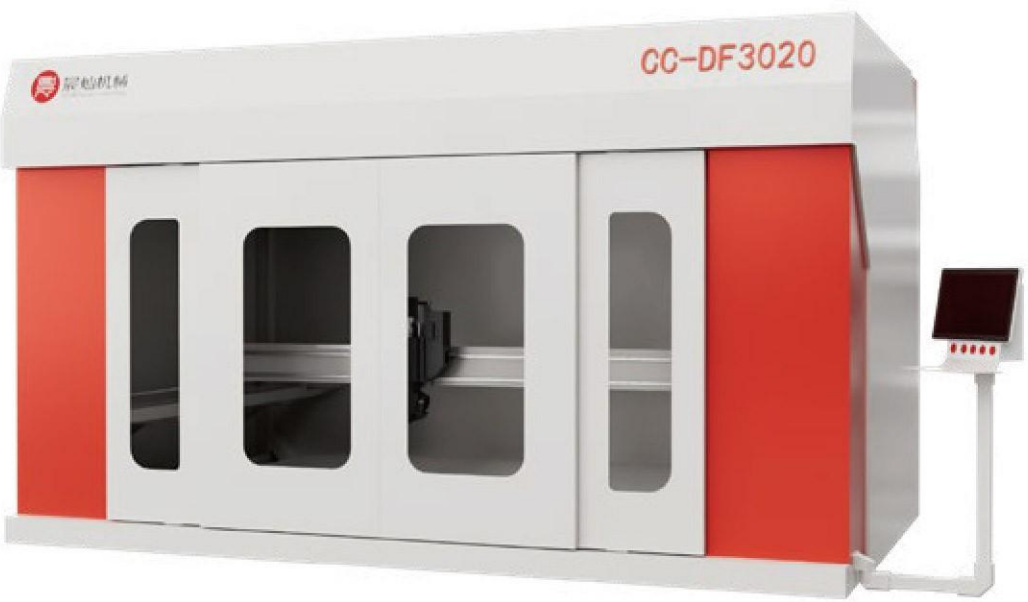
晨灿机械
CHENcan machine

INDUSTRIAL SCREW EXTRUSION ADDITIVE
MANUFACTURING EQUIPMENT
工业级螺杆挤出式增材制造装备



以**质量**求发展 以**诚信**创品牌

www.chencancnc.com

企业简介/Company Profile

山东研发生产基地
Shandong R&D and Production Base

江苏研发生产基地
Jiangsu R&D and Production Base

晨灿机械创立于1998年，是行业领先的CNC数控加工解决方案服务商，以创新的产品和及时的服务助力全球企业降本增效，改善工作环境。27年来，我们一直秉承讲诚信、重质量的服务宗旨，已为全球70多个国家和地区的12000余家企业提供高性价比的数控产品与服务。

晨灿机械总部座落于素有“九达天衢、神京门户”的山东省德州市，使用面积60000多平方米，拥有各类专业技术人才和高级技工200余人，研发人员占比超过10%，自主研发生产多款软件、关键零部件。公司现有山东齐河、江苏泗洪两大产研基地。各产研基地均通过ISO9001质量管理体系认证、CE认证，配有高端的生产设备和检测仪器，结构件全部厂内自主加工，质量稳定、交期可控。

晨灿机械重视探索与创新，愿意与学术界、产业界一起共同探索数控加工技术的前沿，推动创新升级，不断为行业创造价值。我们近十年已累计投入研发费用超过一亿元。截至2023年底，已申请发明及实用新型专利130余项，多款产品已获2017、2019、2022年度《首台（套）技术装备和关键核心零部件》认定，同时，被机械工业协会鉴定为国内领先水平，入选江苏省《重点推广应用的新技术新产品目录》，获得高新技术企业认定、科技型中小企业认定、专精特新中小企业认定等10余项荣誉。

晨灿机械研发生产的各类五轴联动数控龙门加工中心、复合板材锯铣加工中心、三维五轴激光切割机、八轴焊接机器人、工业级大型3D增减材一体机等高端数控设备，广泛应用于航空航天、风力发电、轨道交通、新能源汽车、船舶制造、医疗器械、铸造模具等多个领域。

