

 **GREE 格力**
掌握核心科技



格力伺服机械手

GREE SERVO MANIPULATOR

精工品质

格力创造

珠海格力智能装备有限公司
ZHUHAI GREE INTELLIGENT EQUIPMENT CO.,LTD
地址：广东省珠海市九洲大道2323号
Add:No.2323,jiuzhou Road,Zhuhai,Guangdong
电话：0756-3195318
邮箱：gree_aem@cn.gree.com
网址：www.gree-ie.com



关注格力智能装备



关注格力工业制品

*为不断改良产品，产品性能规格可能有所变动，恕不另行通知。

*All features and specifications are subject without prior notice.

All images provided in the catalogue are used for illustration purposes only.

目录 CONTENTS

- 02 团队简介 TEAM INTRODUCTION
- 04 产品理念 PRODUCT PHILOSOPHY
- 06 加工能力 PROCESSING CAPABILITY
- 08 规格外形 SPECIFICATIONS AND OUTLINE DIMENSIONS
- 12 解决方案 SOLUTION
- 14 样板案例 SAMPLE PROJECT
- 16 愿景 VISION





TEAM INTRODUCTION

团队简介

格力自动化依托格力电器强大的技术开发能力和严谨先进的生产工艺，迅速发展成为机械手、工业机器人、自动化车间物流等行业的璀璨新星，创造了国内自动化最前沿的产品，在满足格力电器“安全、高效、少人化、低成本”生产需要的同时，将格力自动化理念服务于全球企业。

格力自动化拥有一支富有活力和创新精神的研发团队，由机械设计制造及自动化、电气自动化、数控一体化、数控技术、应用电子技术等专业中的高级技术专家组成，拥有多台CNC等先进的加工设备，80%以上的零件采用自加工，并掌握了电控系统软硬件的研发能力。

格力电器作为自动化产品的应用方，已在全球九大基地进行了自动化升级改造，通过对外输出自动化设备，可为工业企业量身定制生产智能控制、自动化生产流水线的个性化解决方案。

格力自动化秉承“正气、阳光、高效、严谨”的态度，面对新机遇、新挑战稳步拓展国内外市场，让客户满意，让合作伙伴放心，是我们前进的不竭动力。

Based on the Gree Electric Appliances' strong technology development ability and advanced craft, Gree automation is quickly becoming the a of the mechanical arm industry, industrial robot and automated workshop logistics, while creating the advance automation products. Gree automation not only meet the Gree Electric Appliances ' Safety, High efficient, Low costing' production requirements but also spread Gree automation ideas to other enterprises all over the world. Gree automation has a dynamic and creative research & development team, which consists of senior technical experts of machine design and automation, electric automation, numerical control integration, numerical control technique and applied electronic technology. Gree automation has CNC and other special parts process equipments. More than 80% parts' self-processing and electronic control system researching ability has been mastered. Being the user of the automation products, Gree Electric Appliances have achieved automation upgraded in our global 9 bases. Moreover, Gree Electric Appliances can provide the personal solutions of the production intelligent control, automatic production line for the industry enterprise. Gree automation is moving forward with the 'Integrity, Sunshine, Efficiency, Strictness' attitude. Facing new opportunities and challenges, Gree automation is expanding the domestic and oversea market all the time. To meet the requirements of our costumers is always our working motivation and direction.



PRODUCT PHILOSOPHY

Utility

Focus on the products with large quantity, wide range and big contribution to industrial enterprises.

Innovation

Being brave in overthrowing anything, and initiating the new products.

Extreme

To face the problems with right attitude, to create the perfect products with innovativeness.

产品理念

● 实用

专注于量大面广，具有工业企业产生巨大贡献的产品

● 创新

勇于推翻一切，开创颠覆性的新一代产品

● 极致

诚实正视问题，不断推陈出新，致力于创造极致化的产品

STRONG SELF-PROCESSING CAPABILITY

强大的自加工能力

我们拥有完善的加工中心，高效缩短产品制造周期，通过规范的管理制度，实现产品完全检测和产品的最终测试，提高产品精度以确保产品质量，为客户提供高质量的产品。

We have sound processing center which can greatly shorten the manufacturing cycle.

We have standardized management system which can realize products' complete inspection and final inspection.

