

NW 新威奇科技
NEWWISH TECH

J58ZK **6300**

In July 2024, the world's largest tonnage 6,300-ton servo direct-drive CNC electric screw press was successfully delivered for the manufacture of large fan blades for aircraft engines.

TURNKEY SOLUTIONS

DIE FORGING

Newwish Technology Co.,Ltd.

Global Leader in Electric Screw Presses

Company Profile



Newwish was founded in 1993 by Professor Huang Shuhuai, President of Huazhong University of Science and Technology. The company is built on a strong academic and engineering foundation. Its innovation capability is supported by collaboration with leading research platforms at Huazhong University of Science and Technology. A highly qualified R&D team—comprising PhD and Master's degree engineers—works alongside an advisory board of senior academics and industry experts to drive continuous technological advancement.

Committed to advancing servo direct-drive forging technology, Newwish has established itself as a leading innovator in large-tonnage precision forming. In 2024, the company delivered the world's largest 6,300-ton servo direct-drive electric screw press, marking a significant breakthrough in high-end forging equipment. The company is certified to ISO 9001, ISO 14001, and ISO 45001 standards, and its products comply with CE requirements for the European market and are certified by Japan's Sustainable Open Innovation Initiative (SII) for energy efficiency. Its equipment is widely used in aerospace, automotive, construction machinery, energy, transportation, tooling, and medical industries. Products are exported to Europe, Japan, India, Southeast Asia, Africa, and other international markets. To date, Newwish has served over 600 customers globally, delivered more than 1,900 precision forging machines, and installed nearly 200 automated forging production lines. By enhancing productivity, precision, and energy efficiency, Newwish supports the global forging industry's transition toward smarter, greener, and more sustainable manufacturing.

About Newwish

Newwish Technology Co., Ltd. is a national high-tech enterprise specializing in die forging machine tools. The company focuses on the R&D and manufacturing of precision die forging equipment, including electric screw presses and servo hydraulic presses, as well as automation systems and complete forging production lines. Newwish delivers integrated turnkey solutions that combine equipment, process engineering, automation, digitalization, and intelligent manufacturing for high-end industrial applications worldwide.



Scan the QR code to watch the company video

Global Leader in Electric Screw Presses

2003: Developed China's first second-generation electric screw press.

2023: Delivered China's largest 4000-ton servo direct-drive CNC electric screw press.

2024: Delivered the world's largest 6300-ton servo direct-drive CNC electric screw press.

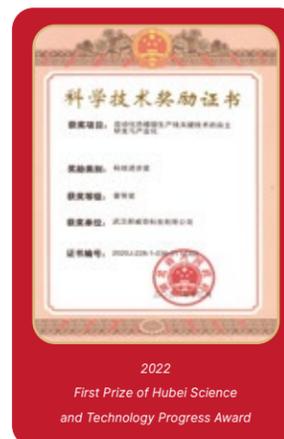
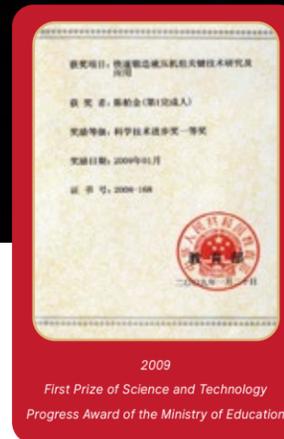
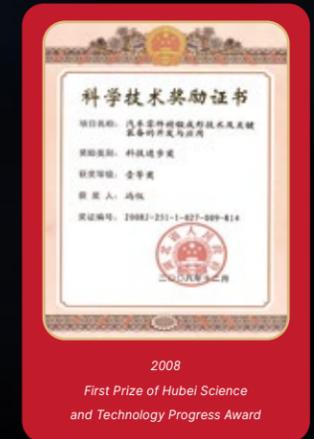
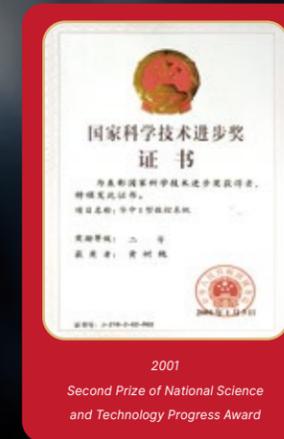
Newwish has won 2 national awards, 9 provincial and ministerial awards, and was selected as one of the top ten scientific and technological advances in China's intelligent manufacturing. Newwish has more than 70 patent certificates and more than 10 software copyrights. It also took the lead in establishing the "Electric Screw Press" group standard, participated in 1 industry standard and 2 national standards.



Inspiration for the Newwish logo Derived from the thread feature on the screw of an electric screw press.