晨灿机械坚定不移地与全球产业和生态伙伴一起，深度参与不同行业的合作，促进跨领域、跨技术和跨手段的交流和协作，携手推进数控加工技术的快速发展。

Founded in 1998, Chencan Machinery is an industry-leading CNC machining solution service provider, helping global companies reduce costs, increase efficiency and improve the working environment with innovative products and timely services. For 27 years, we have been adhering to the service tenet of integrity and quality, and have provided cost-effective CNC products and services to more than 12,000 companies in more than 70 countries and regions around the world.

Chencan Machinery is headquartered in Dezhou City, Shandong Province, and enjoys the reputation of "convenient road transportation and a hub for many roads. The location is extremely important and superior". The usable area is more than 60,000 square meters, with more than 200 professional and technical personnel and senior technicians, and R&D personnel account for more than 10%. They independently develop and produce a variety of software and key components. The company currently has two major production and research bases in Qihe, Shandong and Sihong, Jiangsu. All production and research bases have passed ISO9001 quality management system certification and CE certification, and are equipped with high-end production equipment and testing instruments. All structural parts are independently processed in the factory, with stable quality and controllable delivery time.

Chencan Machinery attaches great importance to exploration and innovation, and is willing to work with academia and industry to explore the frontiers of CNC machining technology, promote innovation and upgrading, and continuously create value for the industry. We have invested more than 100 million yuan in research and development in the past decade. As of the end of 2023, more than 130 invention and utility model patents have been applied for, and many products have been recognized as the "First Set of Technical Equipment and Key Core Components" in 2017, 2019, and 2022. At the same time, it has been identified as a domestic leading level by the Machinery Industry Association and selected into the Jiangsu Province's "Catalogue of New Technologies and New Products for Key Promotion and Application", and has won more than 10 honors including high-tech enterprise certification, science and technology-based small and medium-sized enterprise certification, and specialized and new small and medium-sized enterprise certification.

Chencan Machinery develops and produces various types of five-axis linkage CNC gantry machining centers, composite plate sawing and milling machining centers, three-dimensional five-axis laser cutting machines, eight-axis welding robots, industrial-grade large-scale 3D additive and subtractive integrated machines and other high-end CNC equipment, which are widely used in aerospace, wind power generation, rail transportation, new energy vehicles, shipbuilding, medical equipment, casting molds and other fields.

Chencan Machinery is unwaveringly working with global industry and ecological partners to deeply participate in cooperation in different industries, promote cross-domain, cross-technical and cross-means exchanges and collaborations, and work together to promote the rapid development of CNC machining technology.

