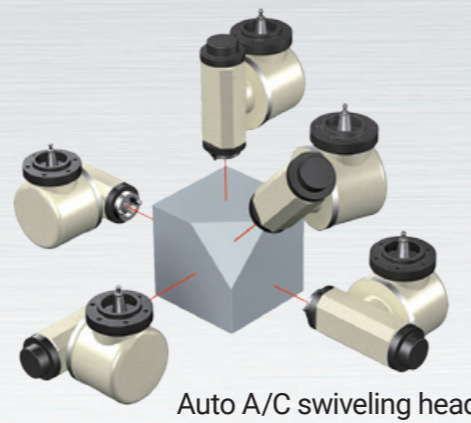


For Auto-Special Milling Head

Auto 5F milling head



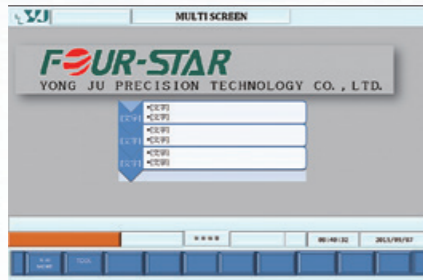
Auto 90° milling head



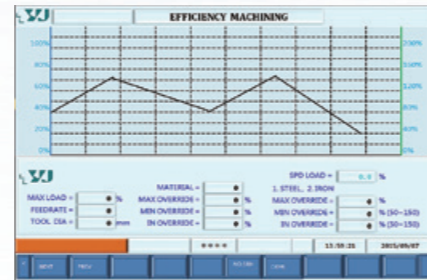
Auto A/C swiveling head

SHMI (Smart Human-Machine Interaction)

▼ Main screen MAIN



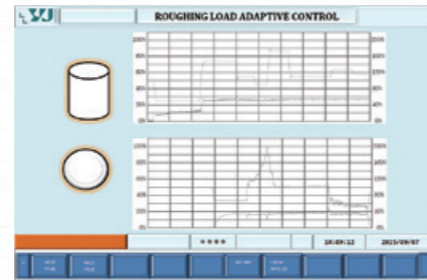
▼ Efficiency machining EM



▼ Tool load monitor TLM

NO.	TOOL	LOADING	LOADING	LOADING	LOADING	LOADING	LOADING	LOADING	LOADING
1	1	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2	2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3	3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4	4	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
5	5	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
6	6	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
7	7	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
8	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
9	9	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
10	10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
11	11	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
12	12	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13	13	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
14	14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
15	15	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
16	16	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
17	17	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
18	18	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
19	19	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

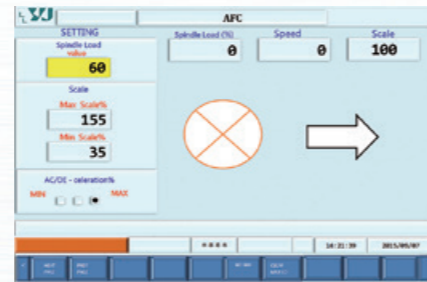
▼ Roughing load adaptive control RLAC



▼ Tool measurement TM

NO.	TOOL	MEASUREMENT	MEASUREMENT	MEASUREMENT	MEASUREMENT	MEASUREMENT	MEASUREMENT
1	1	0.000	0.000	0.000	0.000	0.000	0.000
2	2	0.000	0.000	0.000	0.000	0.000	0.000
3	3	0.000	0.000	0.000	0.000	0.000	0.000
4	4	0.000	0.000	0.000	0.000	0.000	0.000
5	5	0.000	0.000	0.000	0.000	0.000	0.000
6	6	0.000	0.000	0.000	0.000	0.000	0.000
7	7	0.000	0.000	0.000	0.000	0.000	0.000
8	8	0.000	0.000	0.000	0.000	0.000	0.000
9	9	0.000	0.000	0.000	0.000	0.000	0.000
10	10	0.000	0.000	0.000	0.000	0.000	0.000
11	11	0.000	0.000	0.000	0.000	0.000	0.000
12	12	0.000	0.000	0.000	0.000	0.000	0.000
13	13	0.000	0.000	0.000	0.000	0.000	0.000
14	14	0.000	0.000	0.000	0.000	0.000	0.000
15	15	0.000	0.000	0.000	0.000	0.000	0.000
16	16	0.000	0.000	0.000	0.000	0.000	0.000
17	17	0.000	0.000	0.000	0.000	0.000	0.000
18	18	0.000	0.000	0.000	0.000	0.000	0.000
19	19	0.000	0.000	0.000	0.000	0.000	0.000
20	20	0.000	0.000	0.000	0.000	0.000	0.000