Newwish is the first company in China to successfully develop electric screw presses, and is also the first company in China to have turnkey engineering capabilities for fully automatic forging production lines. In addition, Newwish has ranked first in China's servo direct-drive electric screw press market share for many years.



Servo Forging Presses



J58ZK Series

Servo Direct Drive CNC Electric Screw Press
1600~125000 kN

Equipped with advanced servo drive system and CNC control technology, it can forge almost all types of forgings. With high performance and high reliability, it meets the users' stringent requirements for quality and stability and is the preferred equipment for precision die forging.



Y685K Series

Die Forging CNC Servo Hydraulic Press
1600~25000 kN

Widely used in die forging of ferrous and non-ferrous metals under hot, warm and cold conditions, especially suitable for Billet Making, trimming, punching, Sizing and other processes.



Y685KP Series

CNC Servo Hydraulic Horizontal Forging Machine
2000~12500 kN

Has the functions of extruding, upsetting, bending and forming parts, and can realize material gathering at any part, which is particularly suitable for vertical forging and flat forging composite process.

J58ZK - Servo Direct Drive CNC Electric Screw Press

Servo direct drive technology Multiplying the Core Advantages of Electric Screw Presses

Using the world's most mainstream and advanced drive solution, it has the best energy efficiency and the greatest process adaptability, and can forge almost all types of forgings. More precise energy control enables it to have high forming accuracy and stable product quality, which is beneficial to obtain forging products with higher properties, especially suitable for precision forging of non-ferrous metals such as aluminum alloys and copper, as well as difficult-to-deform materials such as titanium alloys and high-temperature alloys.

Permanent Magnet Synchronous Servo

Uses a low-speed, high-torque permanent magnet synchronous motor, offering excellent torque density and performance. Its full closed-loop programming control ensures outstanding flexibility and precision.

Low-Speed, High-Torque

No external excitation is required, which reduces motor torque ripple and improves the motor's resistance to shock and vibration.

Variable Frequency Drive

Direct Torque Control offering fast torque response, stable output, and no impact on the power grid.

Motor Status Management

Independent cooling circulation system with dynamic monitoring of parameters such as temperature, voltage, and current.



Direct Drive, Silent, Durable

By integrating the motor rotor and flywheel, the system achieves zero energy loss and transmission, greatly improving production efficiency. The streamlined design enhances reliability by minimizing fault factors.

High Control Accuracy

High-resolution encoder and closed-loop control algorithm, providing precise impact energy control, ideal for precision forging.

High Transmission Efficiency

Motor directly drives the flywheel, with no intermediate transmission components, ensuring high transmission efficiency.

Stability and Reliability

Brushless and simplified transmission design minimizes failure points and greatly extends service life.



PLC Control Technology

Enables precise adjustment and pre-setting of equipment parameters, executes complex logic operations, and makes decisions based on input signals for advanced automation control.



HMI Interaction Platform

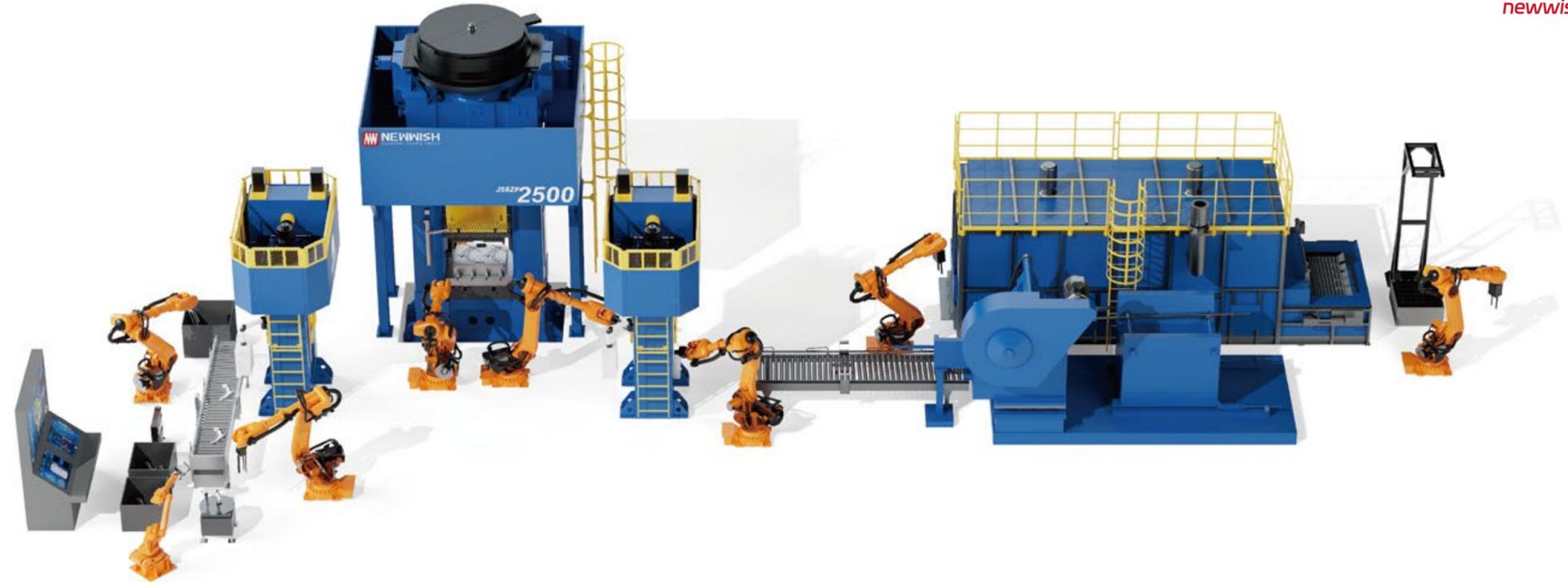
The Equipped with an intuitive color touch-screen interface, providing real-time monitoring of production line status, such as energy data, strike numbers, and error alerts.