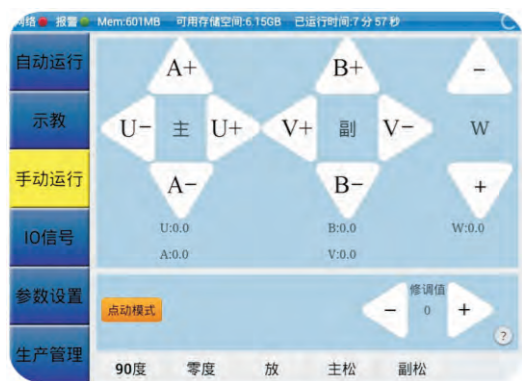
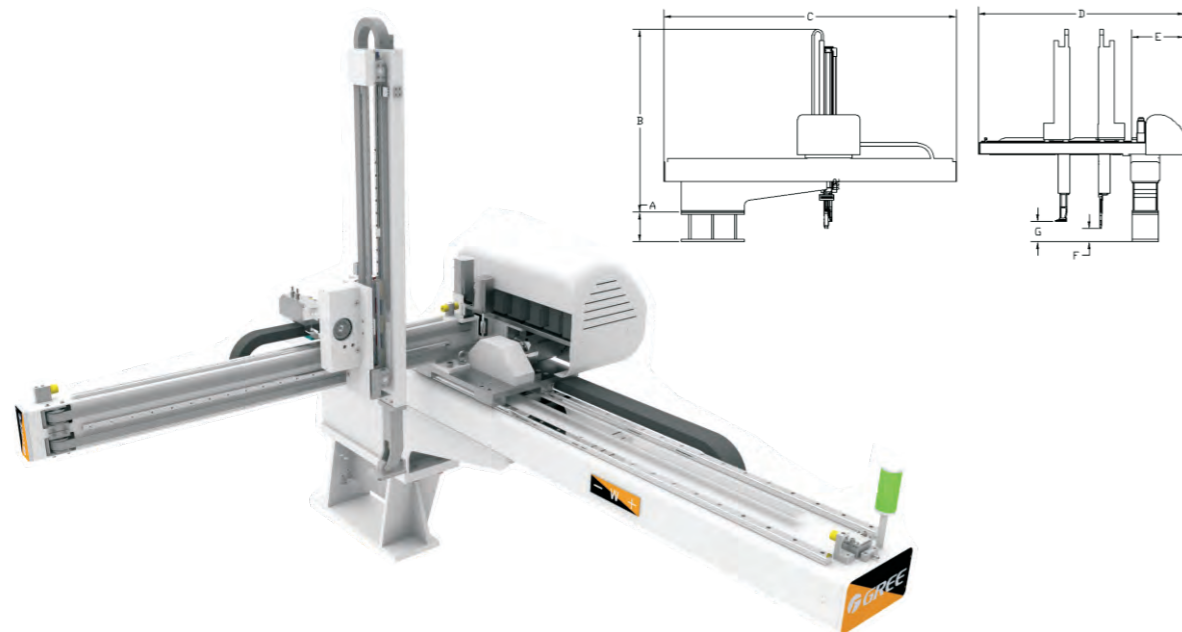
We have high precision products which can fulfill the requirements of our clients and boost their confidence.



CNC Three-axis Servo Manipulator

数控三轴伺服机械手

- 手操器采用开放式，灵活编程，机械手动作不受限制
Programming flexibility are increased, the movement of manipulator is not limited.
- A,B轴采用倍速机构，机械手高度低，节约高度空间
Telescopic structure is adopted in order to save the space.



- (1) 标准动作：用于快速编程,生产中可随时根据模具需要更改机械手动作；
- (2) IO信号：随时监测机械手及注塑机交互信号；
- (3) 生产管理：实时监测机床生产状态；
- (4) 报警记录功能：最多可记录5000条报警记录；
- (5) 操作记忆功能：系统自动记忆手动操作，最多可记录5000个过去动作；
- (6) 安全保护：系统内已限制机械手臂工作区域，可防止因误操作而发生事故。

- (1) Action standardization is used for fast programming, the action of the manipulator can be changed according to the needs of the mold;
- (2) Interactive signal of both the manipulator and injection molding machine are monitored at any time;
- (3) The production status of the machine is monitored all the time;
- (4) 5000 alarming record can be recorded at most;
- (5) 5000 actions can be recorded at most;
- (6) Working area is limited by the system of the manipulator in case of the misoperation.

