



CAMDER GS/G series

Coordinate Advance Milling and Drilling Machine **[Premium Version]** 五轴钻铣复合机床 **[高精版]**



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www.wim.hk



*key breakthrough on lifter hole machining
深孔加工重大突破, 斜頂杆孔加工利器*

GS/G-2019.5

Key Breakthrough on Lifter Hole Machining
深孔加工重大突破，斜顶杆孔加工利器



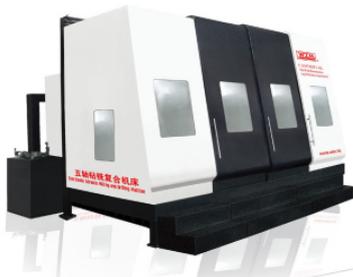
Background to Excellence

过去与未来



Heavy duty milling function
& servo motor rotary table
重型铣削功能及伺服回转台

2014



With ejector drilling function, Max. diameter is 65mm
兼容喷吸钻功能, 孔径最大可达65mm

2015



Never give up on
perfection and innovation
产品形象不断升级

2017

2018

Technology Research Center of 6-axis Coordinate Advance
Milling and Drilling Machine in Guangdong Province.
广东省五轴钻铣复合机床工程技术研究中心

2019

New series GS/G to conquer the difficulty
on lifter hole machining
全新推出: 五轴钻铣复合机床 GS/G 系列产品
解决行业斜料孔加工难题

WIM developed the first multi-axis deep hole drilling machine
环球研发第一台万能深孔钻

2008

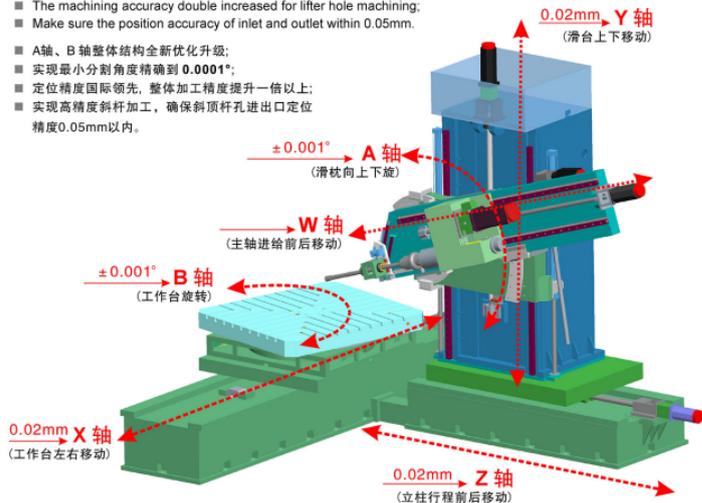


Best Suitable for Lifter Hole Machining

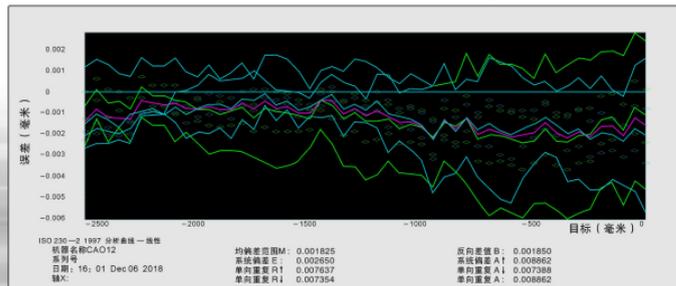
斜顶杆孔加工利器

- Full optimization on the accuracy of A, B axis;
- Minimum indexing angle 0.0001° to achieve the world leading level;
- The machining accuracy double increased for lifter hole machining;
- Make sure the position accuracy of inlet and outlet within 0.05mm.

- A轴、B轴整体结构全新优化升级;
- 实现最小分割角度精确到 0.0001° ;
- 定位精度国际领先, 整体加工精度提升一倍以上;
- 实现高精度斜杆加工, 确保斜顶杆孔进出口定位精度0.05mm以内。



上图为各轴定位精度 (above is the position accuracy of each axis)



Five Face Double Column Machining Center
五面体龙门加工中心 (SNK Travel (行程) :
6250mm x 2900mm x 1400mm