J58ZK - Servo Direct Drive CNC Electric Screw Press

More Advantages:

- *Mold life: Adjust the impact energy as needed to reduce the mechanical and thermal stress of the mold and extend the mold life.*
- *Cost saving: No friction load driving components, effectively reducing the use cost and making equipment maintenance easier.*
- *Energy saving: the motor directly drives the flywheel to do work, no energy loss, effectively reducing energy consumption.*
- *No noise: except for the clamping sound, there is no running noise, which improves the working environment of workers.*



Models		J58ZK-160	J58ZK-250	J58ZK-315	J58ZK-400	J58ZK-500
Nominal Force	[kN]	1600	2500	3150	4000	5000
Continuously Permitted Press	[kN]	2500	4000	5000	6400	8000
Die-to-Die Blow Force	[kN]	3200	5000	6300	8000	10000
Gross Working Capacity	[kJ]	10	15	20	40	50
Max. Slide Stroke	[mm]	300	320	380	400	400
Max. Stroking Rate	[min ⁻¹]	30	28	26	24	22
Backing Plate Thickness	[mm]	120	120	120	120	120
Min. Enclosed Height	[mm]	515	515	550	570	570
Screw Diameter	[mm]	200	200	225	240	240
Area of Table F-B	[mm]	580	580	640	750	750
Area of Table L-R	[mm]	600	600	700	750	750
Area of Slide F-B	[mm]	560	560	620	730	730
Area of Slide L-R	[mm]	520	520	646	630	630
Installed Power	[kW]	≈20	≈25	≈30	≈55	≈70
Average Power	[kW]	≤10	≤12	≤15	≤26	≤30

J58ZK-630	J58ZK-800	J58ZK-1000	J58ZK-1250	J58ZK-1600	J58ZK-2000	J58ZK-2500	J58ZK-3150	J58ZK-4000	J58ZK-5000	J58ZK-6300	J58ZK-8000	J58ZK-10000	J58ZK-12500
6300	8000	10000	12500	16000	20000	25000	31500	40000	50000	63000	80000	100000	125000
10000	12800	16000	20000	25600	32000	40000	50000	64000	80000	100000	128000	160000	200000
12600	16000	20000	25000	32000	40000	50000	63000	80000	100000	126000	160000	200000	250000
80	100	160	200	280	360	500	700	1000	1250	1600	2280	3600	4500
450	475	500	525	600	600	650	700	750	800	850	900	1100	1100
20	19	18	17	16	15	14	13	12	10	10	9	8	8
160	160	200	200	220	250	300	300	300	300	320	320	350	350
720	860	950	1050	960	1200	1300	1400	1500	1600	1700	1800	2000	2100
280	300	360	380	420	460	520	580	660	725	820	910	1020	1120
900	900	1060	1100	1310	1350	1430	1800	2000	2000	2200	2400	3000	3000
820	820	920	1000	1000	1250	1400	1500	1670	1700	2000	2200	2400	2400
870	870	1020	1020	1280	1280	1560	1600	1640	1800	2000	2200	2800	2800
710	710	850	850	968	1000	1260	1300	1480	1540	1750	2000	2200	2200
≈100	≈125	≈175	≈225	≈275	≈355	≈450	≈600	≈800	≈950	≈1150	≈1500	≈2000	≈3000
≤42	≤50	≤80	≤90	≤115	≤135	≤170	≤203	≤280	≤350	≤395	≤500	≤620	≤900

Typical Forgings



Y68SK - Die Forging CNC Servo Hydraulic Press

Pump-Controlled Servo Technology It is an efficient and energy-saving hydraulic control method that uses servo motor to drive the main drive oil pump, reduce the control valve circuit, and realize the precise control of slide speed, pressure and stroke.



