HDFDS
HARDY Flow Drill Screw System

Flow Drill Screw equipment and rivets system

Improve the efficiency and quality of the Flow drilling process through automation. Here are some key information sharing about the HDFDS system:

Tech. Development

Integrating German technology, made in China, an intelligent riveting laboratory is established for research and development as well as production.

·Flow drilling HDFDS technology, applied dual servo, provides high precision, high tempo control system and overall automation solution
·Patent HDFDS - Rivet Series

Automation features

- HDFDS- Flow drilling system achieves automation of the riveting process, including automatic fastener feeding mechanism, CNC dual electric driving force, and quality monitoring on joining process,etc.
- The closed-loop control system has 100% non-destructive detection and traceability management of quality data for riveting, improving the monitoring and traceability capabilities of riveting quality.

Process advantages

- The Flow drilling HDFDS technology can pierce materials and join them by tapping under the combined action of high-speed rotational torque and axial pressure, and is suitable for single-sided and closed cavity steel - aluminum joining.
- This technology is suitable for high-strength materials and mixed material joinings, and can meet the single-sided connection requirements of thick walls and closed cavity structures.

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Application

- The Flow drilling system is widely used in fields such as automotive body lightweighting, new energy battery manufacturing, plastic processing, and electronic devices manufacturing.

Equipment parameters

- The main power system is driven by CNC servo and has the function of automatic fastener feeding mechanism.
- Flexible installation method, supporting desktop installation or robot installation.
- The applicable range of HDFDS rivets is M4-M6, and the fastest working cycle can reach within 2 seconds.

System feature

- Quality Monitoring and Traceability Management 4.0 system includes:
- Monitoring quality results,
- Preventing quality defects,
- Recording job data,
- Generating quality big data,
- Quality traceability analysis,
- Remote fault diagnosis,
- Interfacing with MES systems,
- Etc.

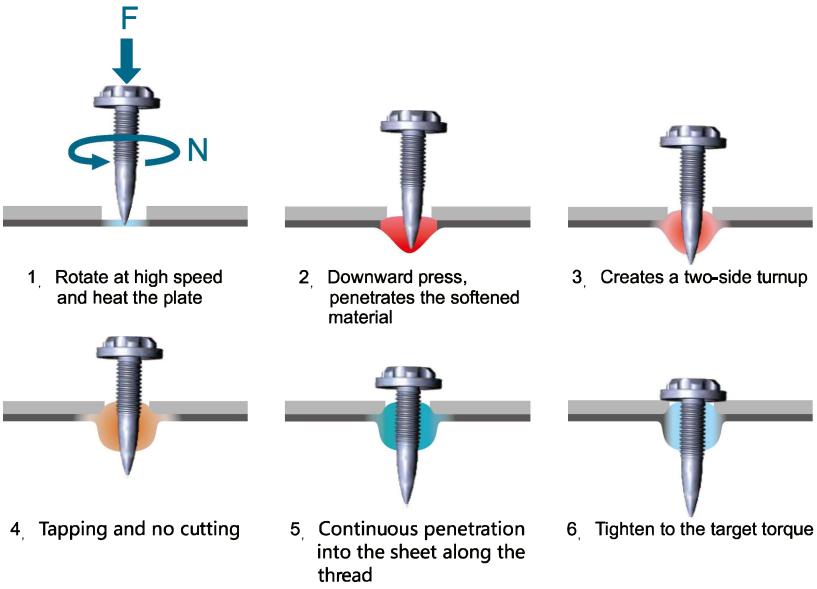
Flow Drill Screw system

Actuating unit

Auto Fastener
Feeding system

Independent
control system

Technical parameters



RPM	<8000r/min
Torque	<15Nm
Feed pressure	<3500N
Nozzle pre-pressure	<140Kgf
Setting Orientation	From above, below
Setting time	<6s
Drive system	Dual-engine servo motor
Power supply	380V/50HZ
Communication protocols	EtherNet/IP, ProfiNet, DeviceNet, CC-Link etc
Weight	40kg

Actuating unit

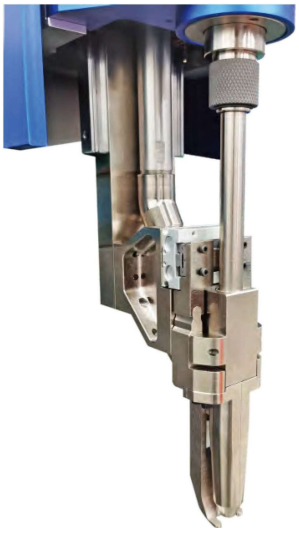
Features

- Single-side joining process
- Suitable for joining and assembling different materials of different thicknesses
- Dual servo drives, complete process monitoring
- High loosening torque, good air tightness and strong anti-vibration performance
- Bits can be exchanged quickly

Nozzle

Features

- Quick exchange
- Bolts positioning, Prevent tilting during the tightening process
- High-strength material, strong and durable
- Miniaturized design for tight spaces



Independent control system

Features:

- Standardize "embedded PC" control
- The standard HMI for parameter setting,data curve viewing,and Error alarm reminde
- Simple and intuitive interface,password protected access levels
- The riveting process is automatically monitored to ensure the quality of riveting
- Data acquisition allows important data to be uploaded to the factory MES to ensure product quality
- Multiple communication protocols such as EtherNet/ IP, ProfiNet, equipmentNet,CC-Link etc.

HARDY Auto Fastener Feeding System

Features:

- Simplified design, greatly improve the stability of feeding
- Fastener feeding time <1 S, to meet the CT requirements of all assembly industries
- The channel is independently customized to fully meet the adaptability of the fasteners
- Modular components for easy maintenance.

Feed hose

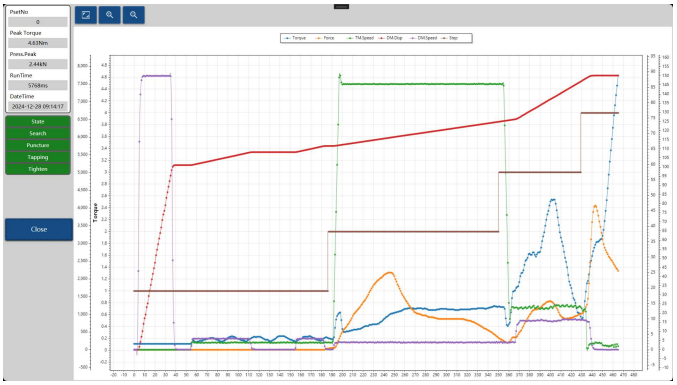
Features:

- Multiple specifications
- Remote Transmission

Software

Main interface:

- Functional, concise and straightforward
- Alert of the status of each posture during device operation
- Real-time feedback on the operation of the device
- It can be operated by touch or keyboard and mouse



Data Acquisition and Analysis:

- Process data acquisition and graphical analysis

Maintenance:

- Preset maintenance prompts and record usage data

Application Reference

Integrated Solution for Automated Non-standard fastening, Riveting, with auto fastener-feeding System