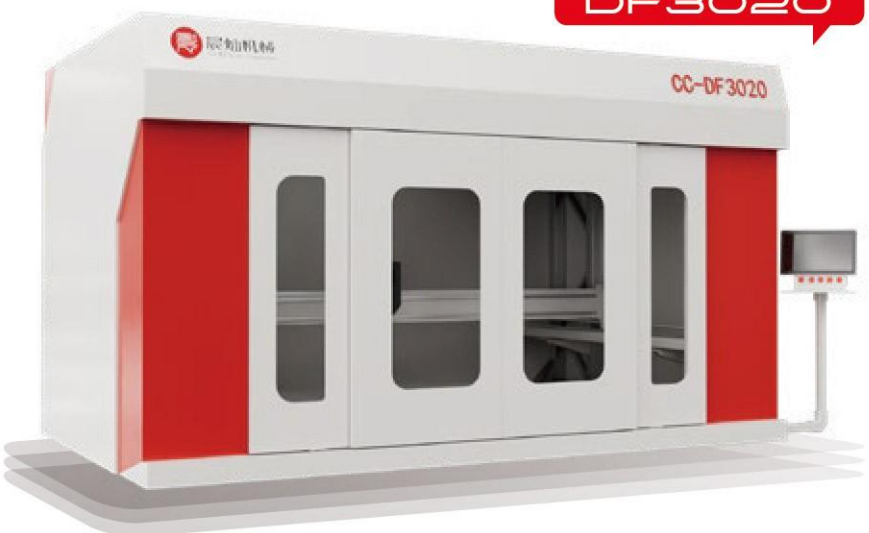
用户案例/Partner Users

DF 系列

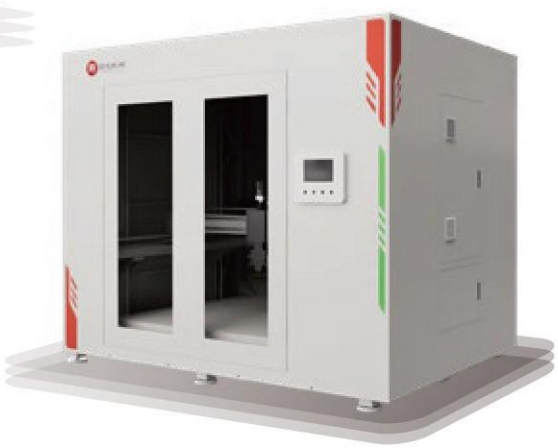
工业级螺杆挤出式增材制造装备

Industrial screw extrusion additive manufacturing equipment

DF3020



DF1616



工业级螺杆挤出打印机具有成型效率高、使用成本低、材料范围广等特点。运动轴和挤出电机均采用伺服电机作为动力源，伺服电机具有响应速度快、控制精度高的特点，确保了打印过程中的高精度与稳定性。使得打印过程更加流畅，成品质量显著提升。大功率伺服电机提供充足的扭矩及高的响应速度，轻松满足大尺寸工件打印任务中的高速需求。

Industrial screw extrusion printers have the characteristics of high molding efficiency, low cost of use, and a wide range of materials. The motion axis and extruder motor are both powered by servo motors, which have the characteristics of fast response speed and high control accuracy, ensuring high precision and stability during the printing process. This makes the printing process smoother and significantly improves the quality of the finished product. High-power servo motors provide sufficient torque and high response speed, easily meeting the high-speed requirements of large-size workpiece printing tasks.

技术革新，引领未来
Technological Innovation Leads the Future

- 工业级颗粒 3D 打印机，融合熔融颗粒制造技术（FGF），整合以往打印经验，配合自研打印系统，改变了传统的 FDM/FFF 线材 3D 打印方式。该技术将颗粒物料通过旋转螺杆送入加热室熔化，经喷嘴挤出成型，打印速度快速提升。
- Industrial-grade particle 3D printer, integrated with FGF technology (FGF), integrated previous printing experience, and combined with self-developed printing system, has changed the traditional FDM/FFF wire 3D printing method. This technology sends the particle material into the heating chamber through a rotating screw to melt, and extrudes it through the nozzle to form, which greatly improves the printing speed.

高效生产，降本增效
Efficient Production, Cost Reduction and Efficiency Improvement

- 显著提升打印速度：工业级颗粒 3D 打印机配备了大流量喷嘴和高效的物料加热系统，打印速度比传统线材 3D 打印机快数倍。挤出量最高可达约 8 kg/h，大大提高了生产效率。
- 大幅降低材料成本：颗粒原料的成本远低于专门制造的线材，且来源广泛。据估算，使用颗粒原料的打印成本可降低 30%~50%，甚至更多。
- Significantly improve printing speed: Industrial-grade particle 3D printers are equipped with large-flow nozzles and efficient material heating systems, and the printing speed is several times faster than traditional wire 3D printers. The extrusion volume can reach up to about 8kg/h, which greatly improves production efficiency.
- Significantly reduce material costs: The cost of particle raw materials is much lower than that of specially manufactured wires, and they are widely available. It is estimated that the printing cost of using particle raw materials can be reduced by 30%-50%, or even more.

