



HEAVY DUTY DOUBLE COLUMN MACHINING CENTER

DCM SERIES

Model: DCM 18 / 21 / 24
28 / 32 / 36

DCMS SERIES

Model: DCMS 24 / 28 / 32 / 36
42 / 48 / 54

CNC-TAKANG

CNC-TAKANG CO., LTD.
MANUFACTURER & EXPORTER

DCM-SERIES

FEATURES

- **Excellent structural rigidity**

Cast iron components use FEA (Finite Element Analysis) to optimize rigidity and anti-vibration properties. Prevents cutting resonance, prolongs tool life and increases work piece accuracy and production capabilities.

- **Optimized spindle box**

Optimized design, rectangular ratio 1:1.125 provides rigid Z axis travel. Spindle box interior has rib reinforcements to increase cutting and feeding rigidity and stability.

- **Optimized Z axis balance system**

Twin N₂ tank counter-balance loop design. Driver set firmly attached to Z axis. Provides precision response to servo motor and high thrust machining requirements on Z axis.

- **Optimized feeding system**

X, Y, Z axes are coupled with heavy duty, high precision class P linear guideways, with 0.003-0.005 mm low friction, low viscosity, optimizes high driven sensitivity and increases great dynamic accuracy.

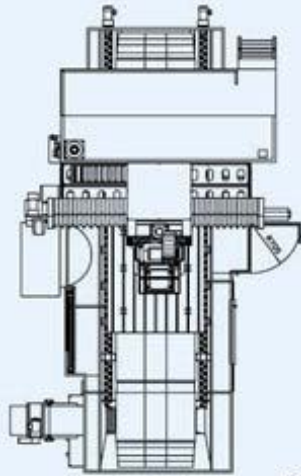
- **Optimized feed structure system**

Three axes coupled with class C3 precision ball screws. Properly pretension from the ends to reduce thermal displacement. Absolute value coordinate system eliminates structural complexity. Ballscrews are specially designed with anti-ram protection devices on the ends.

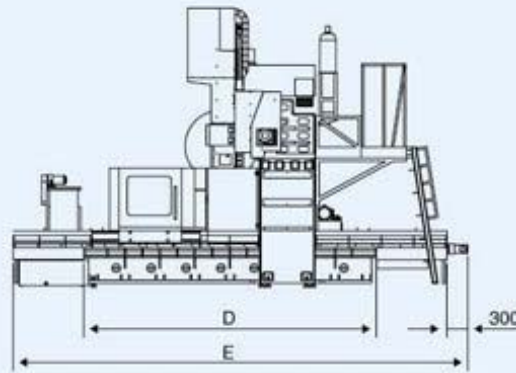
Powerful spindle, high cutting capabilities

- The BT50 spindle, diameter 100mm, coupled with class P4 precision angular bearings reaches 6000rpm. High torque spindle motor with 1:4 ZF-2K250 precision high/low speed gear box satisfies cutting requirements in all fields with sufficient horse power and torque.

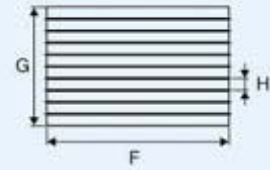
■ DIMENSION Unit: mm



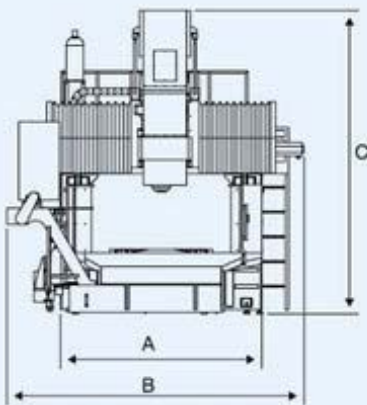
TOP VIEW



SIDE VIEW



TABLE



FRONT VIEW



DCM	1822	1827	1832	1842	1852	2142	2152	2442A	2452A	2432	2442	2452	2460
A	2650					2950		3250		3660			
B	3910					4210		4510		5590			
C	4250			4550		4550		4550		5450			
D	4200	5200	6200	8200	10200	8200	10200	8200	10200	6200	8200	10200	11900
E	6900	7900	9100	11100	13100	11100	13100	11100	13100	9200	11200	13200	14600
F	2300	2800	3300	4300	5300	4300	5300	4300	5300	3300	4300	5300	6200
G	1500					1800		2000		2000			2200
H	150			250		250		250		180		250	

DCM Series



2832	2842	2852	2860	3242	3252	3260	3642	3652	3660
4060				4460			4850		
5990				6390			8260		
5450				5450			5685		
6200	8200	10200	11900	8200	10200	11900	8200	10200	11900
9200	11200	13200	14600	11200	13200	14600	11200	13200	14600
3300	4300	5300	6200	4300	5300	6300	4300	5300	6300
2200				2600			3000		
180				180			200		

DCM Series

■ HIGH RIGIDITY STRUCTURE

▼ CROSSBEAM

High rigidity, extra wide, box type , stair style structural design optimizes Y and Z axes static rigidity and dynamic precision.



