



HAOLI™

FRP Pultrusion Machine

ISO 9001 certification

 www.njhaoli.com

南京豪力液压设备有限公司

Nanjing Haoli Hydraulic Equipment Co., Ltd



能力
Ability



信誉
Reputation



品质
Quality



服务
Service

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公司介绍 + + Company Profile

FRP Pultrusion Machine

南京豪力液压设备有限公司是一家以科技为先导的生产型企业，公司成立于1999年。主要从事液压系统、液压传动及控制系统和集中供油润滑系统的开发、设计和制造。

2000年率先进入复合材料领域。是最早为国内相关院所消化和吸收国外引进的FRP拉挤成型技术，并提供自行生产的拉挤机组的企业。公司已向多家企业转让FRP型材拉挤技术。

近年来随着复合材料行业在我国的深入发展，公司开发了系列化的FRP拉挤产品以适应FRP材料发展的需要。目前公司已向客户提供了大量的拉挤机生产线。实践证明我司产品具有较高的可靠性，更适用于我国拉挤行业工艺的需要。产品出口远销中东及欧洲地区。公司是中国复合材料成员单位。

我们可向客户提供以下服务：

- 根据不同拉挤制品的要求提供相应的FRP材料拉挤机组和配套的辅助设备；
- 拉挤工厂和车间的平面布置设计；
- 提供配方及模具和预成型的设计并提供技术指导文件；
- 培训技术操作人员协助客户拉出合格的制品；
- 本公司设有拉挤模具生产车间，可向客户提供各种规格的模具。

“信誉至上，顾客第一”是我们永久的承诺，我们认为可以提供完善的服务比销售更重要，我们愿意为您提供售前咨询并提供行业相关信息，为您创造最大的利益空间。

豪力液压设备有限公司愿与新老客户真诚合作，携手创造美好的明天！

Founded in 1999, Nanjing Haoli Hydraulic Equipment Co., Ltd is a manufacturing enterprise guided by science and technology. We are mainly engaged in developing, designing and manufacturing hydraulic pump stations, hydraulic transmission and control systems.

Our company entered the field of composite material in the year of 2000. We are the earliest one in China to help many domestic research institutes in related fields to digest and absorb FRP pultrusion technology introduced overseas and then provide self-produced pultruders, as well as offered assistance to many enterprises to carry on many technology transfer programs.

Nanjing Haoli Hydraulic Equipment Co., Ltd has won a good reputation for manufacturing high quality and durable pultrusion machines in the domestic market. Thousands of pultrusion lines experience has given Nanjing Haoli plentiful experiences in machinery building. This fact shows a high reliability of our company in pultrusion industry in China and great capability of developing domestic pultrusion techniques.

Our company has 40 employees and 6 technical engineers with excellent experience. Our factory attained ISO certification in 2007.

Nanjing Haoli Hydraulic Equipment Co., Ltd is a member of China-Fiber-Glass Association.

Now Haoli's products are covering full FRP production.

We can provide

- From 3 to 40 tonnes capacity, 7 types of standard machines, Ancillary processing equipment;
- Design of pultrusion plants and workshops;
- Offering formulas, moulds and preformed design as well as technical guiding documents;
- Training technical operation personnel to assist customers to make qualified pultruded products;
- We have the special department for the pultrusion mold and we can fabricate all kinds of pultrusion mold.

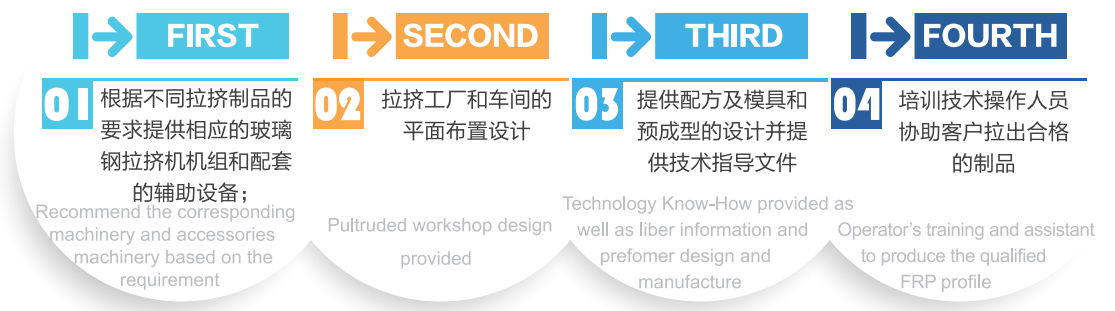
"Integrity and customers always come first" is our permanent commitment to customers. We attach more importance to considerate services apart from marketing. Haoli will provide all customers with presales consulting and relevant industrial information in a bid to create a greater profit for you.

Haoli will work in partnership with old and new customers sincerely to create a bright future together.

产品分布 + + Product Distribution



我们的服务 + + Our Service



我们把满足和超越客户的需求作为营销策略，以精益求精的领先品质、畅通有效的沟通渠道、得天独厚的交通优势、完善的服务，树立并巩固了我们在市场中的品牌形象，谋得了与客户共同发展，同时我们拥有多年专业的经验，能保证品质与服务，珍惜信誉，从而赢得客户的信赖与支持。

We have to meet and exceed customer demand as a marketing strategy, leading to refine on quality, smooth and effective communication channels, traffic advantage be richly endowed by nature, perfect service, build up and consolidate our market in the brand image, to get common development with customers, we also have a stable sales network, ensure the quality and service, cherish the reputation, to win customer's trust and support to.

