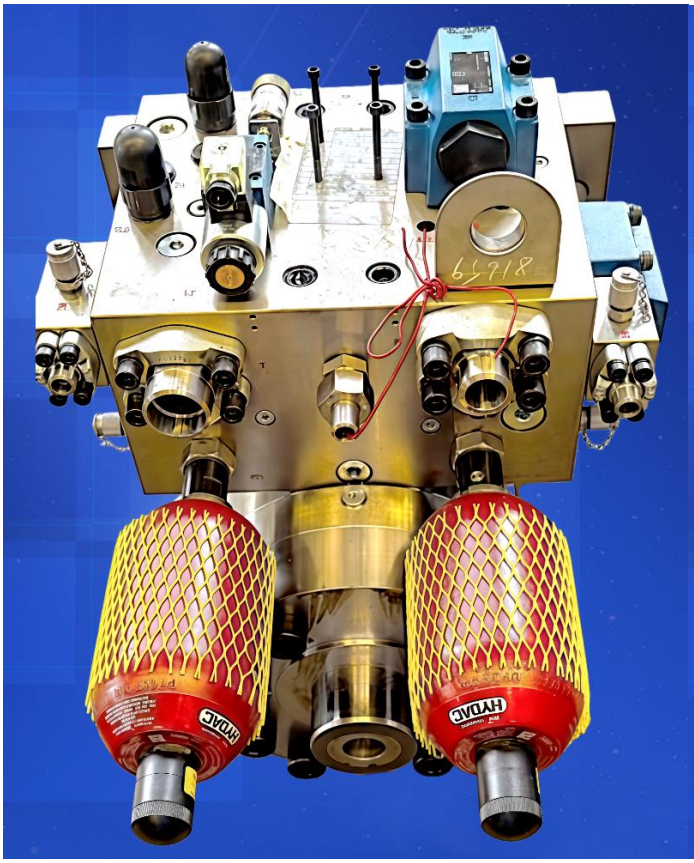
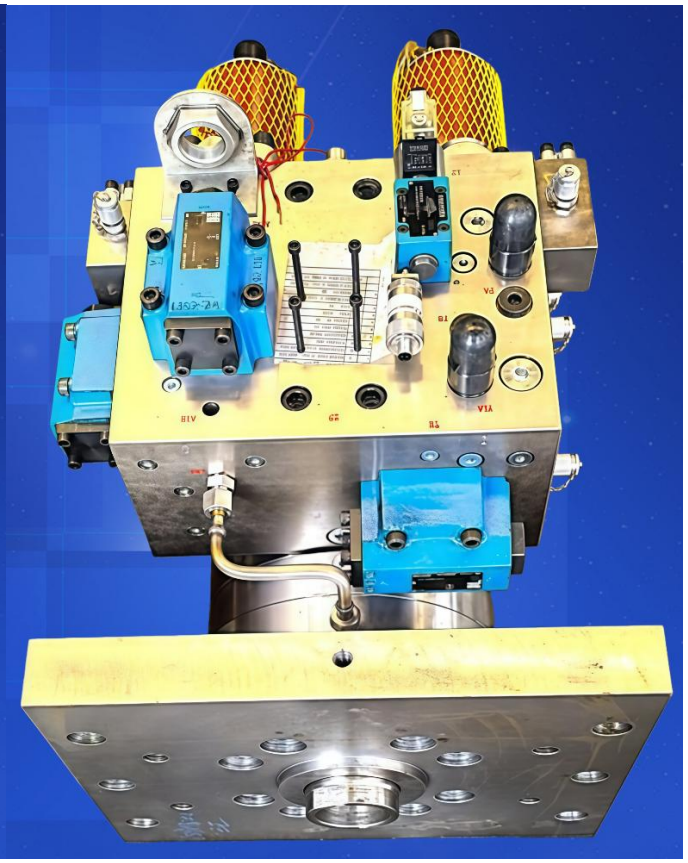
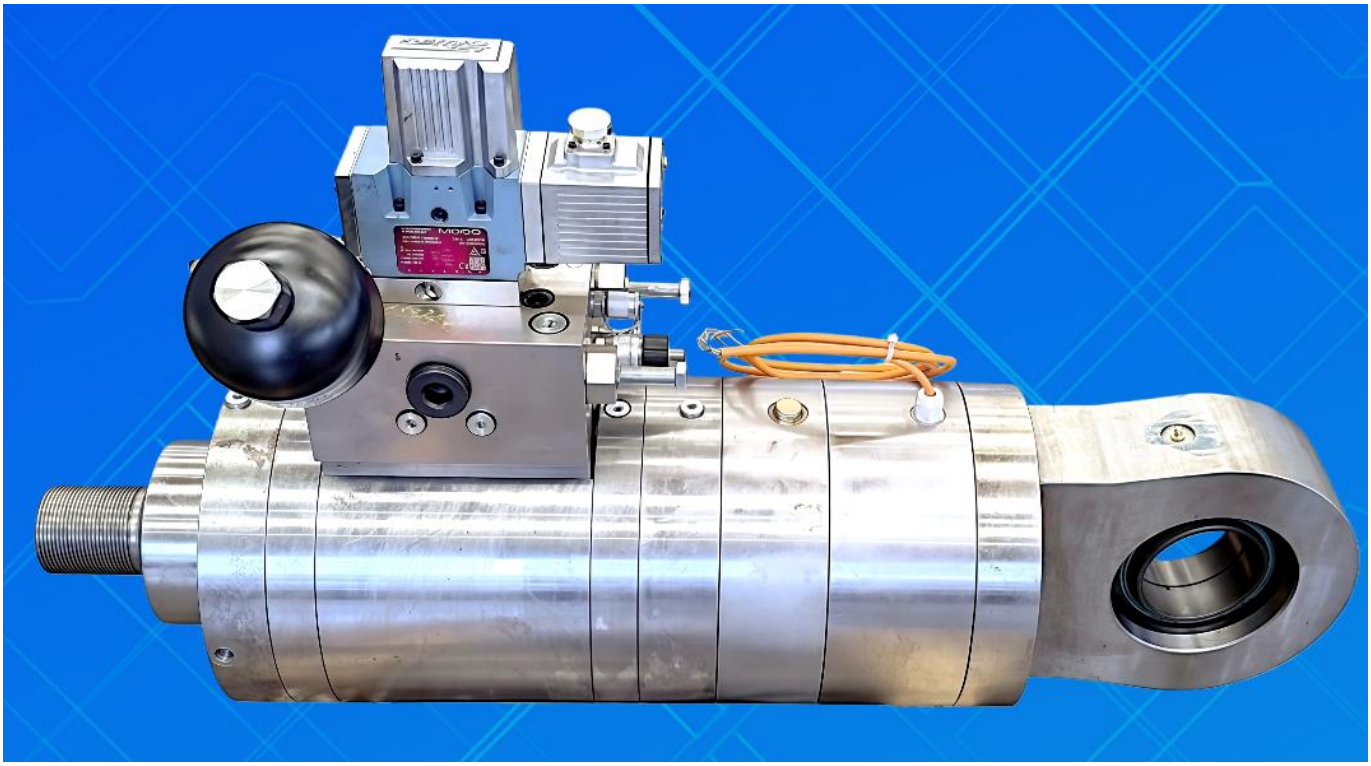