三轴机械手 Three-axis manipulator

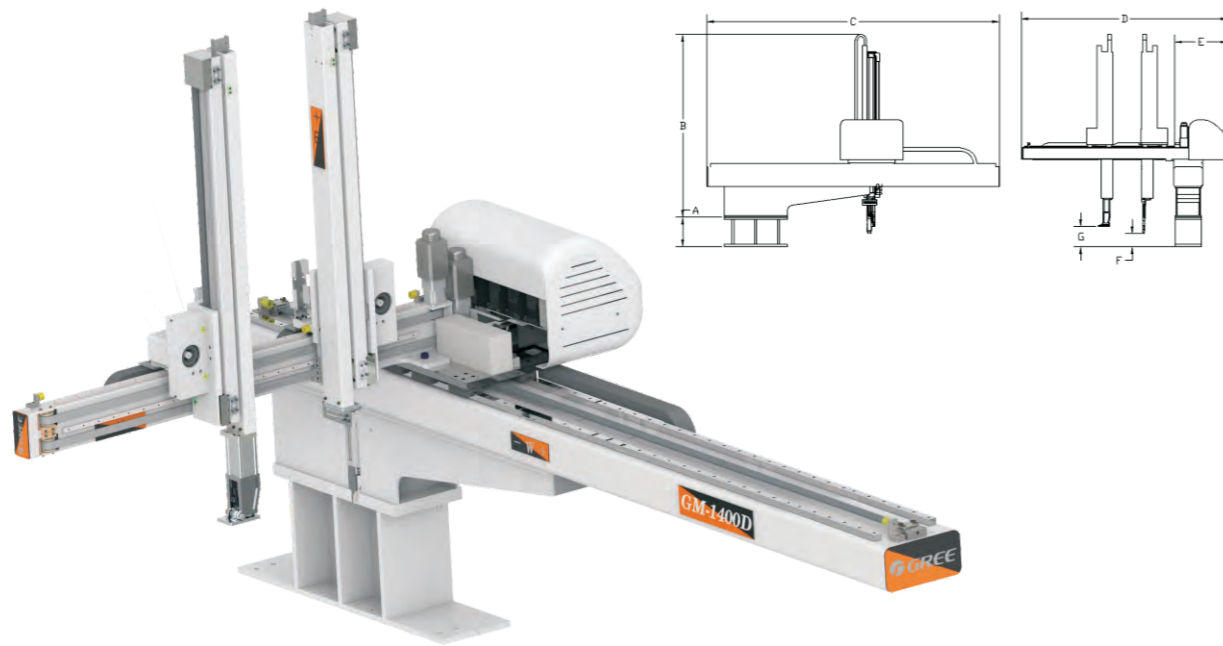
机型 Model	单位 Unit	500S	900S	1200S	1400S	1600S	1900S
手臂型式 Type	双段 (倍速式) Telescopic type						
使用注塑机 Molding machine tonnage	TON	50-120	90-200	200-400	400-700	700-1000	1000-1600
上下行程 AB axis stroke	mm	700	980	1180	1380	1580	1880
引拔行程 UV axis stroke	mm	550	550	550	850	850	850
横行行程 W axis stroke	mm	1450	1580	1580	2250	2250	2250
侧姿角度 Lateral position Angle	°	90					
最大载荷 (含治具) Max load (including fixtures)	kg	10	10	10	15	15	15
最小取出时间 Min take-out time	sec	3.5	3.5	4	4.5	5	5.5
空循环时间 Dry cycle time	sec	14	14	14.5	15	20	28
驱动方式 Drive system	横行、气拔、手臂上下伺服电机驱动，侧姿气缸驱动 AB axis, UV axis and W axis are driven by servo motors; lateral part is driven by cylinder.						
空气消耗量 Air consumption	NI/cycle	20	25	30	35	40	56
最大功率 Max power consumption	KW	0.5	0.6	0.85	1	1	1.2
电源 Power	AC 200±10% (50/60HZ)						

尺寸代号 Model	A	B	C	D	E	F	G
GM500S	300	1450	2150	1650	500	...	400
GM900S	200	1540	2620	1765	490	...	440
GM1200S	200	1600	2300	2070	400	...	450
GM1400S	400	1780	3000	2180	493	...	607
GM1600S	650	1830	3000	2070	400	...	807
GM1900S	650	1885	3000	2070	400	...	387

CNC Five-axis Servo Manipulator

数控五轴伺服机械手

- 手操器采用开放式，灵活编程，机械手动作不受限制
Programming flexibility are increased, the movement of manipulator is not limited.
- A, B轴采用倍速机构，机械手高度低，节约高度空间
Telescopic structure is adopted in order to save the space.



(1) 横走部分采用钢制结构框架，优质直线导轨，优质同步带传动，交流伺服马达驱动，满足高刚性、高速度、精确定位控制；

(2) 引拔部分采用框架结构，主体采用优质铝合金型材，伺服马达驱动，可以满足模外慢速模内高速需求；

(3) 主副臂部分采用双截倍速结构，主体采用优质铝合金型材，优质直线导轨，交流伺服马达驱动，满足高刚性、高速度、精确定位控制的需求；

(4) 五轴伺服驱动实现多点停放，伺服电机实现引拔机位置调整功能，调整方便，操作更加简洁。

(1) Horizontal-travel parts use steel structure, high quality linear guide and synchronous belt, driven by AC servo motor, which meet the requirements of high rigidity, high speed and precise positioning control.