多样材料，广泛应用
Diverse Materials, Wide Application

- 丰富的材料选择：工业级颗粒 3D 打印机支持多种颗粒材料，包括塑料（如 PP、PLA、ABS、PETG 等）、复合材料以及特殊工程塑料。用户可以根据打印需求选择合适的材料。
- 广泛的应用领域：由于打印速度快、成本低且材料多样，工业级颗粒 3D 打印机在汽车部件及模型、医疗辅具、工艺模型、航天工业工具等领域有着广泛的应用。此外，它还可以用于雕塑、卫浴、家具等领域的定制化生产。
- Rich material selection: Industrial-grade particle 3D printers support a variety of particle materials, including plastics (such as PP, PLA, ABS, PETG, etc.), composite materials and special engineering plastics. Users can choose the appropriate material according to their printing needs.
- Wide range of applications: Due to its fast printing speed, low cost and diverse materials, industrial-grade particle 3D printers are widely used in automotive parts and models, medical aids, process models, aerospace industry tools and other fields. In addition, it can also be used for customized production in the fields of sculpture, bathroom, furniture, etc.

晨灿机械在CNC数控加工领域深耕二十七年，自主研发的工业级3D打印机，于2019年12月荣获 “山东省首台（套）技术装备”，同时拥有发明专利和实用新型专利，2018-2019年先后起草通过Q/1400HCC企业标准、团体标准。融合前沿增材加工技术，突破传统制造局限，制造不再棘手，快速成型，精准加工，为工业生产注入澎湃动力 。

Chencan Machinery has been a pioneer in CNC machining for 27 years. Our independently developed industrial-grade 3D printer was awarded "Shandong Province's First (Set) Major Technical Equipment" in December 2019, alongside holding invention patents and utility model patents. From 2018 to 2019, we successively drafted and passed the Q/1400HCC Enterprise Standard and Group Standard.

By integrating cutting-edge additive manufacturing technology, we break through the limitations of traditional production, transforming manufacturing challenges into seamless efficiency. With rapid prototyping and precision machining, we empower industrial production with dynamic new momentum.

企业标准 2018-10-01


Q/1400HCC
山东晨灿机械设备股份有限公司企业标准
Q/1400HCC 007-2018
工业级 3D 打印铣削复合机
2018-10-01 发布 2018-10-01 实施
山东晨灿机械设备股份有限公司 发布


前 言


工业级 3D 打印铣削复合机

团体标准 2019-07-18


团 体 标 准
T/SDIE 9—2019
工业级 3D 打印铣削复合机
2019－07－18 发布 2019－07－18 实施
山东电子学会 发布


前 言


工业级 3D 打印铣削复合机

山东省首台（套） 2019-12-18


山东省工业和信息化厅
山东省工业和信息化厅关于公布2019年度山东省首台（套）技术装备和关键核心零部件及生产企业名单的通知
鲁工信装〔2019〕229号
山东省工业和信息化厅
2019年12月18日


2019年度山东省首台（套）技术装备和关键核心零部件及生产企业名单

专利技术 2019-2024


发明专利证书


实用新型专利证书


实用新型专利证书


实用新型专利证书

应用场景(部分产品加工展示)/Application Scenarios (partial product processing display)