Hydraulic Unit

The system adopts cartridge integrated valve, the main oil pump is a gear pump, and it adopts AC permanent magnet synchronous motor drive. It has the characteristics of compact structure, sensitive action, stability and reliability, anti-pollution, convenient maintenance and long service life.

Mechanical Structure

The machine body adopts an integral frame structure, which relieves stress after welding. The slider is a high-quality steel plate welded structure, annealed after welding, the column guide rail is made of alloy material, the master cylinder and ejector cylinder are single-cylinder structure, and it is a piston cylinder.

Control System

The pressure, speed and position of the slider are fully closed-loop digital control, with high degree of automation and good accuracy. Pressure, speed and position are programmable to meet various process needs and have good flexibility.

Models		Y68SK 160	Y68SK 250	Y68SK 315	Y68SK 400	Y68SK 500	Y68SK 630	Y68SK 800	Y68SK 1000	Y68SK 1250	Y68SK 1600	Y68SK 2000	Y68SK 2500
Nominal Force	[kN]	1600	2500	3150	4000	5000	6300	8000	10000	12500	16000	20000	25000
Return Force	[kN]	100	100	100	200	200	200	300	300	500	500	1000	1000
Open Height	[mm]	750	850	950	1000	1100	1200	1300	1400	1450	1500	1600	1700
Ram Stroke	[mm]	400	500	550	600	650	650	650	700	750	800	900	1000
Working Table Size L-R	[mm]	500	600	700	900	900	1200	1200	1200	1400	1500	1600	1600
Working Table Size F-B	[mm]	500	600	700	850	900	1000	1100	1200	1300	1500	1500	1600
Ram Speed - Quick Forward	[mm/s]	300	300	300	300	300	300	300	300	300	300	300	300
Ram Speed - Feeding	[mm/s]	5-55	5-55	5-55	5-55	5-55	5-55	5-55	5-55	5-55	5-55	5-55	5-55
Ram Speed - Quick Return	[mm/s]	300	300	300	300	300	300	300	300	300	300	300	300
Bottom Ejector Ejection Force	[kN]	60	60	60	60	60	240	240	240	240	500	500	500
Bottom Ejector Ejection Stroke	[mm]	100	100	100	100	100	100	100	100	100	100	100	100
Bottom Ejector Ejection Speed	[mm/s]	100	100	100	100	100	100	100	100	100	100	100	100
Rated Hydraulic Pressure	[MPa]	25	25	25	25	25	25	25	25	25	25	25	25

The speed of work can be customized according to customer needs

Y68SKP - Servo Hydraulic Horizontal Forging Machine

It is especially suitable for ferrous and non-ferrous metal forgings, such as titanium, stainless steel, superalloy and other billets, die forging and precision forging under cold forging, warm forging and hot forging. Compared with the traditional mechanical flat forging machine, it has the major advantage of full-stroke work and a number of forging functions.

Hydraulic Unit

The vertical clamping cylinder and the horizontal top forging cylinder adopt a servo pump control system, which reduces the control valve circuit, the system is more concise and the maintenance is more convenient. It can realize full-stroke forging, and the forming speed is adjustable.

Mechanical Structure

V-shaped guide rail is adopted in the horizontal direction and four-corner eight-sided guide rail is adopted in the vertical direction, which has higher guiding accuracy and can effectively bear the force in the horizontal direction, which improves the service life of the mold and has low maintenance cost in the later stage.

Control System

The forming curve of the slider can be set to facilitate process and tool debugging, and shorten the product development cycle. The degree of automation is high, which can realize one machine and multiple stations and one fire forging, and the production efficiency is greatly improved.



Models		Y68SKP 200/315	Y68SKP 315/500	Y68SKP 400/630	Y68SKP 500/800	Y68SKP 630/1000	Y68SKP 800/1250	Y68SKP 1000/1500	Y68SKP 1250/2000
Upsetting Force	[kN]	2000	3150	4000	5000	6300	8000	10000	12500
Upsetting Ram Stroke	[mm]	150	300	300	300	300	300	350	350
Upsetting Speed	[mm/s]	5-100	5-100	5-100	5-100	5-100	5-100	5-100	5-100
Clamping Force	[kN]	3150	5000	6300	8000	10000	12500	15000	20000
Clamping Ram Stroke	[mm]	250	300	300	300	350	350	350	350
Clamping Open Height	[mm]	400	450	450	450	550	550	550	550
Upsetting Die Width	[mm]	450	480	650	700	780	850	900	950
Rated Hydraulic Pressure	[MPa]	25	25	25	25	25	25	25	25

Turnkey Solution of Die Forging

Newwish continues to enable automation, information and intelligence for forging production line, helping product consistency, cost control, production line capacity and process improvement, so that users always have strong market competitiveness.