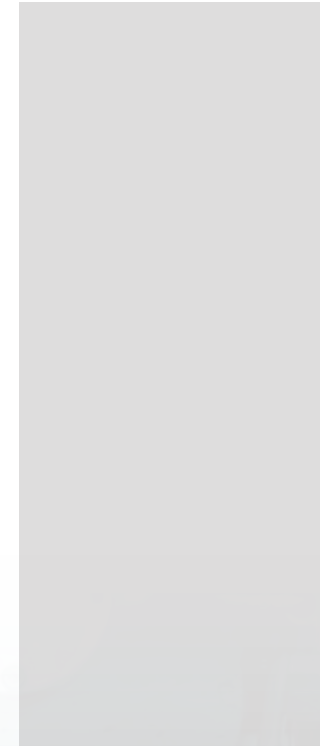
生产能力 + + Production Capacity



经过数十年的努力和发展，豪力液压设备有限公司现有各类加工机床数台，其中高精度磨床三台，深孔钻两台，数控加工中心三台。我公司已于2007年通过ISO9001质量体系认证。

For around 10years struggle and development, Nanjing Haoli Hydraulic Equipment Co., Ltd has all kinds of different machinery to produce the pultrusion machinery and the pultruded mold.3 set of High accuracy surface grinder; 2 set of gun driller and several sets cnc center among them. Nanjing Haoli Hydraulic Equipment Co., Ltd passed the ISO9001 certification in 2007.

研发力量 + + Research and Development

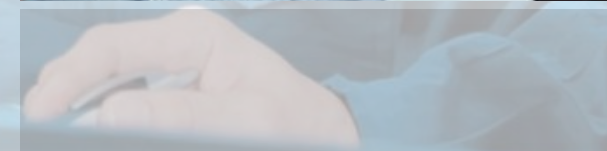


多年来，南京豪力液压设备有限公司依靠雄厚的技术力量，研发了FRP材料机械化生产技术，实践证明我公司产品具有很高的可靠性，适用于我国拉挤行业工艺的需要。我们已拥有成熟的技术，进行自主创新，我们的产品出口远销中东及欧美地区。

从技术上来讲，我们拥有经验丰富的研发团队；从管理上来讲，我们具有先进的精益生产管理理念；从市场上讲，我们已得到了客户的普遍认可，我们对国内外市场充满信心。

In recent years, Nanjing Haoli hydraulic equipment Co., Ltd, win the customer's recognition, relying on the abundant technical ability. Haoli continuous to develop fiber glass plastic technology and pushed the technology forward from the traditional hand make to the machinery make via pultruded. Around 10 years developed and effort, it is proved that our pultrusion machinery suitable for our pultruded technology in China. Products are exported to worldwide, such as the Middle East and Europe and USA.

From the technically, we have experienced R&D team;
From the management, we have advanced lean production management idea;
From the market, we have got the general recognition of the customer, we have confidence in the domestic market.



公司证书 + + Corporation Charter

荣誉，心血铸就；口碑承载；成绩，激励前进的脚步；辉煌，让我们更加坚定。多年来，“豪力”凭借优良的产品品质，踏实稳健的工作作风和处处为客户着想的工作态度，深受用户青睐，赢得了客观的认可和荣誉。

Honor is created in hard work. Achievement devotes the progress. Brilliant makes us more determined. Over the years, due to advantage of efficient cost performance, underpinned work style and attitude of customers first, Haoli has won recognition and prize.



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Dissolver

四、拉挤模具设计与制造 Pultrusion Die Design and Manufacturing

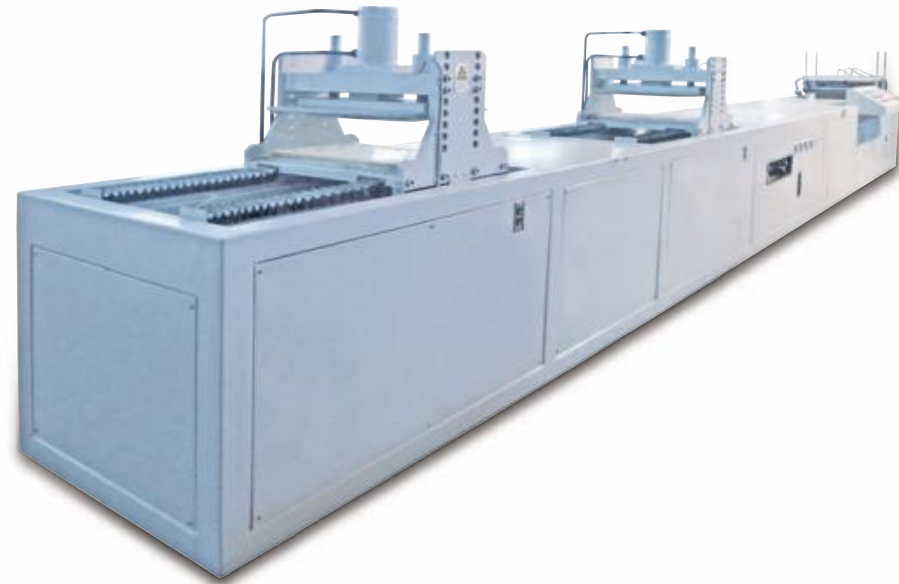
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↑
下夹式 (标准机型)
Clampers form Downwards



→
40T 拉挤机
40T Pultrusion Machinery



→
上夹式
Clampers form Upwards

←
20T拉挤机
20T Pultrusion machinery



FRP拉挤成型设备 + + FRP Pultrusion Machine

01 液压牵引式拉挤机 Caterpillar Pultrusion Machine

设备特点:

- 01 夹具更换方便, 适宜拉各种玻纤和碳纤异型材;
- 02 牵引力、夹紧力、拉挤速度调整方便。可以实现无级调压、调速;
- 03 采用直线导轨, 运行平稳, 附带集中润滑系统。

Characteristics:

- 01 Easy replacement of clamps and suite for different shapes with fiberglass or carbon glass;
- 02 Easy adjustment of speed and pressure features poleless speed-adjustment and pressure-adjustment;
- 03 Linear guider guarantee the stable performance with centralized lubrication function.