Parts under manufacturing by SNK Machining Center
SNK 加工中心 - 加工部件



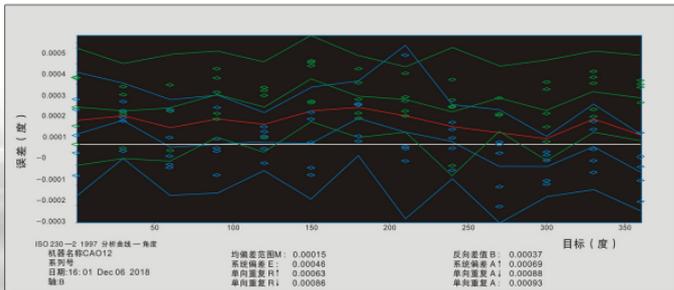
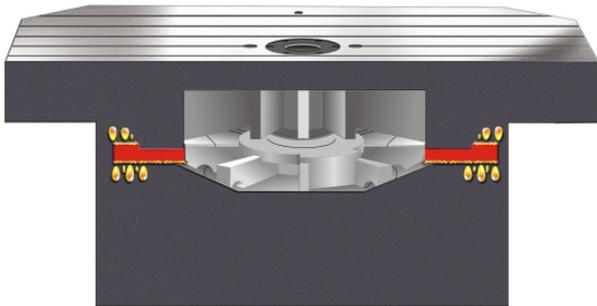
Parts under manufacturing by
DYNAMILL Machining Center
DYNAMILL G5 加工母机



Hydrostatic Slideway Rotary Table

封闭式静压油浮工作台

- High rigid body structure. The worktable can support 10 tons workpiece deviate from the table center 400mm without overturning.
- Equip with Heidenhain rotary encoder to ensure the accuracy.
- Dual gear box to eliminate the backlash to enhance the accuracy.
- The work table is driven by a high precision helical gear, provide the most smooth movement and 0.0001 indexing.
- 封闭式静压油浮结构设计，工作台抗倾覆能力强（10吨重工作可偏离工作中心400毫米位置）。
- 德国海德汉角度光栅闭环控制回转角度，保证持久高精度。
- 双齿轮机械消除传动间隙和反转反向间隙，大幅提升精度。
- 工作台运用高精度斜齿驱动，运行平稳，实现万分之一的精密分割角度。



The deviation for lifter holes measured by CMM 三坐标实测斜顶杆孔进出口精度

单位	位置20-副20
X	71.161 71.149 -0.012
Y	153.400 153.400 0.000
Z	54.137 54.123 -0.014
D	28.500 28.491 -0.009

单位	位置3-副4
X	100.612 100.603 -0.009
Y	-3.245 -3.254 -0.009
Z	32.041 32.027 -0.014
D	28.500 28.496 -0.004

单位	位置28-副28
X	140.000 139.985 -0.015
Y	153.208 153.202 -0.006
Z	11.448 11.428 -0.020
D	28.500 28.496 -0.004

单位	位置5-副6
X	140.000 139.987 -0.013
Y	-3.985 -3.991 -0.006
Z	53.487 53.496 -0.022
D	28.500 28.499 -0.001

单位	位置22-副22
X	208.839 208.824 -0.014
Y	153.388 153.404 0.006
Z	54.137 54.115 -0.022
D	28.500 28.496 -0.004

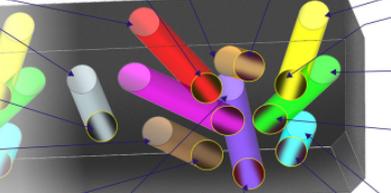
单位	位置7-副8
X	119.387 119.373 0.014
Y	-3.200 -3.255 0.056
Z	32.040 32.025 -0.015
D	28.500 28.498 -0.004

单位	位置26-副26
X	232.820 232.809 -0.011
Y	156.162 156.167 0.005
Z	0.000 -0.006 -0.006
D	28.500 28.494 -0.008

单位	位置11-副12
X	157.192 157.186 -0.006
Y	-6.022 -6.019 0.003
Z	0.000 -0.014 0.014
D	28.500 28.492 -0.008

单位	位置1-副2
X	0.000 -0.002 0.002
Y	0.000 -0.004 0.004
Z	28.500 28.496 -0.004

单位	位置32-副32
X	58.250 58.231 -0.019
Y	154.296 154.291 -0.005
Z	-54.185 -54.181 0.004
D	28.500 28.471 -0.029



单位	位置13-副14
X	101.124 101.110 -0.014
Y	-4.152 -4.156 -0.003
Z	-31.916 -31.914 0.003
D	28.500 28.481 -0.019

单位	位置29-副29
X	140.000 139.988 -0.012
Y	153.208 153.211 0.004
Z	-11.448 -11.462 -0.013
D	28.500 28.487 -0.013