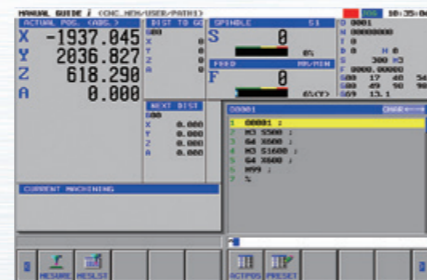
▼ Auto feed control (AFC) AFC



▼ Workpiece measurement WM

NO.	TOOL	MEASUREMENT	MEASUREMENT	MEASUREMENT	MEASUREMENT	MEASUREMENT	MEASUREMENT
1	1	0.000	0.000	0.000	0.000	0.000	0.000
2	2	0.000	0.000	0.000	0.000	0.000	0.000
3	3	0.000	0.000	0.000	0.000	0.000	0.000
4	4	0.000	0.000	0.000	0.000	0.000	0.000
5	5	0.000	0.000	0.000	0.000	0.000	0.000
6	6	0.000	0.000	0.000	0.000	0.000	0.000
7	7	0.000	0.000	0.000	0.000	0.000	0.000
8	8	0.000	0.000	0.000	0.000	0.000	0.000
9	9	0.000	0.000	0.000	0.000	0.000	0.000
10	10	0.000	0.000	0.000	0.000	0.000	0.000
11	11	0.000	0.000	0.000	0.000	0.000	0.000
12	12	0.000	0.000	0.000	0.000	0.000	0.000
13	13	0.000	0.000	0.000	0.000	0.000	0.000
14	14	0.000	0.000	0.000	0.000	0.000	0.000
15	15	0.000	0.000	0.000	0.000	0.000	0.000
16	16	0.000	0.000	0.000	0.000	0.000	0.000
17	17	0.000	0.000	0.000	0.000	0.000	0.000
18	18	0.000	0.000	0.000	0.000	0.000	0.000
19	19	0.000	0.000	0.000	0.000	0.000	0.000
20	20	0.000	0.000	0.000	0.000	0.000	0.000

▼ Dialogue guideline DG



FANUC 0iMF & 31iMB Function List

Specifications	0iMF	31iMB
Max controlled axes number	7	20
Max simultaneous controlled axis	4	4
Tandem / Torque control	○	○
Increment system C	○	★
Dual position feedback *1	★	★
Linear scale I/F with absolute address reference mark *1	★	★
HRV2 / HRV3 control	○	○
Inch/metric conversion	○	○
Interlock	○	○
Machine lock	○	○
Emergency stop	○	○
Over travel	○	○
Stroke limit check before move	○	○
Mirror image	○	○
Position switch	○	○
Operation		
MDI operation	○	○
DNC operation	○	○
Program restart	○	○
Retraction for rigid tapping	○	○
Retraction for 3D rigid tapping *2	★	★
Buffer register	○	○
Dry run	○	○
Single block	○	○
Jog feed	○	○
3-dimensional manual feed	★	★
Manual handle interruption	○	○
Incremental feed	○	○
Auxiliary/Spindle speed function		
Auxiliary function	○	○
High-speed M/S/T/B interface	○	○
Spindle override	○	○
Spindle orientation	○	○
Rigid tapping	○	○
Rigid tapping by manual handle	★	★
Interpolation functions		
Nano interpolation	○	○
Positioning	○	○
Exact stop	○	○
Linear interpolation	○	○
Circular interpolation	○	○
Dwell	○	○
Cylindrical interpolation	○	★
Helical interpolation	○	★
Nano smoothing *3	★	★
Jerk control *3	★	★
Tolerance control *3	★	★
Thread cutting, synchronous cutting	○	○
Skip function	○	○
Optional block skip	○	○
Reference position return check	○	○
Editing Operation		
Part program storage size x3	○	○
Part program editing	○	○
Program protect	○	○
Extended part program editing	○	○
Background editing	○	○
Data server editing/operation	○	○
Accuracy compensation function		
Stored pitch error compensation	○	○
Smooth backlash compensation	○	○
Interpolation type straightness compensation	○	○