可选件:

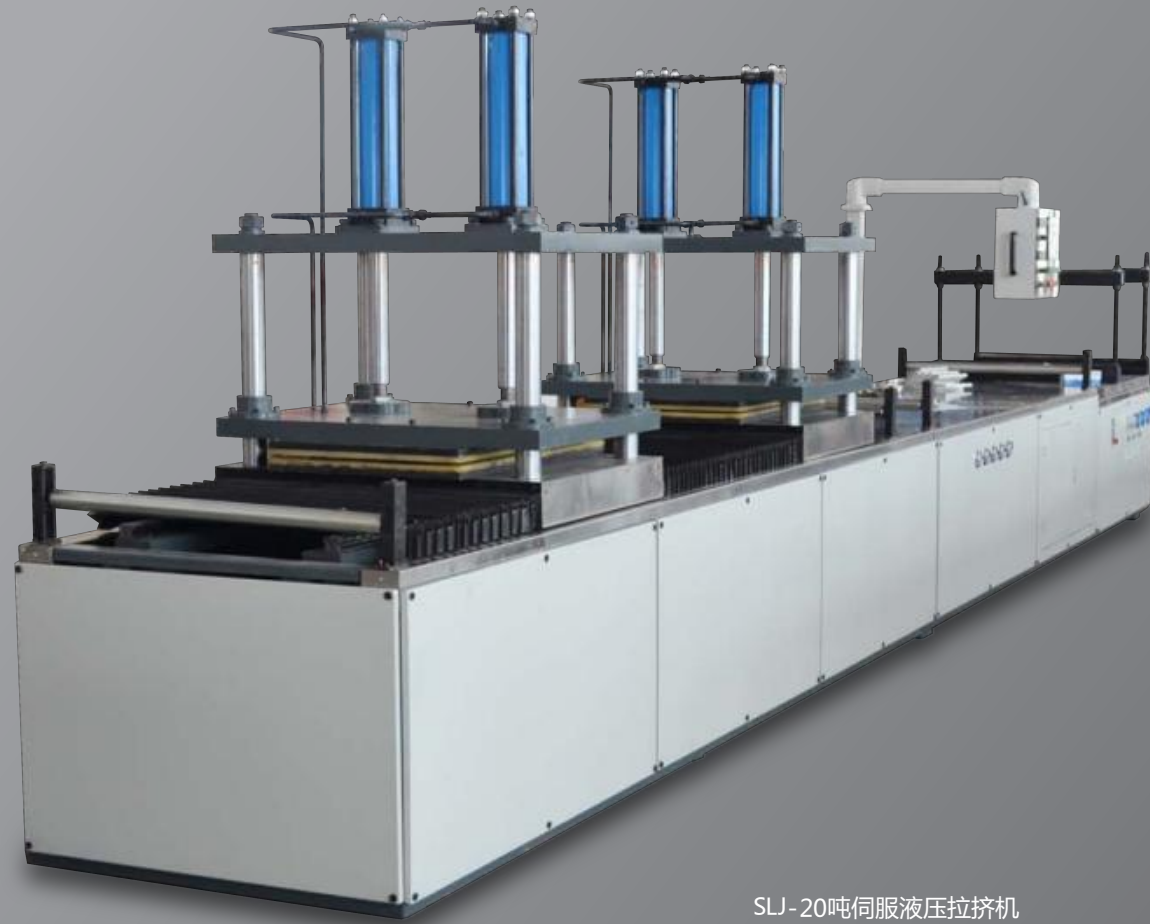
- 01 继电器或PLC控制
- 02 加热平台电动升降
- 03 光电编码测速系统
- 04 上夹持或下夹持

Options:

- 01 Relay or PLC
- 02 Heated platen, die bed with automatic adjustment
- 03 Programmable Velocity encoder system
- 04 Clampers from downwards or from upwards

参数 Parameter	型号 Model	YLJ-6T	YLJ-12T	YLJ-15T	YLJ-20T	YLJ-30T	YLJ-40T
牵引力 (吨) Pulling Force(Ton)		6	12	15	20	30	40
夹紧力 (吨) Clamping Force(Ton)		6	10	15	20	30	40
拉挤速度 (米/分) Pulling Speed(m/min)		0.1-1.5	0.1-1.5	0.1-1.5	0.1-1.2	0.1-1.2	0.1-0.8
拉挤幅面 (宽×高) 米Profile(W×H)m		0.6×0.3	0.7×0.3	0.8×0.4	1×0.4	1×0.5	1.2×0.8
电机功率 (千瓦) Motor Power(Kw)		6	8	11	15	15	15
电热功率 (千瓦) Heating Power(Kw)		9.6	12	18	18	18	18
温控方式 Temp.Control		智能仪表、固态继电器 Smart gauge and solid state relay					
外形尺寸 (长×宽) Dimension(L×W)m		8.25×0.85	9×0.9	11×1.12	11.25×1.35	11.25×1.35	13.5×1.8
整机约重 (吨) Machine Weight(Ton)		3	3.5	4.5	6	7	15
主机传动方式 Driving Type		液压传动 Hydraulic					
控制部分 Control System		继电器或PLC Relay or PLC					

02 | 伺服液压牵引拉挤机设备 + + Servo-control Hydraulic Pultrusion Machinery



SLJ-20吨伺服液压拉挤机
SLJ-20Ton Servo Hydraulic Pultrusion Machinery



设备特点:

- 01 噪音低, 节能50%相对于传统的液压拉挤机;
- 02 操作简单: 夹紧力和牵引力及拉挤速度均采用数字设定;
- 03 拉挤过程中数据实时记录, 方便质量控制及技术管理;

Advantage of the machinery

- 01 Low noise and energy save 50% compare the traditional hydraulic machinery;
- 02 Easy operation: clamp force and pulling force and pulling speed can be adjust on the touch screen;
- 03 Any data can be recorded at any time for the process quality control and technology know-how analysis;

参数 Parameter	型号 Model	SLJ-20	SLJ-30
牵引力 (吨) Pulling Force(Ton)		0 ~ 20	0 ~ 30
夹紧力 (吨) Clamping Force(Ton)		0 ~ 20	0 ~ 30
拉挤速度 (米/分) Pulling Speed(m/min)		0.1 - 1.2	0.1 - 1.2
拉挤幅面 (宽×高) 米Profile(W×H)m		0.8 × 0.4	1.2 × 0.4
电机功率 (千瓦) Motor Power(Kw)		3kW × 3	5.5kW × 3
电热功率 (千瓦) Heating Power(Kw)		加热板18kW或者铸铝加热板 Sandwich heating plate 18kW or Cast Aluminum heating block	
温控方式 Temp.Control		智能仪表、固态继电器 Smart gauge and solid state relay	
主机传动方式 Driving Type		伺服液压传动 Servo Hydraulic	
控制部分 Control System		触摸屏和可编程控制器 Touch Screen & PLC	

03 | 履带牵引式拉挤机 Caterpillar Pultrusion Machine

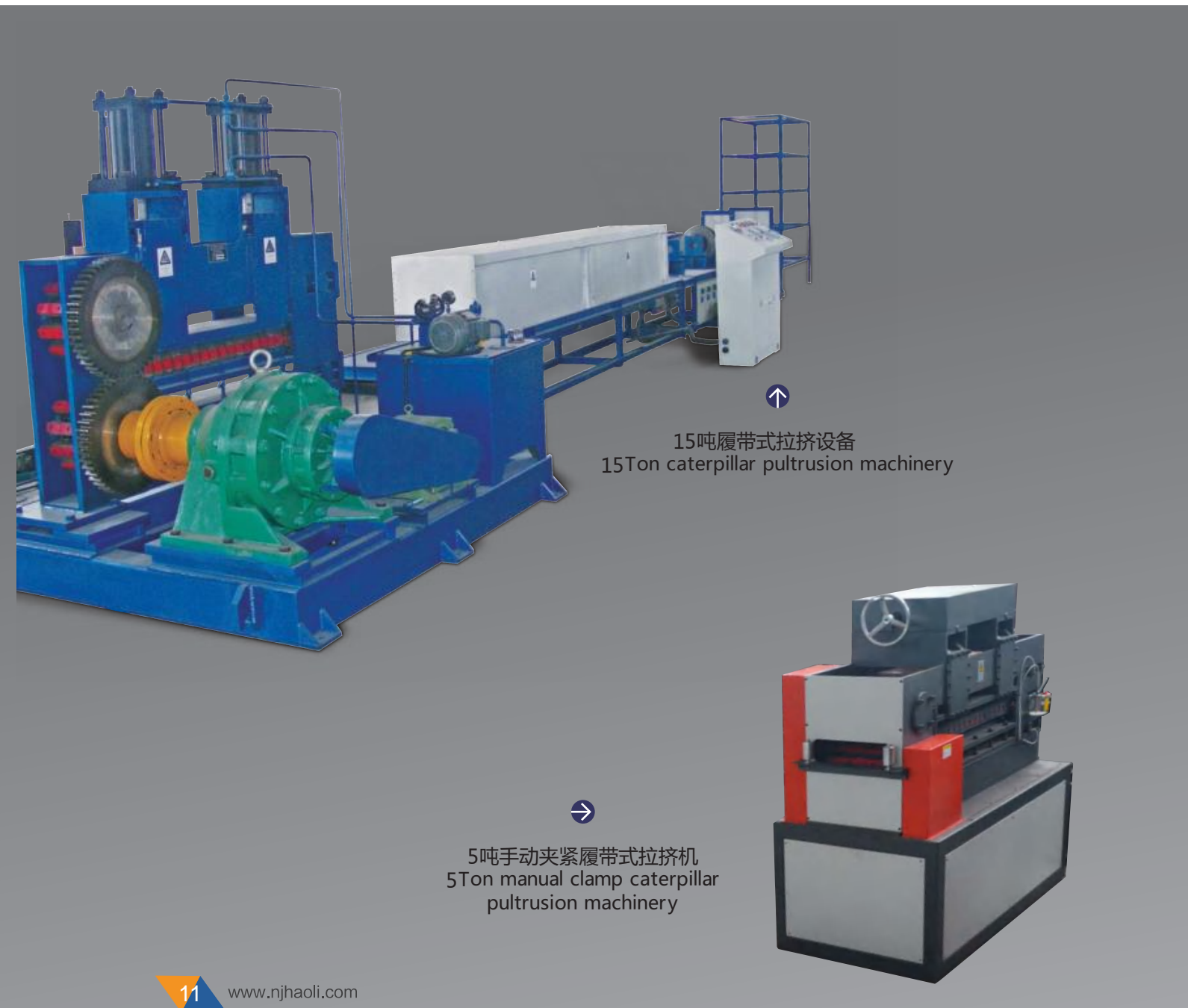
设备特点:

- 01 适宜生产中小规格定型FRP产品;
- 02 拉挤速度平稳, 低速稳定;
- 03 液压自动夹紧;
- 04 耗电量小。

Characteristics:

- 01 Simple structure and suitable for small or medium profiles especially epoxy profiles;
- 02 Stable movement, low speed in especial stable;
- 03 Hydraulic clamp;
- 04 Less power needed.