单位	位置16-副16
X	140.000 139.990 -0.010
Y	-3.686 -3.683 0.003
Z	-53.488 -53.498 -0.010
D	28.500 28.485 -0.015

单位	位置17-副18
X	178.875 178.851 -0.024
Y	-4.156 -4.150 0.006
Z	-31.916 -31.920 -0.004
D	28.500 28.499 -0.011

单位	位置34-副34
X	221.748 221.723 -0.026
Y	-154.292 154.299 0.007
Z	-54.184 -54.184 0.000
D	28.500 28.481 -0.019



6-Axis Coordinate Advance Milling and Drilling Machine GS series

五轴钻铣复合机床GS系列：

Equipped with advanced FANUC 6-axis CNC system with AICC high precision contour machining, it is deep hole drilling machine integrated with milling function.

配备先进的 FANUC 六轴数控系统, 具备 AICC 高精度轮廓加工, 集铣削、深孔加工为一体, 性能卓越。

刮研卓越铲花技术

确保 高精 密铲花品质

Excellent Skill in Hand Scraping

Ensure High Precision and High Quality



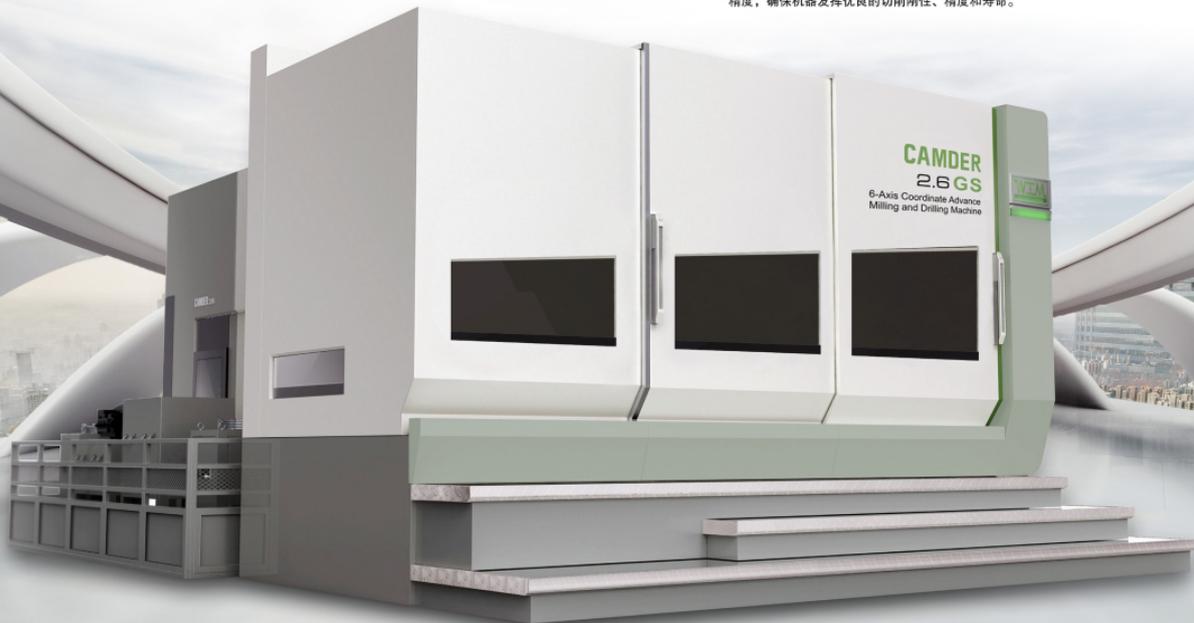
Hand scraped on key components to enhance the geometric accuracy and long-term reliability.

对各项关键零件进行精密铲花(刮研), 达到良好的几何精度, 确保机器发挥优良的切削刚性、精度和寿命。



Hand scraped by our specialists.

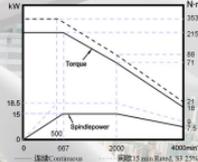
经验丰富的刮研技师亲自修整, 确保优良品质。



Excellent performance 优异的加工性能

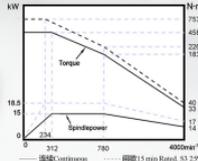
CAMDER*2.6GS Spindle Power/Torque Diagram

CAMDER*2.6GS 主轴功率/扭矩图



CAMDER*3.6GS Spindle Power/Torque Diagram

CAMDER*3.6GS 主轴功率/扭矩图

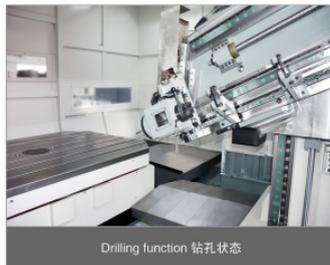


6-Axis Coordinate Advance Milling and Drilling Machine G series

五轴钻铣复合机床G系列：

Equipped with advanced FANUC 6-axis CNC system with AICC II high precision contour machining, it is deep hole drilling machine integrated with milling function.