Specifications	0iMF	31iMB
Guidance function		
Manual Guide i	○	○
Program input		
Absolute/incremental programming	○	○
Decimal point programming calculator type	○	○
Polar coordinate command	○	○
Coordinate system setting	○	○
Automatic coordinate system setting	○	○
Workpiece coordinate system	○	○
Addition of workpiece coordinate system	○	○
Programmable data input	○	○
Sub program call	○	○
Custom macro	○	○
Addition of custom macro common variables	○	○
Canned cycles for drilling	○	○
Circular interpolation by R programming	○	○
3-dimensional coordinate system conversion	○	○
Automatic corner override	○	○
Scaling	○	○
Coordinate system rotation	○	★
Tilted working plane indexing	★	★
Setting and display		
Parameter setting and display	○	○
Alarm display	○	○
Alarm history display	○	○
Operator message history display	○	○
Operator history display	○	○
Run hour and parts count display	○	○
Multi-language display	○	○
Dynamic display language switching	○	○
Erase CRT screen display	○	○
Self-diagnosis function	○	○
Graphic display	○	○
Machining condition selection function	○	○
Feed function		
Rapid traverse rate	○	○
Rapid traverse override	○	○
Feed per minute	○	○
Federate override	○	○
Jog override	○	○
AI contour control II	○	○
Data input/output		
Memory card input/output	○	○
Screen hard copy	○	○
Power Mate CNC manager	○	○
External I/O device control	○	○
Fast data server	○	○
Tool function/Tool compensation		
Tool offset pairs	○	○
Tool offset memory C	○	○
Tool offset	○	○
Tool length measurement	○	○
Automatic tool length measurement	○	○
Tool life management	○	★
Other Function		
Embedded Ethernet	○	○
Fast Ethernet	○	○
PMC system	○	○
PMC function	○	○
I/O Link DI/DO points	○	○
Backlash compensation	○	○
Stored pitch error compensation	○	○

○ Standard ★ Optional accessories function *1 For linear scale. *2 For auto milling head. *3 For mold cutting.

FDW Series Specification list

Item	Unit	FDW-18				FDW-21				FDW-24			
Model	FDW-	1822	1832	1842	1852	2122	2132	2142	2152	2432	2442	2452	
Distance between columns	mm	1850				2150				2450			
Table size	Length	2000	3000	4000	5000	2000	3000	4000	5000	3000	4000	5000	
	Width	1500				1800				2000			
Maximum Table Load	ton	12	15	18	20	12	15	18	20	15	18	20	
T slot	Width× Pitch×No.	22 × 150 × 9				22 × 150 × 11				22 × 150 × 13			
Travel	X-axis	2200	3200	4200	5200	2200	3200	4200	5200	3200	4200	5000	
	Y-axis	1800				2100				2400			
	Z-axis	800 (1100)											
	W-axis	1000 (opt.1500)											
Spindle	Nose to table	120~1920											
	Ram Size	□ 450 × 400											
	Taper / Power / Speed	rmm/kW BBT50 - 22/26kW - 6000rpm with 2 stage gearbox											
Feedrate	Cutting	m/min 12											
	X axis	15	15	12	10	15	15	12	10	15	12	10	
	Y/Z/W axis	m/min 15 / 15 / 5											
Accuracy	mm	Positioning ±0.015/full travel ; Positioning ±0.015/full travel ±0.003 ; Slope of cross-rail 0.01/1000											
Tool magazine	Capacity / Dia	mm 32 tools , max. dia Ø125(Full tool) / Ø220(Adjacent empty)											
	Max.Length / Weight	mm/Kg 400 mm / 20 kg											
	Tool selection	Random shortest direction / M24 P3.0 - 45°											
Machine size	Length	7.2	9.2	11.2	13.2	7.2	9.2	11.2	13.2	9.2	11.2	13.2	
	Width	5.1				5.4				5.7			
	Height	5.1 (6.0)											
Machine Weight (±10%)	ton	40	44	48	52	42	46	50	54	48	53	58	