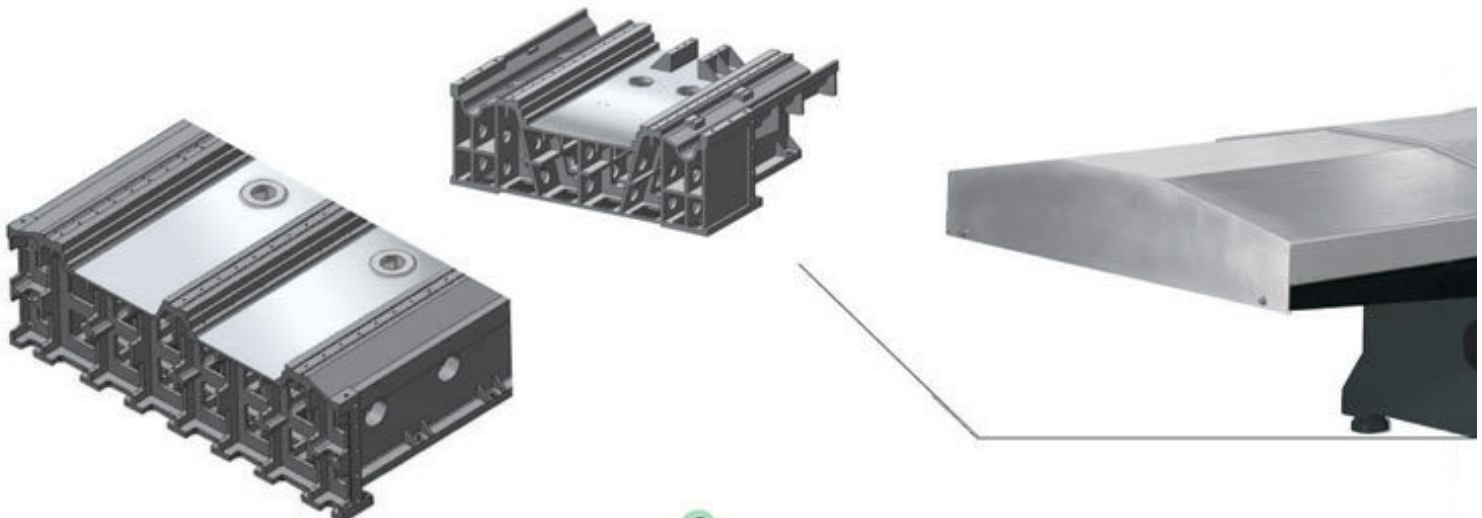
► WORK TABLE

Unique double deck enclosed structure design coupled with extensive high rigidity "HGH" linear guideways to carry heavy duty work pieces. Provides high rigidity and stability, smooth motion and low friction.



▼ BASE

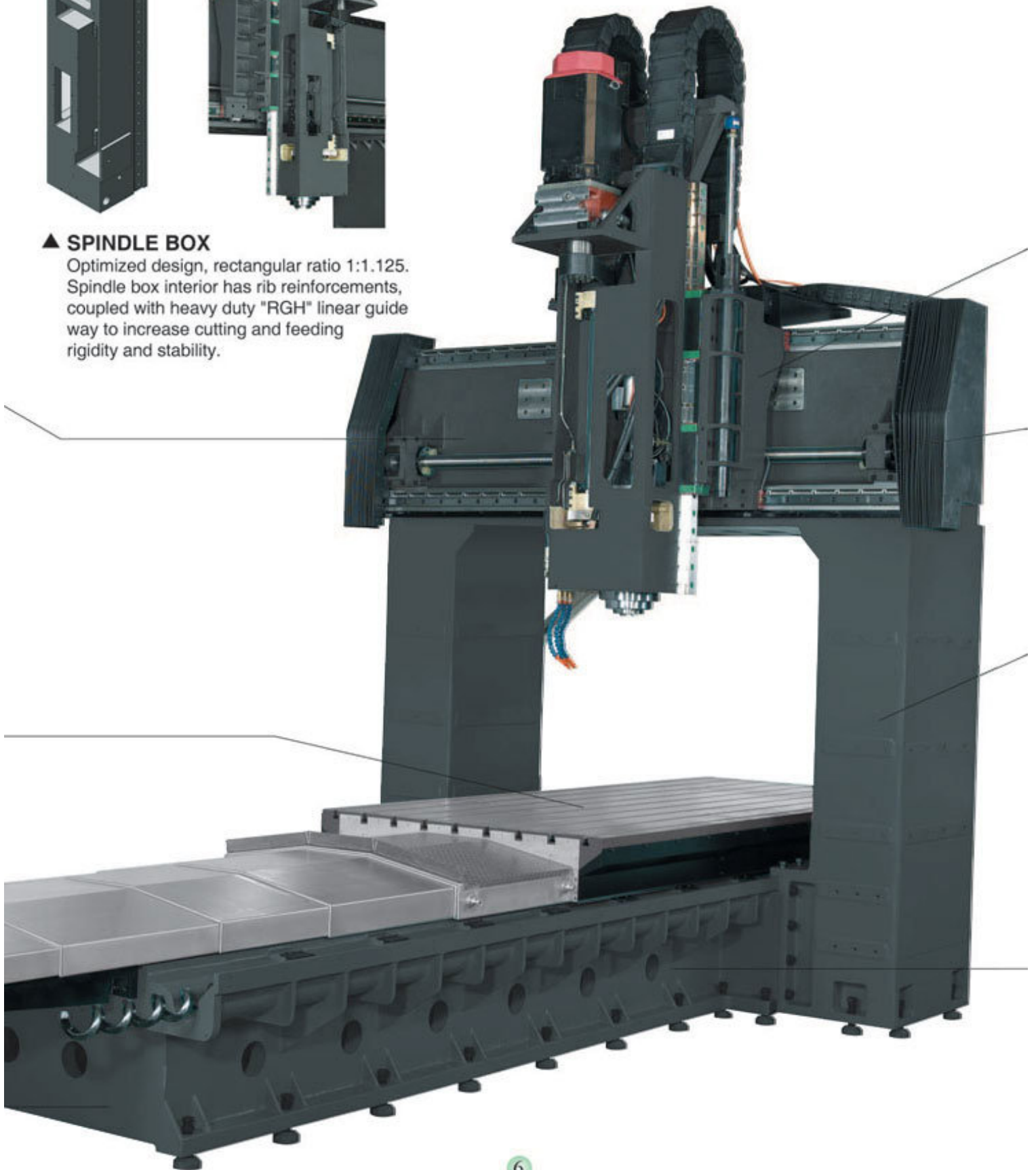
The rigid box structure with one piece thick walled and ribbed design chip trough (DCM 18 / 21 series); three linear guideways (DCM 24 / 28 / 32 series); reinforced extra wide doorway and high rigidity and dynamic accuracy. (DCM2852 base weight 23.5 ton)