参数 Parameter	型号 Model	LLJ-5	LLJ-15
牵引力 (吨) Pulling Force(Ton)		5	15
夹紧力 (吨) Clamping Force(Ton)		5	15
拉挤速度 (米/分) Pulling Speed(m/min)		0.15-1	0.15-1
拉挤幅面 (宽×高) 米 Profile(W×H)m		0.15×0.08/0.3×0.051	0.15×0.08/0.3×0.08
电机功率 (千瓦) Motor Power(Kw)		3	5.5
电热功率 (千瓦) Heating Power(Kw)		9.6	9.6
温控方式 Temp.Control		智能仪表、固态继电器 Smart gauge and solid state relay	
外形尺寸 (长×宽) Dimension(L×W)m		6×1.5	6×1.5
工件夹紧接触长度 (米) Clamp Length(m)		1	1.5



04 | 拉缠机

Pullwinding Machine

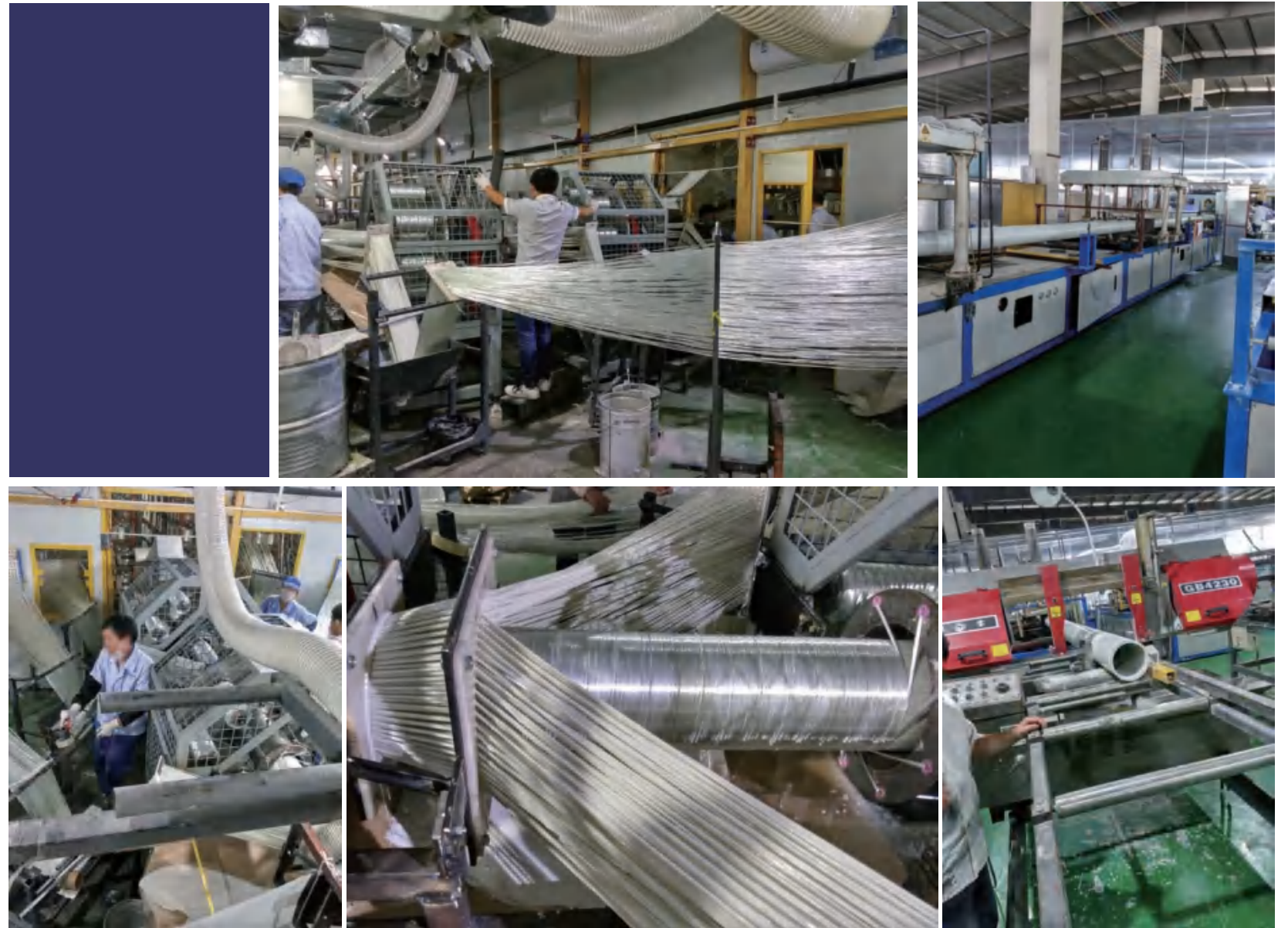
▶ 设备特点:

- 01 纱线排布均匀;
- 02 螺距调整方便;
- 03 设备配有防护网。

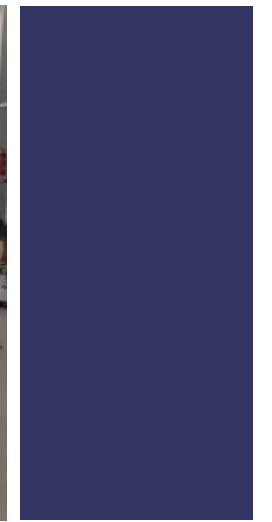
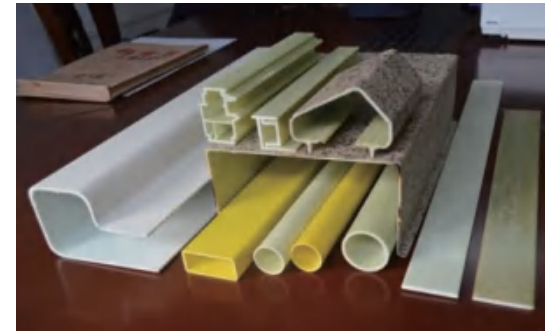
▶ Characteristic:

- 01 Winding rovings can be well-distributed;
- 02 Adjust the pitch easily;
- 03 Safety guard cover.