- Unloading HY120NC · Disc Saw
- Heating JH902 · Mesh Belt Heating Furnace
- Roll Forging 560 · Roll forging Machine
- Bending Y68SK-400 · Die Forging CNC Servo Hydraulic Press
- Preforming J58ZK-2500 · Servo Direct Drive CNC Electric Screw Press
- Final forging J58ZK-2500 · Servo Direct Drive CNC Electric Screw Press
- Trimming Y68SK-315 · Die Forging CNC Servo Hydraulic Press
- Inspection AutoVision H3 · Dimensional inspection system



Forging technology

A complete solution from forging process to die design and manufacturing, and then to quick die change.

Automation

One-stop, customized automation solutions to build efficient, safe, and flexible forging production systems.

Machine Vision

For the forging industry, we provide machine vision solutions for guidance, inspection, quality control and process optimization.

Digital

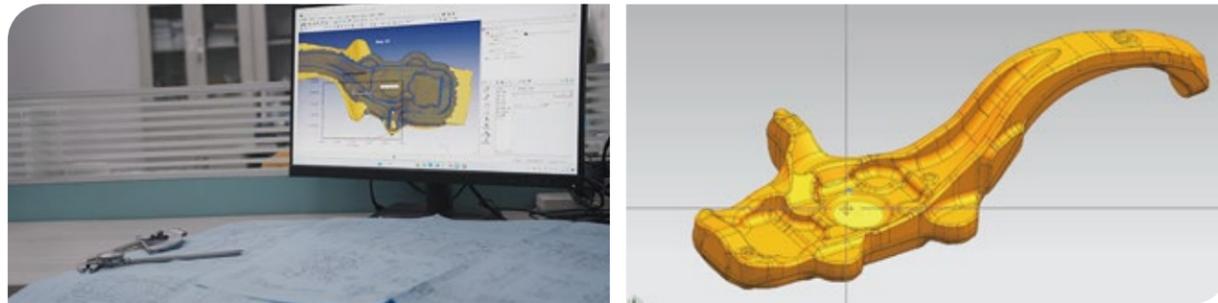
Enable process monitoring, traceability, remote diagnosis and intelligent decision making.

Forging technology

Newwish boasts a seasoned forging process and mold design team, along with a fully equipped mold production workshop. They are capable of devising the optimal plan based on user requirements, executing mold fabrication and testing, to guarantee the precision and quality of the molds.

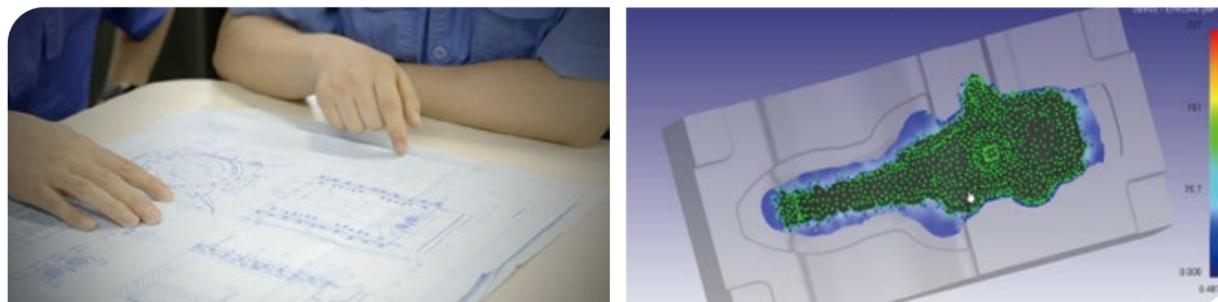
Forging Drawing Analysis

Comprehensively evaluate the geometry, size, material, and mechanical properties of forgings, and analyze and improve forging difficulties and process risks.



Routing Design

Consider your needs for capacity, quality, and budget, employing computer simulation and pilot production to tailor the process from raw materials to finished goods, optimizing key parameters for each step.