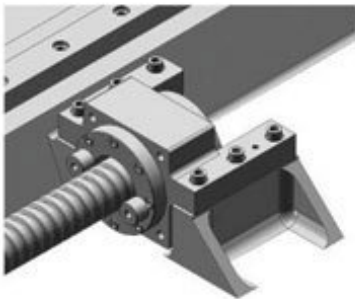
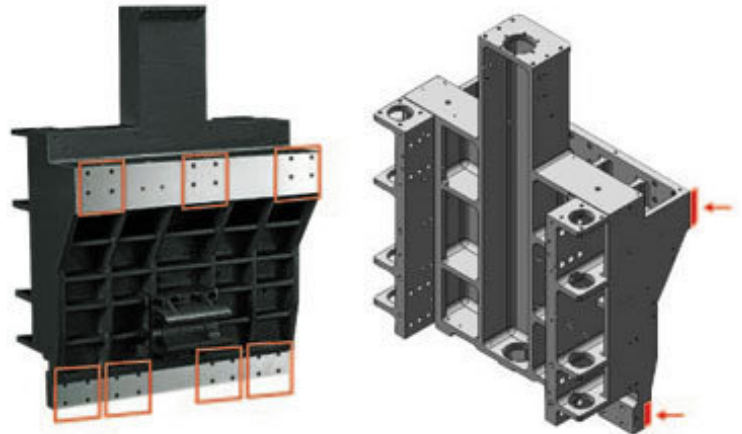
▲ SPINDLE BOX

Optimized design, rectangular ratio 1:1.125. Spindle box interior has rib reinforcements, coupled with heavy duty "RGH" linear guide way to increase cutting and feeding rigidity and stability.



► SLIDEWAY BRACKET

Unique slideway design, there are four "HGH" ballscrew slide blocks on the lower slideway, and three on the upper slideway are coupled with stair style support. Ensure high strength and stability.

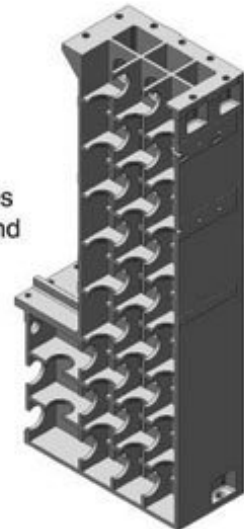


◀ BALLSCREWS AND BEARING BASE

X, Y, Z axes coupled with class C3 precision ballscrews reduce thermal displacement. Ballscrew ends are pretensioned and specially designed with anti-ram to protect machine in case of programming error cause over travel.

► VERTICAL COLUMN

Box-in-box reinforced column structural design replaces conventional hollow design, enhanced anti-pressure and anti-vibration.



◀ REINFORCED RIBS

Extra wide and thick ribs reinforce base rigidity, absorb vibration and resist curving. One piece design for chip removal trough.

DCM / DCMS Series

■ QUALITY ASSURED



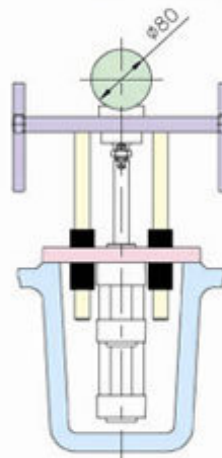
◀ Slide block length coverage about 80% provides strong support, excellent dynamic rigidity.