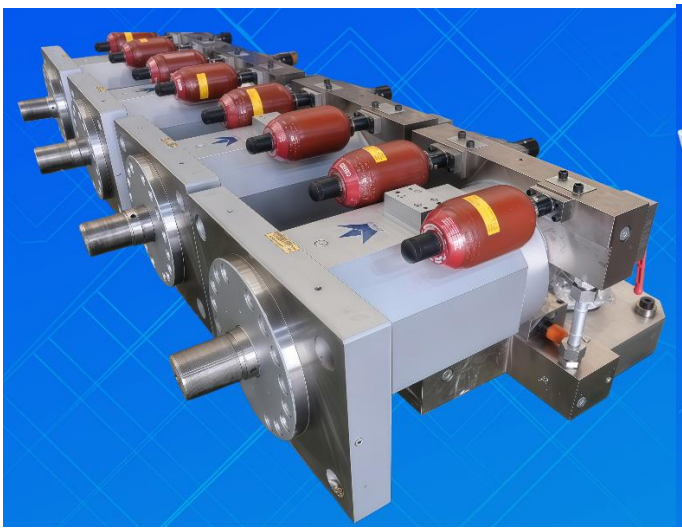
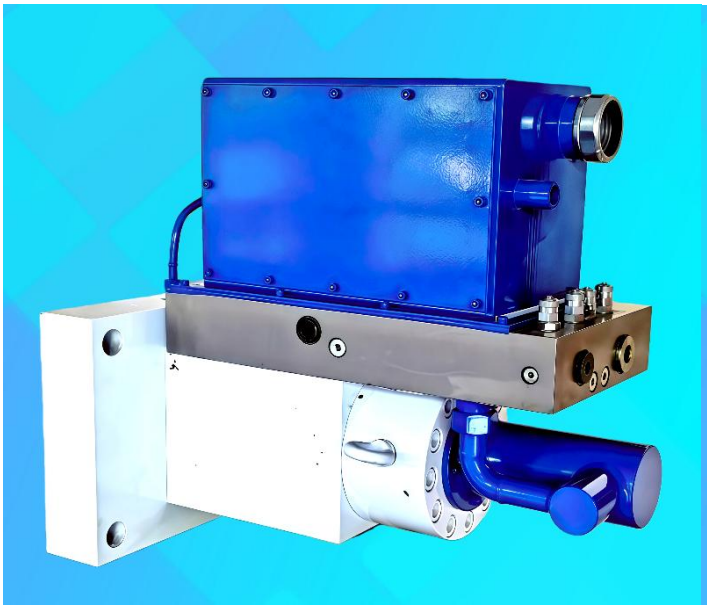
Photos of Crystallizer Servo Vibration Hydraulic Cylinder