Forging Process Design

Formulate the forging process and work step diagram, determine the heating temperature, forging pressure etc., design the deformation extent and mode of forging step, and validate the process feasibility through finite element simulation



Aluminum alloy material forging process



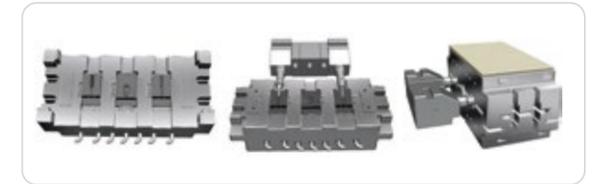
Cylinder head forging process



Titanium alloy material forging process

Mold and Die Holder Design

Design of the die, die holder insulation or cooling system according to the established forging process, taking into account the choice of material and manufacturing accuracy of the die.



Flat forging machine mold base and mold base quick change system



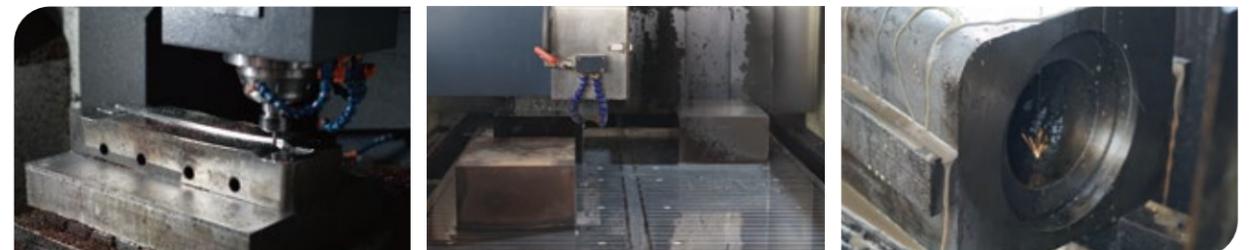
Heating mold base and temperature control system