◀ Accumulator Closed Loop Balance System Dual nitrogen tanks balance system, tank pressure and spindle head achieve automatic balancing.



◀ Precision hand scraping replaces spacers in column and horizontal beam, increases strength and rigidity.



◀ Long screw multi-point supported by complete enclosed pneumatic loop. Pressure difference + 0.05kg/cm² per 1.5m maintains screw straightness.



▲ Hand scraped base increases precision and rigidity of the column and base.



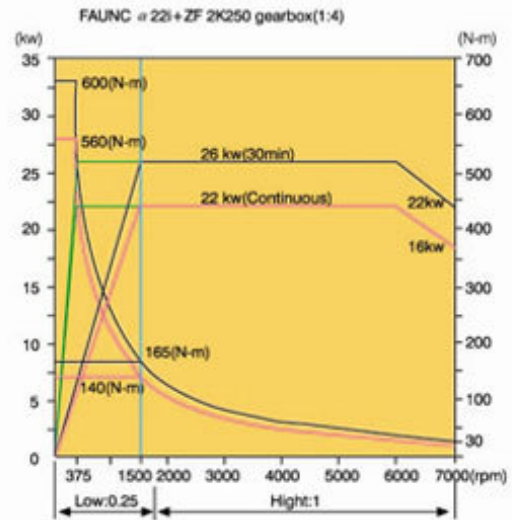
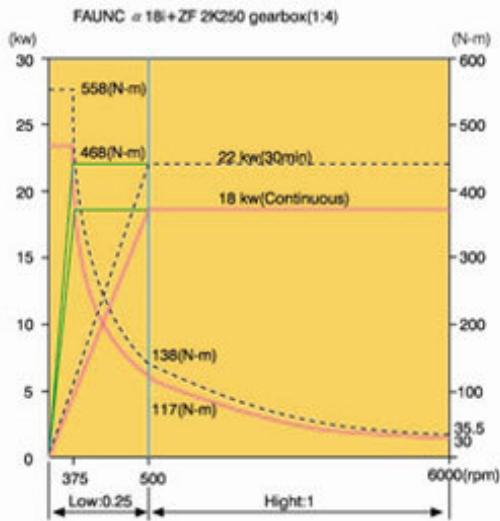
▲ DCMS series, 100 mm interval between column slide blocks. Double lined design optimized moving accuracy.

■ ENSURED ACCURACY



◀ Whole series precision laser calibrated for straightness and surface roughness.

■ SPINDLE HORSEPOWER AND TORQUE GRAPHS

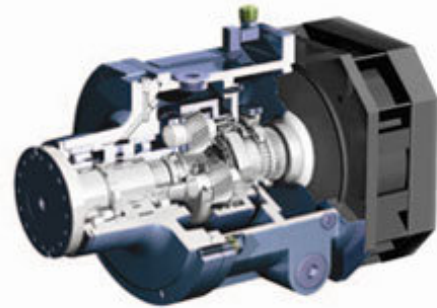


■ POWERFUL CUTTING CAPABILITIES



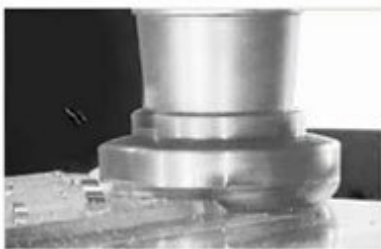
HIGH EFFICIENCY SPINDLE

Spindle uses class P4 angular contact bearings, exterior with oil coolant recycling, prevents thermal deformation of spindle.



TWO SPEED ZF GEAR BOX

Spindle uses ZF DUOPLAN two speed gearbox (1:4). High torque, high efficiency, low noise, fully enclosed / lubricated speed change gearbox.



SURFACE MILLING

Dia.150 mm, 350 rpm, t = 8mm
400 mm/min, SP load 70%
X load 28%, S45C, RMS12s



DRILLING

Dia.48 mm, 1200 rpm, S45C
30 mm/min, Z load 80%
tolerance + 0.1 mm

DCM / DCMS Series

■ BUILT-IN SPINDLE

Taper	HSK-A100	HSK-A63
Speed (rpm)	10000	24000
Power (Kw)	50/65	40/52
Torque (Nm)	357	96



HSK-A100



HSK-A63

■ OPTIONS (MILLING HEAD)