DF3020技术参数/DF3020 Technical Parameters

型号/Model		DF3020
三轴工作行程 Three-axis working area	X	3000mm
	Y	2000mm
	Z	1300mm
传动方式 Transmission mode	X	齿轮齿条 + 直线导轨传动 Gear rack + linear guide transmission
	Y	精密丝杆 + 直线导轨传动 Precision screw + linear guide transmission
	Z	精密丝杆 + 直线导轨传动 Precision screw + linear guide transmission
驱动电机 Drive motor	X	伺服驱动电机 Servo drive motor
	Y	伺服驱动电机 Servo drive motor
	Z	抱闸伺服电机配高精度行星减速器 Brake servo motor with high-precision planetary reducer
螺杆挤出系统 Screw extrusion system	螺杆直径 Screw diameter	20 mm
	加热段数 Number of heating sections	3 段 3 sections
	最高加热温度 Maximum heating temperature	350 ℃
	额定加热功率 Rated heating power	2 kW
	原材料形式 Raw material form	颗粒 Particles
	挤出电机 Extrusion motor	750 W 高精度伺服驱动电机 + 精密行星减速机 750W high-precision servo drive motor + precision planetary reducer
	最高挤出量 Maximum extrusion volume	8 kg/h
控制系统 Control system		自研多模块控制系统 Self-developed multi-module control system
数据传输 Data transmission		以太网，USB，WIFI Ethernet, USB, WIFI
可打印材料 Printable materials		PP/ABS/PLA/TPU/PETG/PA/PPS/ASA 等热塑性材料及其纤维增强（包括碳纤维、玻璃纤维、玄武岩纤维等）复合材料 PP/ABS/PLA/TPU/PETG/PA/PPS/ASA and other thermoplastic materials and their fiber-reinforced (including carbon fiber, glass fiber, basalt fiber, etc.) composite materials
切片软件 Slicing software		颗粒打印切片软件，同时兼容 , Cura, Orca，Simplify3D 等通用切片软件 Particle printing slicing software, compatible with Cura, Orca, Simplify3D and other general slicing software
支持文件格式 Support file formats		STL, OBJ, AMF, 3DMF 等 STL, OBJ, AMF, 3DMF, etc.
打印头直径 Print head diameter		3mm-5mm 可选 (Optional)
X 最大工作速度 X maximum working speed		200 mm/s
Y 最大工作速度 Y maximum working speed		200 mm/s
Z 最大工作速度 Z maximum working speed		10 mm/s
重复定位精度 Repeat positioning accuracy		±0.15mm
机械结构 Mechanical structure		钢材焊接框架，全包围钣金，喷塑防锈处理 Steel welding frame, fully surrounded sheet metal, spray-coated for rust prevention
打印台面 Printing table		整体钢板（客户可根据需要增加木板或其它打印底板） Integral steel plate (customers can add templates or other printing bases as needed)
自动上料系统 Automatic feeding system		配自动上料系统，自动振料系统 Equipped with automatic feeding system, automatic vibration system
气动系统 Pneumatic system		志成 Zhicheng
自动上料气压需求 Automatic feeding air pressure required		≥0.6 MPa
输入电压 Input voltage		380V 3P, 50/60Hz
烘料系统（可选） Drying system (Optional)		50kg 烘干系统；一般使用普通加热烘干系统，特殊吸湿性材料，如：PA、PC、PBT、PET 等需要使用除湿干燥系统。 50KG drying system; generally use ordinary heating and drying system, special hygroscopic materials, such as: PA, PC, PBT, PET, etc. need to use dehumidification and drying system, customers should pay attention to the selection