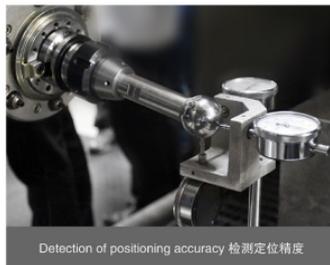
配备先进的 FANUC 六轴数控系统，具备 AICC II 高精度轮廓加工，集铣削、深孔加工为一体，性能卓越。



Drilling function 钻孔状态



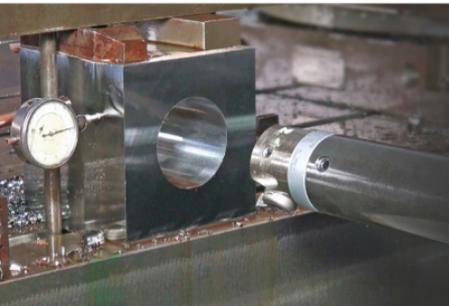
Milling function 铣削状态



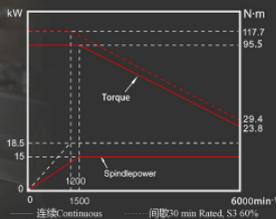
Detection of positioning accuracy 检测定位精度



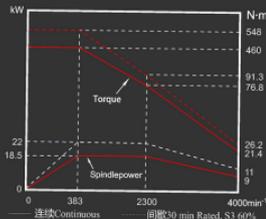
FANUC 数控系统



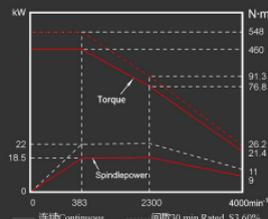
CAMDER* 1.6G Spindle Power / Torque Diagram
CAMDER* 1.6G 主轴功率 / 扭矩图