Manual 90° head



90° head with auto 5° indexing



Extended vertical head



Extended horizontal head

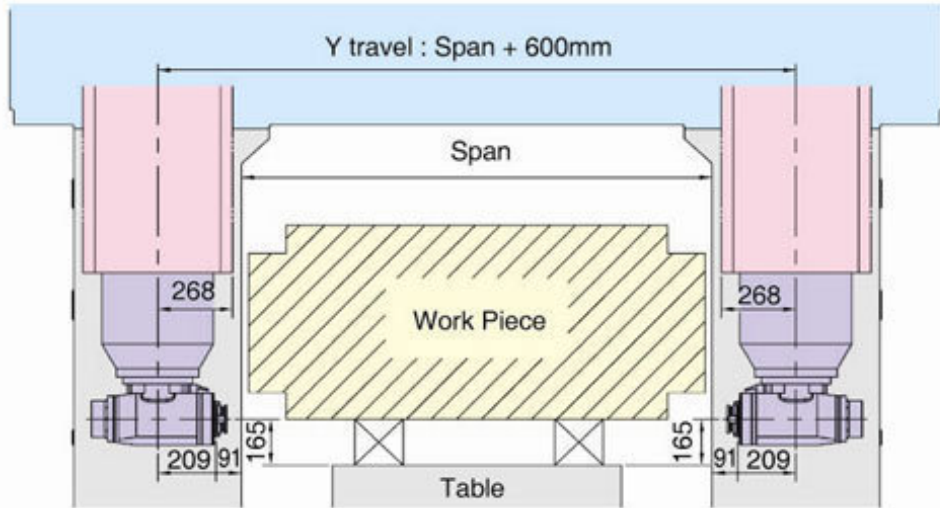


Universal head



Universal head for B & C axis

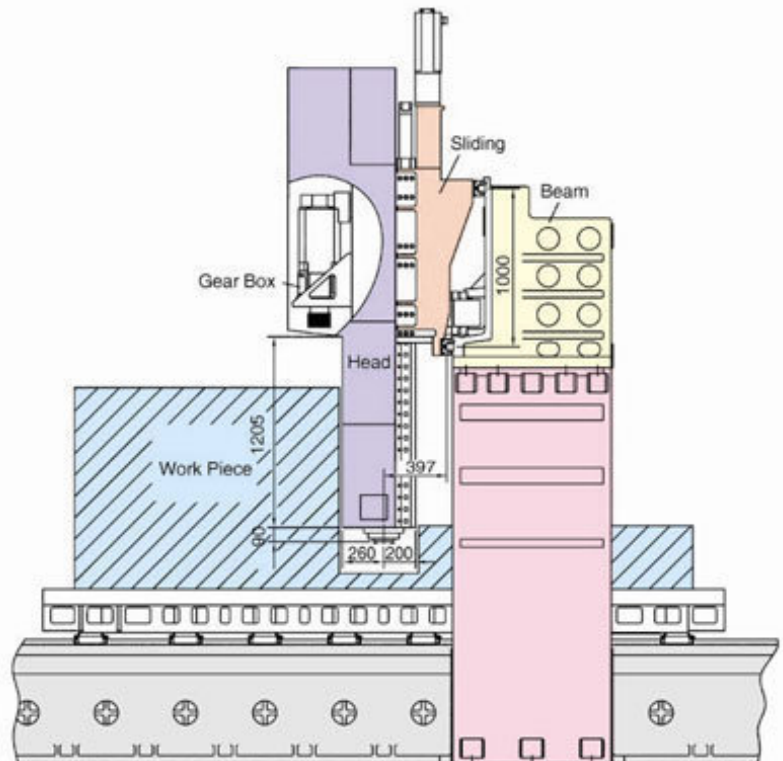
■ MAIN FEATURES



" π " Type horizontal beam; Y axis travel increased by 600 mm, allows for larger work pieces. (Option for DCM/DCMS18/21/24/28/32/36/42/48/54 series with 90 degree / universal head)



Low distance between spindle head and horizontal beam linear guideway; provides heavy duty cutting precision.



Spindle motor attached to top of spindle head; assists deep hole machining for large work pieces, and effectively protects spindle from thermal displacement.

DCM / DCMS Series

■ STANDARD ACCESSORIES



Spindle oil chiller



Adjustable axial motor



Two sets oil lubricator



High rigidity linear guideway and ball screw

■ OPTIONS



DCM-XX60 and DCMS full series X axis driven by heavy duty reduction gear (1:3)



Coolant cooler



DCMS series machines are precision gear driven when X axis travel is longer than 11M or displacement is faster than 10M/min.



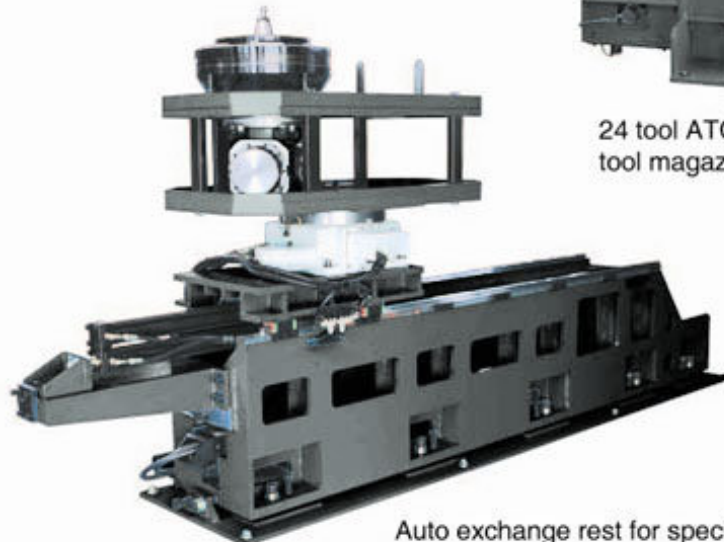
Horizontal and vertical ATC hydraulic tool magazine