型号规格	HLPW200-1-8	Model	HLPW200-1-8
最大缠绕直径	Up to $\Phi 200\text{mm}$	Max pullwinding diameter	Up to $\Phi 200\text{mm}$
纱团直径	$\Phi 280\text{mm}$	Max spool size	$\Phi 280\text{mm}$
纱团重量	20kg	Max spool weight	20kg
芯轴直径	$\Phi 80\text{mm}$	Spool mandrel diameter	$\Phi 80\text{mm}$
张力可调	Yes	Tension adjustable	Yes
每台纱团数量	8	Number of spools per equipment	8
缠绕速度	30	Max Head Rotation-r.p.m	30
电机功率	1.5kw	Motor's power	1.5kw
控制方式	Inverter	Control type	Inverter
中心高	1225mm	Center height	1225mm
外形尺寸 (长x宽x高)	1000x1200x1800mm	Dimension(LxWxH)	1000x1200x1800mm



05 | 注胶机 PU Injector Machine



设备特点:

- 01 配比精准，操作简便；
- 02 结构简单，易于维护，维护成本低；
- 03 带管路加热；
- 04 设备带自动提料功能。

Characteristic:

- 01 Precise ratio and easy operation;
- 02 Easy maintenance at low cost ;
- 03 Hose with inside heater ;
- 04 Fill the material automatically.

我们可以提供完善的PU拉挤的技术方案及一系列工装生产制作；
We can provide the complete line with the pultrusion technology.

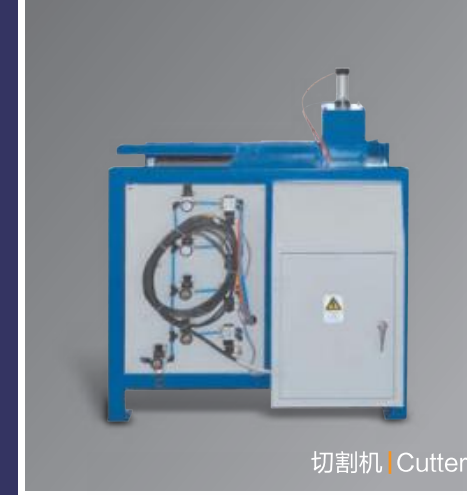
- ★ 聚氨酯拉挤技术提供；
- ★ 聚氨酯注胶和模具的生产及制造；
- ★ 现有的拉挤设备的升级及工艺完善；
- ★ PU technology know-how technology;
- ★ PU resin injection mold and its box design and manufacturer;
- ★ The current pultrusion machinery development;

主要容积	100L/桶×2 桶
输送压力	最大4MPa
混合方式	静态混合器
温度控制范围	0-100度
温控精度	+/-1 °C
PLC控制	日本三菱
流量范围	0-600ml/min(可调)
混合比例	5 : 1或者1 : 5
自动提料系统	有

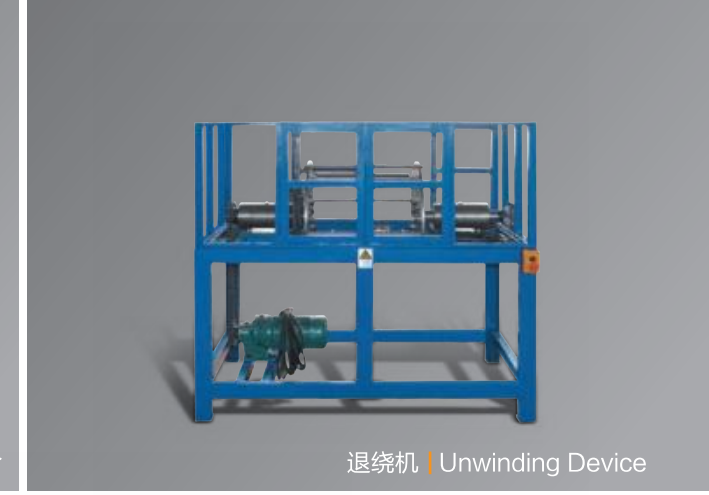
Volume	100L/Barrel;160L in total;
Delivery pressure for the PU resin	Max up to 4Mpa
Mixing mode for injection gun	static mixer will be fix in front of the injection gun and mix there
Temperature adjustable range	0-80°C(either temperature can be adjustable)
Temperature control accuracy	+/-1 °C
PLC system	Mitsubishi Made in Japan
The discharge of the volume	0-600ml/min(can be adjustable)
The Maximum mix ratio can be adjust to 1:5 or 5:1	
Automatic resin refill function;our system are equipped with both delivery pump to refill the resin from the resin barrel to mixer barrel automatic	