(2) A single beam structure is configured for the crosswise part. Its principal body is comprised of high-quality aluminum alloy section beam and linear guide, driven by AC servo motor. Therefore, it can realize lower speed outside the mold and faster speed inside the mold.

(3) Both main arm and auxiliary arm are telescopic type. Its mainbody is comprised of high-quality aluminum alloy section, high-quality linear guide, driven by AC servo motor, which meet the requirements of high rigidity, high speed and precise positioning control.

(4) The five axis servo motor realizes the multi-point parking and crosswise moving and position adjustment at the same time, making the adjustment and operations more easier.

五轴机械手 Five-axis manipulator

机型 Model	单位 Unit	500	900D	1200D	1400D	1600D	1900D	2500
手臂型式 Type		双段 (倍速式) Telescopic type						
使用注塑机 Molding machine tonnage	TON	50-120	90-200	200-400	400-700	700-1000	1000-1600	1600-2400
上下行程 AB axis stroke	mm	700	980	1180	1380	1580	1880	2200
引拔行程 UV axis stroke	mm	550	550	550	850	850	850	900
横行行程 W axis stroke	mm	1450	1580	1580	2250	2250	2250	3200
侧姿角度 Lateral position Angle	°	90						
最大载荷 (含治具) Max load (including fixtures)	kg	10	10	10	15	15	15	30
最小取出时间 Min take-out time	sec	3.5	4	4	4.5	5	5.5	6
空循环时间 Dry cycle time	sec	14	14.5	14.5	15	20	28	32
驱动方式 Drive system		横行、气拔、手臂上下伺服电机驱动，侧姿气缸驱动 AB axis, UV axis and W axis are driven by servo motors; lateral part is driven by cylinder.						
空气消耗量 Air consumption	NI/cycle	25	30	35	40	45	92	280
最大功率 Max power consumption	KW	0.7	0.8	1.2	1.4	1.4	1.65	3.5
电源 Power		AC 200±10% (50/60HZ)						

尺寸代号 Model	A	B	C	D	E	F	G
GM500	300	1450	2150	1650	500	400	400
GM900D	200	1540	2620	1765	490	415	440
GM1200D	200	1600	2300	2070	400	410	450
GM1400D	400	1780	3000	2180	493	565	607
GM1600D	650	1830	3000	2070	400	765	807
GM1900D	650	1885	3000	2070	400	317	387
GM2500	765	2450	4250	2900	670	840	880

INJECTION MOLDING FACTORY AUTOMATE SOLUTION

注塑工厂自动化解决方案

格力自动化，致力于打造全自动化无人车间，在注塑板块已有成熟的实践案例。格力注塑车间以格力机械手为规划核心，配合伯乐注塑机自动化联动功能，实现了注塑车间集中供料、注塑取件、烫金丝印、传送物流等一个流的自动化生产模式，人机比、生产效率得到大幅优化。

Gree automation devotes to create the complete automation unmanned workshop, and has mature projects in injection molding workshops. Gree manipulator is the core of the Gree injection molding workshops, together with the molding machine, we realize the concentrated supply automatically, silk printing automatically, gilding automatically, plastic correcting automatically and gate cutting automatically.



集中供料系统：通过中央供料系统，实现注塑车间全自动化供料，减员、高效。

Concentrated supply system: by using the concentrated supply system, we realize the complete automation supply and high efficiency.



机械手取件应用：格力机械手功能强大，性能稳定，定位精准。

Manipulator application: Gree manipulator has powerful capability, stable performance and high precision.



自动化传送：配合格力机械手规划的全车间自动化传送带，将注塑件进行传送集中打包处理，优化车间、减员增效。

Automated transmission: coordinating with the conveyor, we realize the whole workshop automated transmission, which downsizes staffs and improves efficiency at the same time.



AGC物流：通过格力自动化设备AGC物流车，配合中央调度集控系统，实现车间自动化物流配送，智能程度高，稳定性强。

AGC Logistics: by using the Gree automation equipment—Automated Guided Cars, coordinates with the centralized control system, we realize the workshop automation logistics distribution, high intelligence and strong stability.

SAMPLE PROJECT

样板案例





愿景 VISION

打造一流的自动化产品
Creating the world class automation products
引领全球工业自动化变革
Leading the global industry automation innovation