CAMDER* 2.6G Spindle Power / Torque Diagram
CAMDER* 2.6G 主轴功率 / 扭矩图



CAMDER* 3.6G Spindle Power / Torque Diagram
CAMDER* 3.6G 主轴功率 / 扭矩图



Specifications 规格参数

型号 Model		单位 Unit	2.6GS	3.6GS	1.6G	2.6G	3.6G
加工能力 Drilling capacity	枪钻钻孔直径	Gun drill machining hole diameter	mm	3 ~ 50	3 ~ 40		3 ~ 50
	喷吸钻钻孔直径	Ejector drill machining hole diameter	mm	18 ~ 50	18 ~ 65	-	18 ~ 65
	枪钻最大钻孔深度	Maximum drilling depth in gun drill operation	mm	1500 + 550		1200 + 500	1500 + 550
	喷吸钻最大钻孔深度	Maximum drilling depth in ejector drill operation	mm	1000		-	1000
	攻丝能力	Tapping capacity	-	M30 x 3.5	M36 x 4	M20 x 2.5	M36 x 4
加工行程 Travel	铣削能力	Milling capacity	cc/min	300	400	180	400
	工作台左右行程 (X)	Table horizontal (X)	mm	2500	3000	1500	2500 3000
	滑台行程 (Y)	Ram travel (Y)	mm		1500	1200	1500
	立柱行程 (Z)	Column horizontal (Z)	mm		800	500	800
	滑枕旋转角度 (A)	Ram tilting angle (A)	-		主轴向上转15°, 向下转25°	Clockwise15°, counterclockwise25°	
	主轴中心至工作台面	Spindle center to table top	mm		0 ~ 1500	0 ~ 1200	0 ~ 1500
	主轴端面至工作台中心	Distance from table center to spindle nose	mm	530 ~ 1330	630 ~ 1430	466 ~ 966	530 ~ 1330 630 ~ 1430
主轴 Spindle	主轴锥孔	Spindle bore taper	-	BT 50	BT 40		BT 50
	主轴最高转速	Max. spindle speed	rpm	4000	6000		4000
	快速进给 (X, Y, Z, W)	X/Y/Z/W Rapid traverse rate	m/min	8			
加工速度 Speed	滑枕最高转速 (A)	Ram maximum tilting speed (A)	Degree/min		215		10
	工作台最高转速 (B)	Table maximum rotation speed (B)	rpm				
	主轴电机	Spindle motor	kW	15 / 18.5 (15min)		15/18.5 (30min)	18.5 / 22 (30min)
功率 Power	X 轴进给伺服电机	X axis servo motor	N·m	36	22		30
	Y 轴进给伺服电机	Y axis servo motor	N·m	27	30		38
	Z 轴进给伺服电机	Z axis servo motor	N·m	27	30		38
	W 轴进给伺服电机	W axis servo motor	N·m	27	12		30
	A 轴进给伺服电机	A axis servo motor	N·m	20	22		30
	B 轴进给伺服电机	B axis servo motor	N·m	36	30		30
	机床总功率	Total power requirement	kW	64	60		77
数控分度台 CNC indexing worktable	负重	Max. loading capacity	ton	20	30	8	30
	尺寸 (长 x 宽)	Size (Length x Width)	mm	2200 x 1600	2400 x 1800	1200 x 1000	2200 x 1600 2400 x 1800
	冷却液压力范围 (枪钻)	Coolant pressure (gun drill)	MPa			2~11	
冷却系统 Coolant system	冷却液压力范围 (喷吸钻)	Coolant pressure (ejector drill)	MPa	1.0~2.0	1.0~2.0	-	1.0~2.0 1.0~2.0
	冷却液流量范围 (枪钻)	Rate of flow (gun drill)	L/min		6~140	6~120	6~140
	冷却液流量范围 (喷吸钻)	Rate of flow (ejector drill)	L/min	40~125	40~163	-	40~163
	机床占地面积 (长 x 宽)	Floor space require (Length x Width)	mm	9390 x 7690	9390 x 7880	6810 x 6080	9390 x 7690 9390 x 7880
尺寸及重量 Size & Weight	机床最大高度	Machine height	mm	3800	4580		3800 4580
	机床重量	Machine weight	ton	34	40	18	34 40
数控系统	CNC system	-			FANUC 0i-MF		

因不断改进开发, 故设计及规格之变动不另行通知! Design & specifications are subject to change without prior notice!

标准配件 (Standard accessories)

- 机床安全防护罩 (Full guard)
- 润滑系统 (Lubricating system)
- 冷却系统 (Coolant system)
- 气压系统 (Pneumatic system)
- 地脚螺栓及垫块 (Leveling screws and leveling wedges)
- 枪钻用弹性夹头 (Spring collet)
- 喷吸钻旋转连接器 (1.6G 无)
Ejector drill rotating connector (except for 1.6G)
- 工具及工具箱 (Service tools and tool box)
- 照明灯 (Working light)
- 工作状态灯 (Cycle indicator lamp)
- 磁性排屑器 (Magnetic chip conveyor)
- 油温控制机 (Coolant Chiller)
- 电柜空调机 (Air cooler for electric cabinet)
- 手柄控制盒 (Manual handle feed unit)
- FANUC 0i-MF 数控系统 (FANUC 0i-MF system)
- 数据服务器 (Data Server)
- 以太网 (Ethernet)
- 主轴定向 (Spindle orientation)
- 主轴吹风 (Air blast through spindle)
- 工作吹风 (Air blast)
- 宏程序软件 (Gundrill drilling cycle)

选项配件 (Optional accessories)

- 枪钻刃磨床 (Gun drill regrinder)
- 枪钻刃磨夹具 (Gun drill regrinding fixture)
- 铁屑脱油机 (Chip/oil separator)
- 链板排屑器 (非铁金属选用)
Hinged steel belt chip conveyor for non-ferrous metal
- X、Y、Z 轴直线光栅尺 (Linear scale for X, Y, Z axis)
- 纸带过滤器 (Paper filter)
- 7.90° 弯板 (Angle plate)
- 钻杆支撑系列组件 (Steady rest set)
- 油雾收集系统 (Oil mist gathering system)
- FANUC 31i 选配 (FANUC 31i optional)
- 接触式刀具长度检测系统 (Contact tool setting probe)
- 工件零点测量系统 (Automatic centering device)
- 刚性攻丝 (Rigid tapping)
- 主轴转速至 6000rpm (upgrade to 6000rpm)
- 换刀装置 32T (Automatic tool changer 32T)
- 自动关机 (Auto power off)
- FOCAS 2 功能 (Focas 2 function)