DF1616技术参数/DF1616 Technical Parameters

型号/Model		DF1616
三轴工作行程 Three-axis working area	X	1600mm
	Y	1600mm
	Z	1300mm
传动方式 Transmission mode	X	精密丝杆 + 直线导轨传动 Precision screw + linear guide transmission
	Y	精密丝杆 + 直线导轨传动 Precision screw + linear guide transmission
	Z	精密丝杆 + 直线导轨传动 Precision screw + linear guide transmission
驱动电机 Drive motor	X	伺服驱动电机 Servo drive motor
	Y	伺服驱动电机 Servo drive motor
	Z	抱闸伺服电机配高精度行星减速器 Brake servo motor with high-precision planetary reducer
螺杆挤出系统 Screw extrusion system	螺杆直径 Screw diameter	20 mm
	加热段数 Number of heating sections	3 段 3 sections
	最高加热温度 Maximum heating temperature	350 ℃
	额定加热功率 Rated heating power	2 kW
	原材料形式 Raw material form	颗粒 Particles
	挤出电机 Extrusion motor	750 W 高精度伺服驱动电机 + 精密行星减速机 750W high-precision servo drive motor + precision planetary reducer
	最高挤出量 Maximum extrusion volume	8 kg/h
控制系统 Control system		自研多模块控制系统 Self-developed multi-module control system
数据传输 Data transmission		以太网，USB，WIFI Ethernet, USB, WIFI
可打印材料 Printable materials		PP/ABS/PLA/TPU/PETG/PA/PPS/ASA 等热塑性材料及其纤维增强（包括碳纤维、玻璃纤维、玄武岩纤维等）复合材料 PP/ABS/PLA/TPU/PETG/PA/PPS/ASA and other thermoplastic materials and their fiber-reinforced (including carbon fiber, glass fiber, basalt fiber, etc.) composite materials
切片软件 Slicing software		颗粒打印切片软件，同时兼容 , Cura, Orca，Simplify3D 等通用切片软件 Particle printing slicing software, compatible with Cura, Orca, Simplify3D and other general slicing software
支持文件格式 Support file formats		STL, OBJ, AMF, 3DMF 等 STL, OBJ, AMF, 3DMF, etc.
打印头直径 Print head diameter		3mm-5mm 可选 (Optional)
X 最大工作速度 X maximum working speed		200 mm/s
Y 最大工作速度 Y maximum working speed		200 mm/s
Z 最大工作速度 Z maximum working speed		10 mm/s
重复定位精度 Repeat positioning accuracy		±0.15mm
机械结构 Mechanical structure		钢材焊接框架，全包围钣金，喷塑防锈处理 Steel welding frame, fully surrounded sheet metal, spray-coated for rust prevention
打印台面 Printing table		整体钢板（客户可根据需要增加木板或其它打印底板） Integral steel plate (customers can add templates or other printing bases as needed)
自动上料系统 Automatic feeding system		配自动上料系统，自动振料系统 Equipped with automatic feeding system, automatic vibration system
气动系统 Pneumatic system		志成 Zhicheng
自动上料气压需求 Automatic feeding air pressure required		0.6~0.8 MPa
输入电压 Input voltage		220 V，50/60 Hz
烘料系统（可选） Drying system (Optional)		/

客户服务/Customer Service

- 免费上门安装、调试，并提供专业的操作及维保培训和来厂专业系统化培训。
  Free on-site installation and commissioning, and provide professional operation and maintenance training and professional systematic training in the factory.
- 7天×24小时全天候服务响应，设备故障快速处理。
  7 days*24 hours all-weather response service, rapid processing of equipment failures.
- 为客户提供终身免费远程技术指导服务，并定期回访，消除客户的后顾之忧。
  Provide customers with lifetime free remote technical guidance services, and make regular return visits to eliminate customers' worries.
- 我们将不断完善，竭诚为您提供更优质的售后服务体验。
  We will continue to improve and wholeheartedly provide you with a better after-sales service experience

制造能力/Manufacturing Capabilities

尼古拉斯五面铣龙门加工中心
Nicholas Five-Face Gantry CNC Center

美国哈斯 ST40 卧式数控车床
American Haas ST40 Horizontal CNC Lathe

日本新泻卧式加工中心
Japan Niigata Horizontal CNC Center

台湾亚威五面体龙门加工中心
Taiwan AWEA Pentahedron Gantry Machining Center

大型定制抛丸设备
Large Custom Shot Blasting Equipment

大型回火时效炉
Large Tempering and Aging Furnace

检测能力/Detection Capabilities

美国雷顿三坐标检测仪
American Leader Three-Coordinate Measuring Machine

英国雷尼绍激光干涉仪
UK Renishaw Laser Interferometer

英国雷尼绍精密转台
UK Renishaw Precision Rotary Table

英国雷尼绍球杆仪
UK Renishaw Ballbar

瑞典 Easylaser 激光校准仪
Swedish Easylaser Laser Alignment Instrument

英国雷尼绍 RTCP 标定仪
British Renishaw RTCP Calibrator

晨灿机械 CHENcan machine

以质量求发展　以诚信创品牌
Seek Development with Quality　Create Brand with Integrity

山东研发生产基地：德州市齐河县经济开发区名嘉西路
江苏研发生产基地：宿迁市泗洪县经济开发区宁波路 21 号
销售热线：150 6658 3118
网址：www.chencan-cnc.cn
Shandong R&D and production base: Mingjia West Road, Qihe County Economic Development Zone, Dezhou City
Jiangsu R&D and production base: No. 21, Ningbo Road, Sihong County Economic Development Zone, Suqian City
Service hotline: +86 187 5347 5557
Official website: www.chencancnc.com