24 tool ATC rotary tool magazine

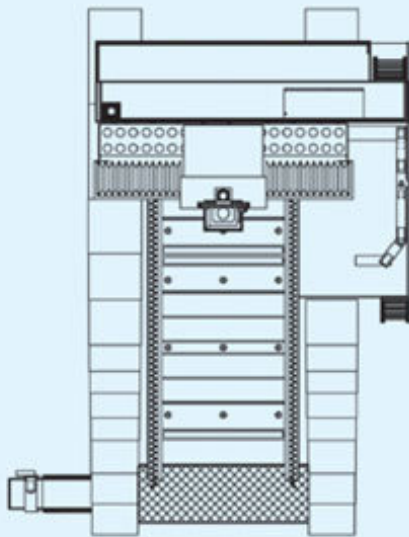


Special milling head rest

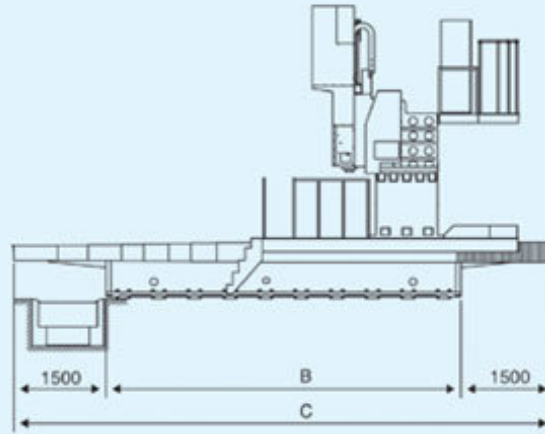


Auto exchange rest for special spindle head

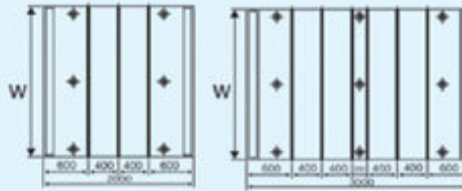
■ DIMENSION Unit: mm



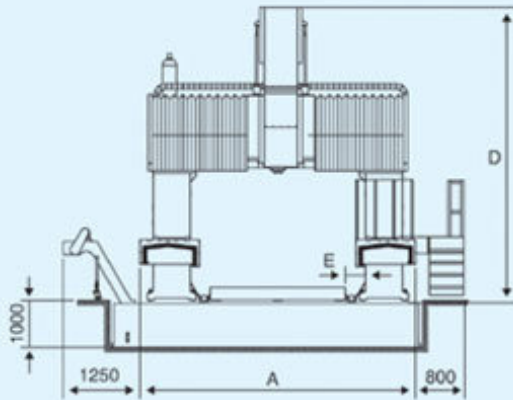
TOP VIEW



SIDE VIEW



TABLE

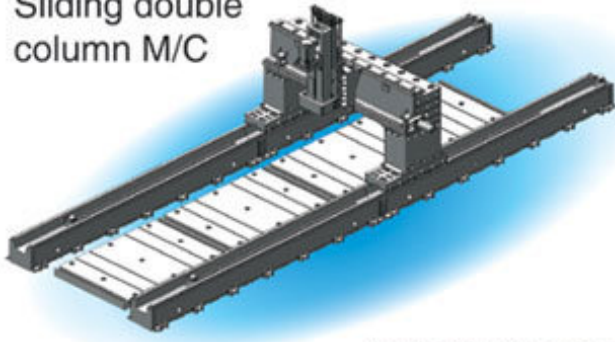


FRONT VIEW



DCMS	2460	2470	2480	2490	24100	24110	2860	2870	2880	2890	28100	28110	3260	3270	3280	3290	32100	32110	3660	3670	
A	3850						4250						4650								
B	8060	9060	10060	11120	12120	13120	8060	9060	10060	11120	12120	13120	8060	9060	10060	11120	12120	13120	8060	9060	
C	11060	12060	13060	14160	15120	16120	11060	12060	13060	14160	15120	16120	11060	12060	13060	14160	15120	16120	11060	12060	
D																					
E	220						320						320								
W	2000						2200						2600								

Sliding double column M/C



3680	3690	36100	36110	4260	4270	4280	4290	42100	42110	4860	4870	4880	4890	48100	48110	5460	5470	5480	5490	54100	54110
5050				5650						6250						6850					
10060	11120	12120	13120	8060	9060	10060	11120	12120	13120	8060	9060	10060	11120	12120	13120	8060	9060	10060	11120	12120	13120
13060	14160	15120	16120	11060	12060	13060	14160	15120	16120	11060	12060	13060	14160	15120	16120	11060	12060	13060	14160	15120	16120
5120																					
320				320						320						320					
3000				3600						4200						4600					