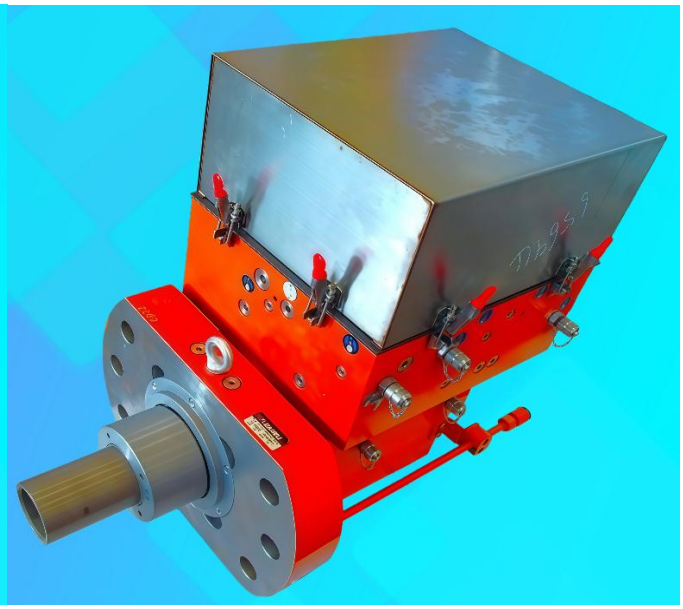


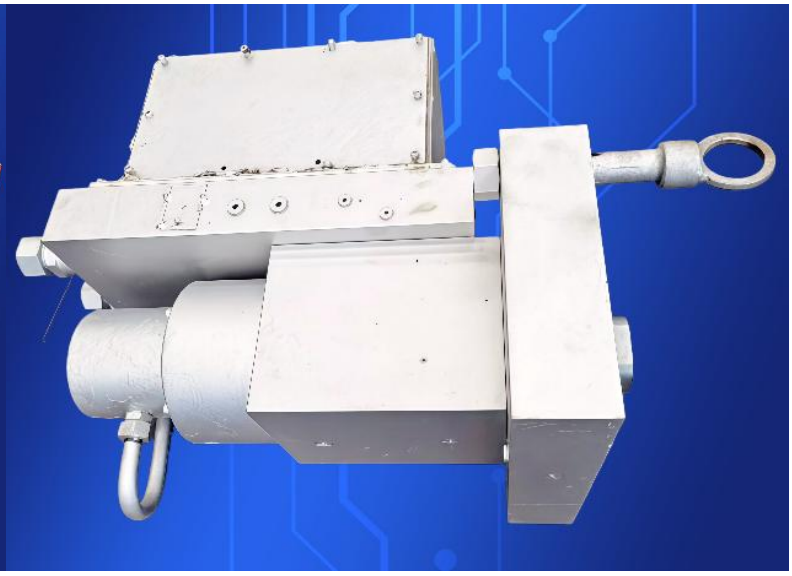


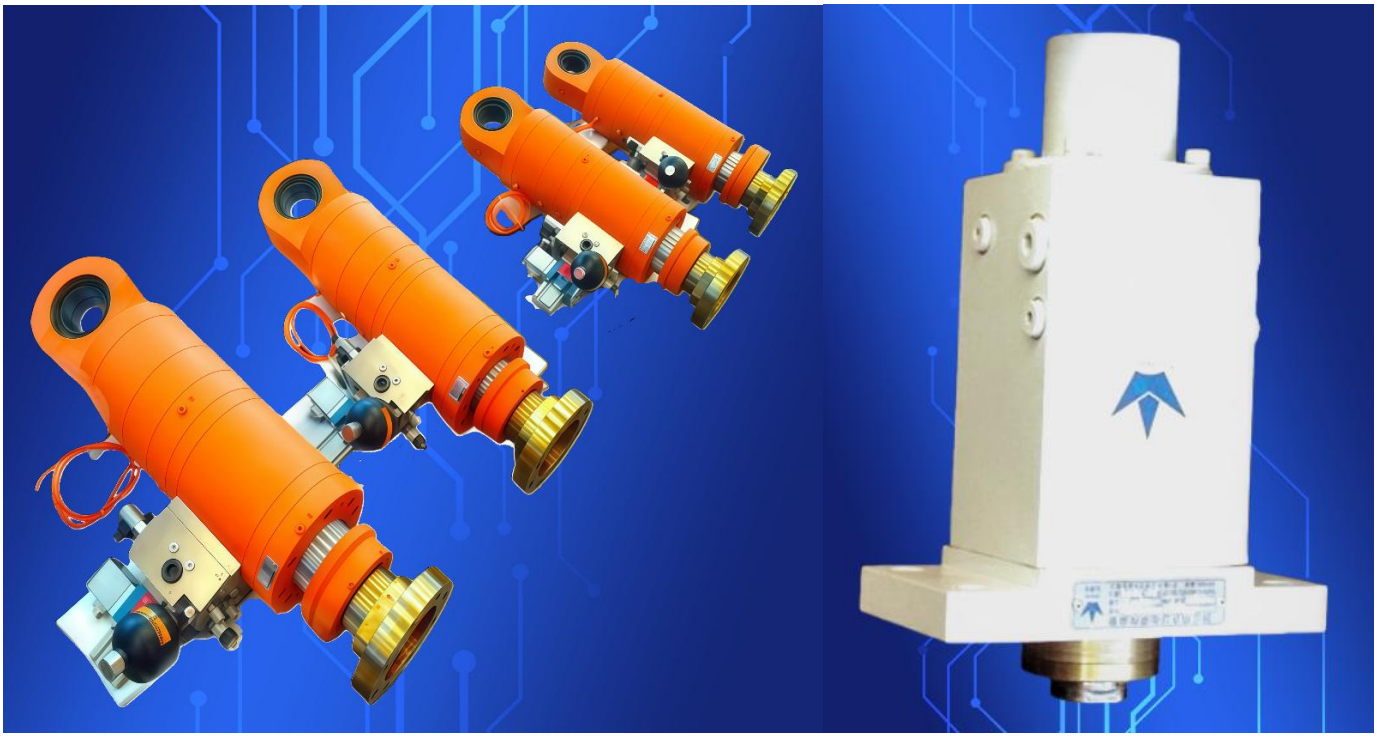




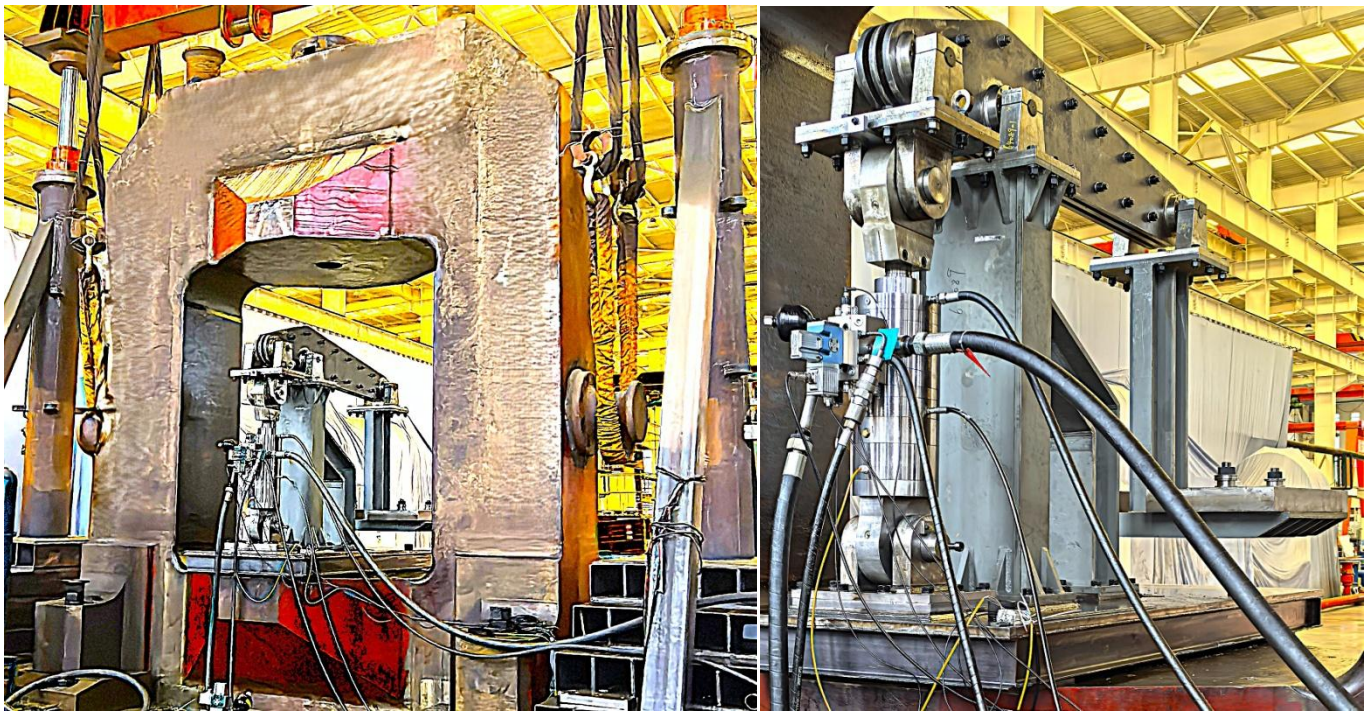








Photos of Crystallizer Vibration Servo Hydraulic Cylinder Performance Test Bench



Mold Oscillation Servo Hydraulic Cylinder

Precision Drive – Core Solution for Superior Casting Performance

Key Technical Advantages

Uranus mold oscillation servo cylinders provide **ultra-high precision and fast dynamic response** for modern continuous casting. With electro-hydraulic direct drive and fully integrated digital control, amplitude, frequency, and waveform skew can be tuned **online without shutdown**. The cylinder ensures precise negative slip arc oscillation, improving lubrication and preventing sticking.