高强度FRP材料螺纹杆成型设备 + +

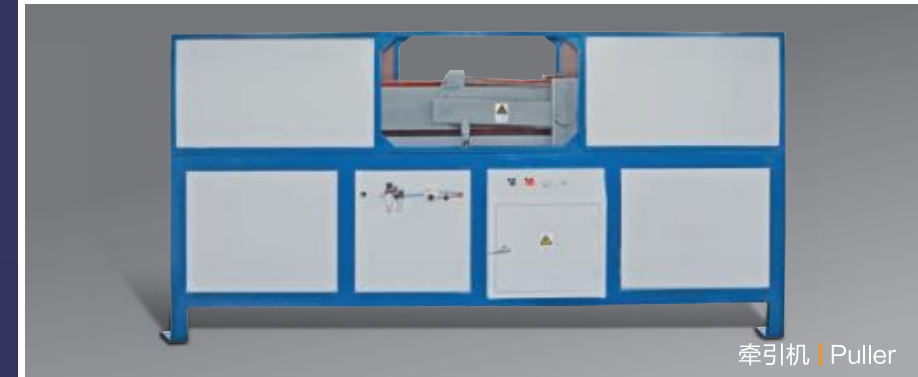
FRP Rebar Equipment



切割机 | Cutter



退绕机 | Unwinding Device



牵引机 | Puller



浸胶系统 | Impregnant System



设备特点:

该机组可生产直径 $\phi 8 \sim \phi 40$ mm 的左旋或右旋螺纹杆，该机组烘道可气动升降并配有退绕设备。该设备主要适应采用玻璃纤维作为增强材料，以聚脂树脂为基体，经拉挤缠绕成型的全螺纹杆机器。

Characteristics:

This equipment can produce full-threaded solid rod with diameter of $\phi 8 \sim \phi 40$ mm featuring either left-hand or right-hand thread sense. The curing system can be lift and down by pneumatic and equipped with unwinding device. The FRP threaded rod is pultruded and manufactured via pull-winding technology. And the main element is fiberglass and polyester.

设备参数:

型号	ML-3.5
牵引力 (吨)	5
夹紧力 (吨)	5
拉挤速度 (米/分)	0.5~1.5
总功率 (千瓦)	26.7
外形尺寸 (长×宽) 米	30×1.5
控制方式	变频调速
制品规格 (mm)	$\phi 8 \sim \phi 40$

Parameter of The Equipment:

Model	ML-3.5
Pulling Force(Ton)	5
Clamping Force(Ton)	5
Pulling Speed(m/min)	0.5~1.5
Motor Power(Kw)	26.7
Dimension(L×W)m	30×1.5
Control Type	Inverter
Size of the Products	$\phi 8 \sim \phi 40$

FRP螺纹杆优势:

- 01 良好的耐腐蚀性能;
- 02 重量轻强度高;
- 03 可用机械直接切割, 而不会产生火花, 免除拆卸工作;
- 04 FRP全螺纹杆广泛适用于矿山巷道、铁路隧洞、基坑和边坡、军事工程等锚护;

注 本设备生产出的制品均能满足以上要求。

Advantage of the FRP Rebar:

- 01 Corrosion resistance;
- 02 Lightweight & high strength;
- 03 Consistent cross section; Low manufacture cost; Fire resistant and anti-static rating;
- 04 Application: coal mine and tunnel and protection and retaining for the foundation pit and side slope as well as for military usage;

Note The rebar is processed via Haoli' s machinery can reach the above requirement.

辅助设备 + + Ancillary Processing Equipment

01 | FRP型材自动切割机 (以配15吨拉挤机为例) FRP Automatic Cutter (Cutter for the pulling force with 15Ton pultrusion machinery as example)

▶ 主要特点:

- 01 切割机主要由双边液压夹紧装置、可移动的切割机锯片头、电气控制与测量装置三部分构成。
- 02 作为拉挤型材在线连续生产，切割机已是必不可少的装备。
- 03 为保护生产环境和操作者的身体健康，切割机出厂时已配备水箱，具有可带水喷淋和收尘的功能。
- ★ 本切割机可按用户的要求配套本公司生产的各种规格拉挤机。

▶ 可选件:

数字测长仪
距离限位开关

外形尺寸(长×宽)	3500×2500mm
整机约重	1.5吨
主机传动方式	液压传动
切割电机功率	3Kw
最大制品尺寸	800×250mm

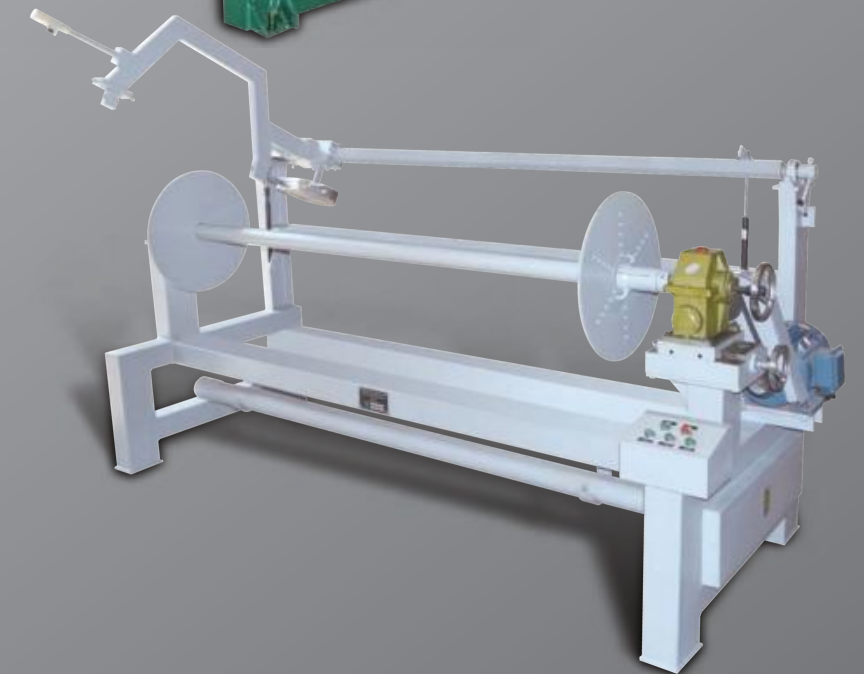
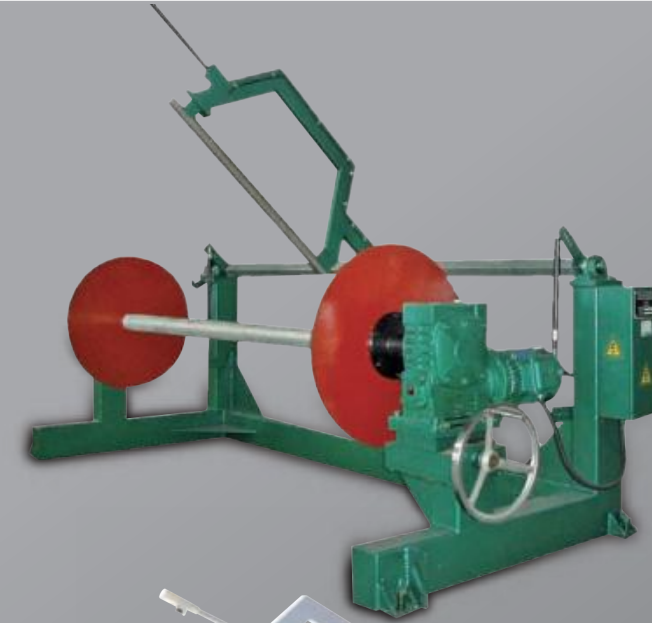
▶ Characteristics:

- 01 The cutting machinery consists of a clamping device at the both side and drawing device and length measurement device;
- 02 The cutter is going to become necessary equipment as the pultruded continuous production requirement;
- 03 In order to protect the environment pollution and operator's health, our cutter equipped water tank. It can cut by water and water can clean the profile.
- ★ Haoli can manufacture all kinds of different cutter based on pultrusion machinery from other supplier.

▶ Options:

Programmable cutting length encoder
Cut length limit switch

Dimension(L×W)	3500×2500mm
Weight	1.5Tons
Driving Type	Hydraulic
Saw Motor Power	3Kw
Max Profile(L×H)	800×250mm



02 | 切毡机 Mat Slitter

▶ 设备特点:

QZ-1800型切毡机，采用三速电机作为切毡机的动力源。操作切毡机可根据毡卷的不同外径尺寸规格进行速度变化。在确保一定线速度的同时，选择不同的转速，可以得到最佳的切毡质量。切毡机可切玻纤和碳纤维为材料的卷筒式编织物。

- ★ 切毡机自带锯片盒。
- ★ 芯轴规格可按用户的要求制作。

▶ Characteristic:

QZ-1800 Roll-mat Cutter adopts a triple-pole variable speed motor as its power source. The speed can vary according to different diameters of the rings and different cutting diameters. Different rotational speed can be set when linear velocity is kept unchanging. This roll-mat cutter can cut rolling braided fabrics such as continuous mat, combination mat and surfacing mat made from fiberglass or carbon glass.

- ★ Saw box for 5 meters equipped.
- ★ Haoli can machining all kinds of different mandrel based on the requirement.

外形尺寸(长×宽×高)	2500×1000×1500mm
电机转速	1400/950/710r/min
毡圈长度	Max1800mm
毡圈直径	Max600mm
芯轴规格	Φ70、Φ90
整机约重	0.6吨
主机传动方式	链传动
电机功率	0.85/1/1.5Kw

Dimension(L×W×H)	2500×1000×1500mm
Velocity	1400/950/710r/min
Mat Length	Max1800mm
Mat Diameter	Max600mm
Mandrel	Φ70、Φ90
Weight	0.6Tons
Driving Type	Chain
Motor Power	0.85/1/1.5Kw

03 树脂物料搅拌机 (分散机) Dissolver

设备特点:

- 01 分散轴升降采用液压方式, 升降平稳;
- 02 分散轴叶片采用不锈钢材料制作, 耐磨、耐腐蚀;
- 03 运转平稳、噪音低, 可在运转中任意升降;
- 04 可根据物料黏度, 选择不同的转速, 具有灵活方便的优点。

主电机功率	5.5Kw
搅拌容量	200Kg
主轴转速	100~800r/min
外形尺寸	1500×400×1300mm
油泵电机功率	1.5Kw
升降高度	0~700mm
整机重量	350Kg

Characteristic:

- 01 The processing height of disperser is adjusted by hydraulic unit;
- 02 The disperser is made form stainless steel;
- 03 The dissolver is quiet during operation;
- 04 The speed of dissolver can be adjustable according to the different viscosity.

Power	5.5Kw
Content	200Kg
Speed Ranges	100~800r/min
Dimensions	1500×400×1300mm
Pump Power	1.5Kw
Stroke	0~700mm
Weight	350Kg

拉挤模具设计与制造 + Pultrusion Die Design and Manufacturing

- 01 FRP拉挤模具材料选用各种优质的模具钢经锻打而成;
- 02 模具材料经调质、回火和淬火处理;
- 03 经机械精密加工成型;
- 04 根据客户要求选用表面镀铬、或表面氮化处理; 最终获得高精度拉挤型材模具。

- 01 Material: high qualified die steel process through forging;
- 02 Process: follow from hardening and tempering and quenching in final;
- 03 Machinery: cnc center and higher accuracy grinder;
- 04 Final process: hard chrome-plating or nitriding treatment.

★ 本公司代为设计各种拉挤型材的预成型模。

★ Pultrusion mould design as well as Prefomer