DCM / DCMS Series

SPECIFICATIONS

MODEL	DESCRIPTION	DCM 18 Series					DCM 21 Series		DCM 24 Series			
		1822	1827	1832	1842	1852	2142	2152	2442A	2452A	2432	2442
TABLE	Length	2300mm (90.5")	2800mm (110.2")	3300mm (129.9")	4300mm (169.3")	5300mm (208.6")	4300mm (169.3")	5300mm (208.6")	4300mm (169.3")	5300mm (208.6")	3300mm (129.9")	4300mm (169.3")
	Width	1500mm (59")					1800mm (70.8")		2000mm (78.7")			
	T-slot (width x pitch x number)	22mm x 150mm x 9 (0.86" x 5.9" x 9)			22mm x 250mm x 5 (0.86" x 9.8" x 5)		22mm x 250mm x 7 (0.86" x 9.8" x 7)				28mm (1.1")	
	Maximum load	12000 kgs			13000 kgs		15000 kgs		16000 kgs			
TRAVEL	Longitudinal travel (X axis)	2200mm (86.6")	2700mm (106.3")	3200mm (126")	4200mm (165.3")	5200mm (204.7")	4200mm (165.3")	5200mm (204.7")	4200mm (165.3")	5200mm (204.7")	3200mm (126")	4200mm (165.3")
	Cross travel (Y axis)	1800mm (70.8")					2100mm (82.6")		2400mm (94.5")			
	Vertical travel (Z axis)	800mm (31.5")										
	Distance from spindle end to table	200mm ~ 1000mm (7.8" ~ 39.3")			375mm ~ 1175mm (14.7" ~ 46.2")							
	Distance from spindle center to column	427mm (16.8")										
	Distance between columns	1850mm (72.8")					2150mm (84.6")		2450mm (96.5")			
SPINDLE	Spindle drive motor (Con. / 30 min)	18.5 kw / 22 kw										
	Spindle speed	6000 rpm										
	Spindle taper	BT50										
FEED	Cutting feedrate	5 ~ 8000 mm/min										
	Rapid traverse (X / Y / Z)	20 / 20 / 15 M/min					15 / 15 / 15 M/min					
	Axis motor (X / Y / Z)	α130 / α130 / α130 (7 / 7 / 7 kw)					α140 / α130 / α130 (6 / 7 / 7 kw)					
ATC	Tool storage capacity	24 tools										
	Tool size	ø125mm (4.9")										
	Max. tool size	ø200mm (7.87")										
	Max. tool length	400mm (15.7")										
	Max. tool weight	28 kgs										
MISCELLANEOUS	Power requirement	50 KVA										
	Pneumatic requirement	6 kgs/cm ²										
	Machine size length	6400mm (252")	7400mm (292")	8400mm (331")	10400mm (410")	12400mm (489")	10400mm (410")	12400mm (489")	10400mm (410")	12400mm (489")	9400mm (370")	11400mm (449")
	Machine size width	4550mm (180")					4850mm (191")		5150mm (203")		5600mm (221") / 5900mm	
	Machine size height	4570mm (180")					4850mm (191")					
	Machine weight	24 ton	27 ton	30 ton	40 ton	46 ton	43 ton	50 ton	48 ton	55 ton	45/49 ton	51/55 ton

MODEL	DESCRIPTION	DCMS-24	DCMS-28	DCMS-32	DCMS-36	DCMS-42	DCMS-48	DCMS-54	
TABLE	Length	From 6000mm to 36000mm, in step of 1000mm (From 236" to 1417", in step of 39.4")							
	Width	2000mm (78.7")	2200mm (86.6")	2600mm (102.4")	3000mm (118.1")	3600mm (141.7")	4200mm (165.4")	4600mm (181.1")	
	T-slot (width x pitch)	28mm x 400mm (1.1" x 15.7")							
	Maximum load	2500 kg/m ²							
TRAVEL	Longitudinal travel (X axis)	From 6000mm to 36000mm, in step of 1000mm (From 236" to 1417", in step of 39.4")							
	Cross travel (Y axis)	2400mm (94.5")	2800mm (110.2")	3200mm (126")	3600mm (141.7")	4200mm (165.4")	4800mm (189")	5400mm (212.5")	
	Vertical travel (Z axis)	1100mm (43.3") / 1400mm (55.1") (OPT.)							
	Distance from spindle end to table	820mm ~ 1920mm (32.3" ~ 75.6") / 820mm ~ 2220mm (32.3" ~ 87.4") (OPT.)							
	Distance from spindle center to column	427mm (16.8")							
	Distance between columns	2450mm (96.5")	2850mm (112.2")	3250mm (127.9")	3650mm (143.7")	4250mm (167.3")	4850mm (190.9")	5450mm (214.6")	
SPINDLE	Spindle drive motor (Con./30min)	22 kw / 26 kw / 30 kw / 37 kw (OPT.)							
	Spindle speed	6000 rpm							
	Spindle taper	BT 50							
FEED	Cutting feedrate	5 ~ 8000 mm/min							
	Rapid traverse (X / Y / Z)	10 / 12 / 12 M/min							
	Axis motor (X / Y / Z)	α140 (with FAN) x2 / α140 / α130, (9 x 2 / 6 / 7 kw)							
ATC	Tool storage capacity	24 tools							
	Tool size (full tools)	ø125mm (4.9")							
	Max. tool size (next pocket empty)	ø220mm (8.6")							
	Max. tool length	400mm (15.7")							
	Max. tool weight	28 kgs							
MISCELLANEOUS	Power requirement	70 KVA / 80 KVA (with 30 kw / 37 kw spindle motor) (OPT.)							
	Pneumatic requirement	6 kgs/cm ²							
	Machine size length	From 11060mm to 41060mm, in step of 1000mm (From 435.4" to 1616.5", in step of 39.4")							
	Machine size width	5100mm (201")	5500mm (217")	5900mm (233")	6300mm (248")	6900mm (272")	7500mm (296")	8100mm (319")	
	Machine size height	5120mm (202") / 6020mm (237") (when Z axis with 300mm extension) (OPT.)							
	Machine weight	58 up ton	68 up ton	80 up ton	93 up ton	111 up ton	129 up ton	137 up ton	