Mold quick change structure design and quick mold change system

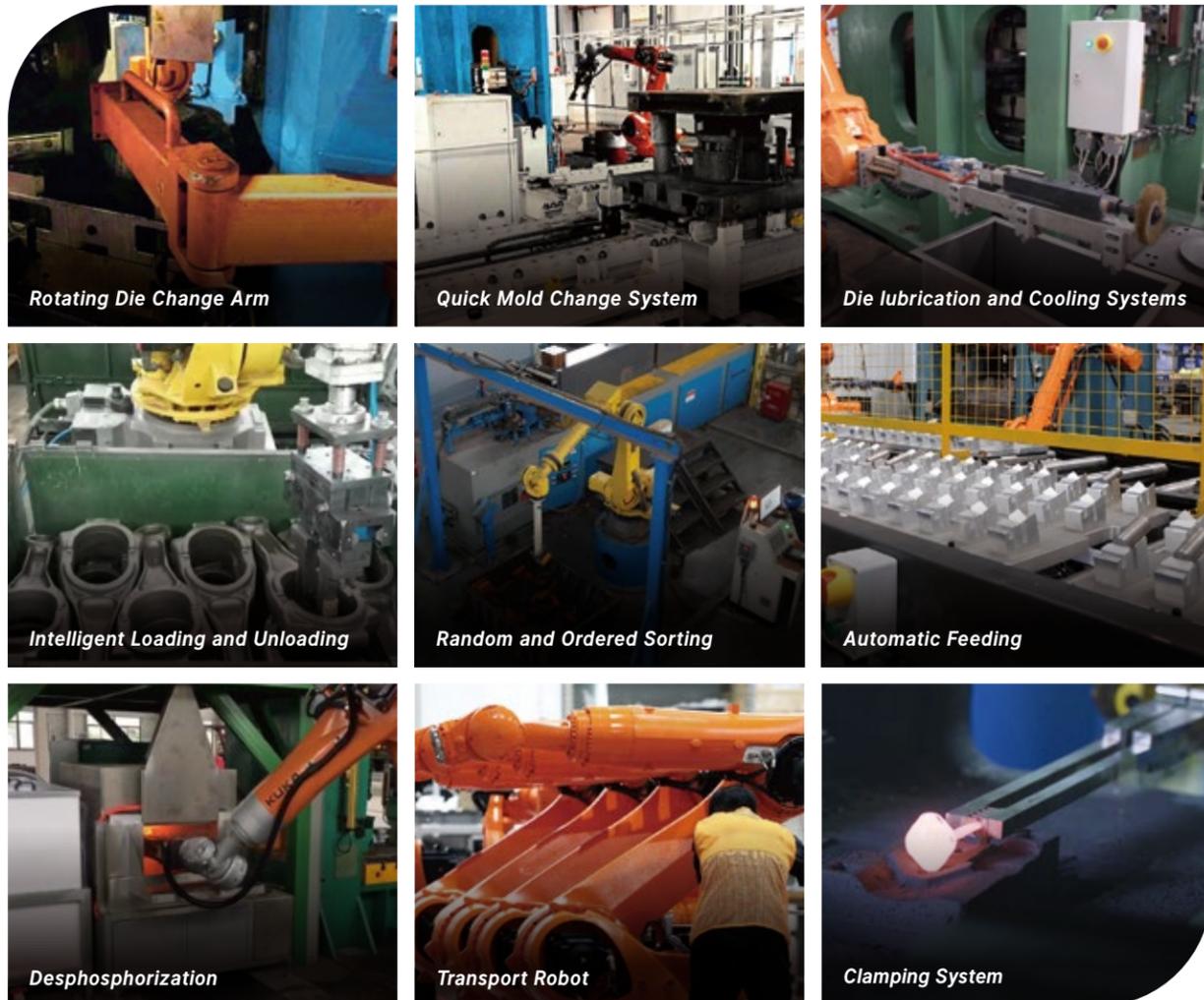
Mold Design and Manufacturing

It has complete mold processing and testing capabilities such as mold processing, heat treatment, material testing, mechanical property testing, etc., and at the same time, can provide customers with forging trial production services, and accept forging processes and molds with qualified samples.



Automation

With many years of project practice, Newwish has a deep understanding of equipment logic and process flow, and has achieved automated coordination and real-time monitoring of the entire line, effectively improving the continuity and efficiency of the production process.



Rotating Die Change Arm

Quick Mold Change System

Die lubrication and Cooling Systems

Intelligent Loading and Unloading

Random and Ordered Sorting

Automatic Feeding

Desphosphorization

Transport Robot

Clamping System

Machine Vision

From product design to mass production, from mold management to finished products, machine vision technology is widely used in the entire production chain of the forging industry.

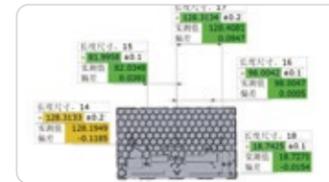


Line-Side Automated Visual Inspection Workstation

High Temperature Online Automated Visual Inspection System

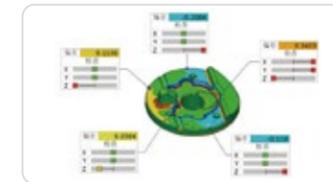
Mold Additive Repair and Remanufacturing Workstation

Key Dimension Inspection



Focused on inspecting the key dimensions of forgings, this approach enhances inspection efficiency to meet the demands of high-pace production testing.

Full-Size Inspection



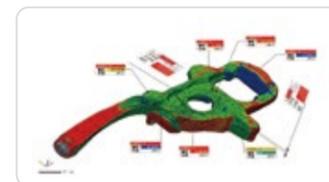
Comprehensive data collection of the entire forging is carried out based on the global point cloud to meet the requirements of full-size and full-scale inspection of forgings.

High-Temperature Online Measurement



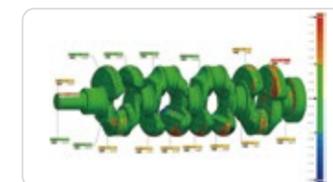
Online measurement of high temperature forgings helps to optimize the forging process and achieve the purpose of controlling the shape and performance of forgings.

First and Last Piece Inspection



Inspecting the first and last pieces of each batch helps assess the production line status and prevents issues such as batch-wide deviations, rework, and scrap.

Line-Side Inspection Stations



The line-side inspection station can inspect high-temperature or ambient temperature forgings to meet the various product inspection needs of the entire workshop.

Quality Traceability



The measurement data interacts with MES in real time to establish a unique correspondence between the data and the material ID, thus achieving accurate two-way quality traceability.

Digital

Industrial digitalization improves the digitalization, networking and intelligence level of R&D, production, operation and service by analyzing and processing the data generated by equipment and combining the characteristics of enterprises, so as to achieve the business goal of reducing costs and increasing efficiency, and improve the competitiveness of enterprises.



Data into Resource

Connects all device ports on the production line, breaking data barriers highly shared, easy to read and use, controllable and manageable.

Data Collection

The sensors and meters of the production line upload data to the PLC of each equipment through the interface, and centrally upload it to the general control PLC;

Data Processing

The total control PLC model uploads data to the local server for storage through the OPC UA network protocol;

Data Visualization

Establish C/S or B/S software architecture on the local server and display the data through the large screen;

Data Valorization

Drawing on extensive production data statistics, the system autonomously judges and analyzes, unlocking the maximum value of digitalization for corporate development.



Production Line Status Monitoring

Real-time perception of the operation of the production line to ensure the efficient and stable operation of the production line.