FDW-28				FDW-32				FDW-36			FDW-42		
2832	2842	2852	2860	3232	3242	3252	3260	3642	3652	3660	4242	4252	4260
2850				3250				3650			4250		
3000	4000	5000	6000	3000	4000	5000	6000	4000	5000	6000	4000	5000	6000
2200				2600				3000					
18	20	22	24	18	20	22	24	22	24	26	22	24	26
28 × 180 × 13				28 × 200 × 13				28 × 200 × 15					
3200	4200	5200	6000	3200	4200	5200	6000	4200	5200	6000	4200	5200	6000
2800				3200				3600			4200		
1100													
1000 (opt.1500/2000)													
145~2245													
□ 450 × 400 (opt.550 × 550)													
BBT50 - 22/26kW - 6000rpm with 2 stage gearbox													
10													
15	12	10	10	15	12	10	10	12	10	10	12	10	10
12 / 12 / 3													
Positioning ±0.015/full travel ; Positioning ±0.015/full travel ±0.003 ; Slope of cross-rail 0.01/1000													
32 tools , max. dia Ø125(Full tool) / Ø220(Adjacent empty)													
400 mm / 20 kg													
Random shortest direction / M24 P3.0 - 45°													
9.2	11.2	13.2	15.0	9.2	11.2	13.2	15.0	11.2	13.2	15.0	11.2	13.2	15.0
6.0				6.4				6.8			7.4		
5.9													
55	60	65	70	58	63	68	73	67	72	77	72	76	80

ⓘ All data will change based on the actual situation without notice.

Standard Accessories

1. FANUC 0iMF + 10.4" LCD
2. Spindle cooler
3. Spindle air blast
4. N2 Counter balancing system
5. Dual stage H/L planetary gearbox
6. Independent auto lubrication system
7. Program end alarm lamp
8. Rigid tapping
9. Electric cabinet heat exchanger
10. USB/RS232/Ethernet interface
11. Coolant system
12. Dual spiral type chip remover
13. Metal belt chip conveyor with cart
14. Chain type ATC 32pcs
15. Semi-enclosure splash guard (FDW-18/21/24)
16. Open type splash guard (FDW-28/32/36/42)
17. ATC auto door
18. Foot switch for tool away
19. Working lamp
20. Leveling screw + foundation bolts
21. Tool kit & Operator's manual
22. Air/water cleaning equipment
23. W axis linear scale (2 pcs)

Optional Accessories

1. X travel 7m / 8m / 9m / 10m
2. Mitsubishi / Siemens / Heidenhain Controller
3. High speed Spindle (8000~20000rpm)
4. Coolant Through Spindle (CTS)
5. 90° milling head (Auto, Semi-auto, Manual)
6. Extend milling head (Auto, Semi-auto, Manual)
7. AC swiveling milling head (Auto, Manual)
8. AHC system (for auto milling head)
9. Toggle head stand (for semi-auto / Manual milling head)
10. Five face milling head (Fixed type)
11. Universal milling head (Fixed type, Manual)
12. 5 axis simultaneous milling head
13. Y travel extend 650mm (for Auto 5F machining)
14. Transformer
15. X, Y, Z axis linear scale
16. Tool length measurement
17. Auto work piece measurement
18. CNC rotary table (indexed/simultaneous)
19. Coolant thru tool holder device
20. Full enclosure splash guard
21. Oil skimmer
22. Spindle power 30/37 kW with gearbox
23. Heavy duty RAM 550x550 (FDW-28 and up)

Machine Layout & Dimension