		DCM 28 Series				DCM 32 Series			DCM 36 Series		
2452	2460	2832	2842	2852	2860	3242	3252	3260	3642	3652	3660
5300mm (208.6")	6200mm (244")	3300mm (129.9")	4300mm (169.3")	5300mm (208.6")	6200mm (244")	4300mm (169.3")	5300mm (208.6")	6200mm (244")	4300mm (169.3")	5300mm (208.6")	6200mm (244")
		2200mm (86.6")				2600mm (102.3")			3000mm (118.1")		
28mm x 180mm x 11 (1.1" x 7" x 11)		28mm x 180mm x 13 (1.1" x 7" x 13)				28mm x 180mm x 15 (1.1" x 7" x 15)			28mm x 200mm x 15 (1.1" x 7.8" x 15)		
20000 kgs		22000 kgs				24000 kgs			26000 kgs		
5200mm (204.7")	6000mm (236.2")	3200mm (126")	4200mm (165.3")	5200mm (204.7")	6000mm (236.2")	4200mm (165.3")	5200mm (204.7")	6000mm (236.2")	4200mm (165.3")	5200mm (204.7")	6000mm (236.2")
		2800mm (110.2")				3200mm (126")			3600mm (141.7")		
		800mm (31.5") / 1100mm (43.3")(OPT.)							1100mm (43.3") / 1400mm (55.1")(OPT.)		
		300mm-1100mm / 300mm-1400mm (OPT.) (11.8" ~ 43.3") / (11.8" ~ 55.1") (OPT.)							300mm-1400mm / 300mm-1700mm (OPT.) (11.8" ~ 55.1") / (11.8" ~ 66.9") (OPT.)		
		435mm(17.1")							473mm(18.6")		
		2850mm (112.2")				3250mm (128")			3650mm (143.7")		
22 kw / 25 kw											
8000 mm/min											
15 / 15 / 12 M/min											
α140 / α130 / α130 (6 / 7 / 7 kw)											
24 tools											
25mm (4.9")											
30mm (7.8")											
35mm (15.7")											
28 kgs											
BT50 45°											
60 KVA											
3 kgs/cm ²											
13400mm (528")	15400mm (607")	9400mm (370")	11400mm (449")	13400mm (528")	15400mm (607")	11400mm (449")	13400mm (528")	15400mm (607")	11400mm (449")	13400mm (528")	15400mm (607")
(272") (OPT.) with AAC		6000mm (236") / 7300mm (288") (CPT.) with AAC				6400mm (252") / 7700mm (302") (CPT.) with AAC			8300mm (327")		
4700mm (185") / 5600mm (221") (OPT.) with Z axis 300mm extension									5600mm (221") / 7500mm (296") (OPT.) with Z axis 300mm extension		
58/62 ton	65/69 ton	51/55 ton	57/61 ton	64/68 ton	71/75 ton	56/61 ton	62/67 ton	68/73 ton	65/71 ton	72/78 ton	79/85 ton

※ THE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

STANDARD ACCESSORIES:

- Spindle oil chiller
- Spindle air blast
- Auto coolant, hydraulic & lubrication system
- Rigid tapping
- Electrical cabinet air condition
- Operation status light
- RS-232 port
- Air/water cleaning equipment
- Screw type twin chip conveyors
- Chain type chip conveyor
- Cam type 24 tool ATC
- Auto door for ATC
- ZF gear box (DUOPLAN 2K250 H/L)
- Work light
- Semi-enclosed splash guard
- Foot switch for tool away
- FANUC 0iMC (DCM) or 18iMB(DCMS)
- Tool box with tools
- Maintenance & operation manuals

OPTIONS:

- Built-in spindle 8000/10000 rpm
- 30 / 37 kw spindle motor
- High pressure coolant thru spindle
- Coolant thru tool holder
- Coolant cooler
- Tool presetter
- Auto workpiece measurement
- Linear scale
- Work table raiser
- Manual 90° head
- 90° head with auto 5° indexing
- Extended vertical head
- Extended horizontal head
- Universal head
- Universal head for B & C axis
- CNC rotary table
- Auto exchange rest for special spindle head
- DATA server
- AI nano HPCC
- ZF gear box (DUOPLAN 2K300 H/L)
- Oil skimmer
- Extra tool magazine (32, 40, 60, 80, 120 tools)
- Fully enclosed splash guard (DCM series)
- Transformer (Power supply except 220V)
- CE mark

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