Remote Diagnostic Maintenance

Through mobile terminals, PC terminals and other platforms, cross-regional, cross-system viewing, and processing of fault information.



Production Data Traceability

Traceability of production data helps identify potential problems, optimize processes, and improve product quality in a timely manner.



Data Management Analytics

Based on historical data and machine learning algorithms, it senses product quality, predicts equipment failures, and effectively guides production.

Digital Frontier Exploration

Newwish is constantly exploring cutting-edge technologies, such as digital twins, motion simulation, digital twins, artificial intelligence and other technologies. Newwish is cultivating an AI question-answering robot for the forging industry - iMetal



Case Study

Titanium Alloy Forgings



Aero-engine blades automatic forging production line

Aluminum Alloy Forgings



Auto parts automatic forging production line

Copper Forgings



Fire cover Automatic forging production line

Iron Forgings



Tooth rings Automatic forging production line



Aero-engine blades automatic production line



Half shaft gear automatic forging line



line equipment automatic production line



Cylinder head automatic production line



Forged gate valve production line



Wind power steel ball automatic production line



Tibial bone plates automatic production line



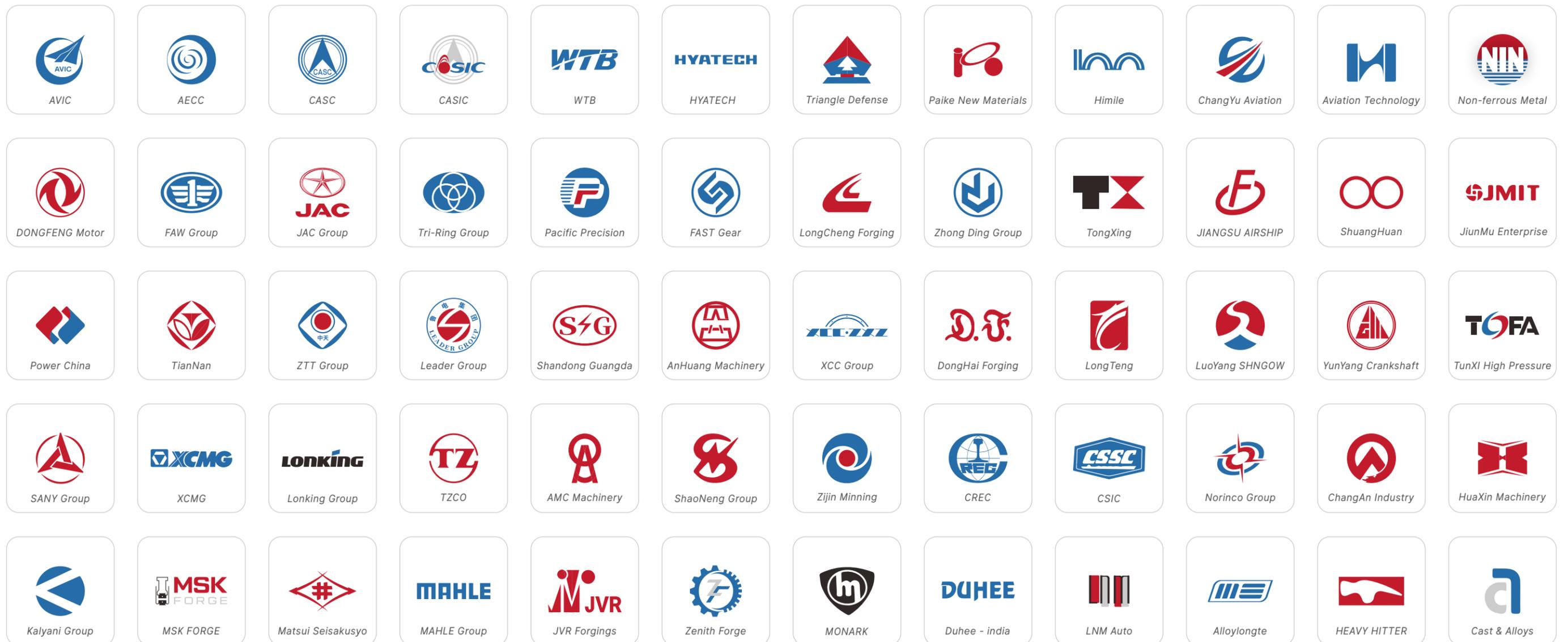
Bearing steel ball forging automatic line



Intelligent forging demonstration line

Our Clients

So far, Newwish has served more than 500 users, sold more than 1800 equipment, and built more than 150 fully automated forging production lines and turnkey projects.





NEWWISH
ELECTRIC SCREW PRESS

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