Product Features

- **High precision control**: Micron-level amplitude; millisecond frequency response

- **Dual oscillation modes**: Supports sinusoidal and non-sinusoidal waveforms
- **Independent strand control**: Multi-strand CCMs with per-strand parameter tuning
- **Smart connectivity**: MES/expert system integration for remote monitoring, diagnostics, predictive maintenance
- **Rugged & reliable**: Long service life, low maintenance, stable under harsh conditions

Benefits

✅ Improved surface quality, reduced oscillation marks
✅ Higher yield and operational efficiency
✅ Supports high casting speed, increased productivity
✅ Energy savings and lower operating costs
✅ Easy installation, operation, and maintenance

Applications

Extensively used in high-efficiency billet, bloom, and slab continuous casting machines for both steel and non-ferrous metals.

Testing & Verification

Our in-house test benches simulate full-load conditions and provide **custom vibration trials** with complete reports including data logging and waveform analysis.

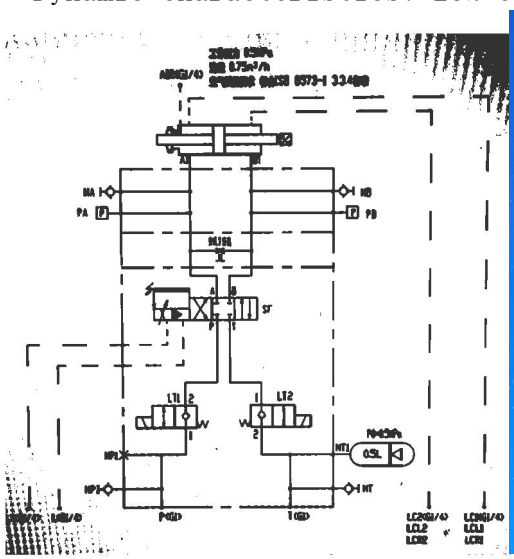
Why Choose Us

With 20+ years of expertise, Uranus has developed over 20 models and delivered hundreds of servo oscillation systems worldwide—trusted for **innovation, reliability, and performance.**

Typical Models & Specifications.

1. **1、Model: USYR2501R140/90-50LJHS+FK**

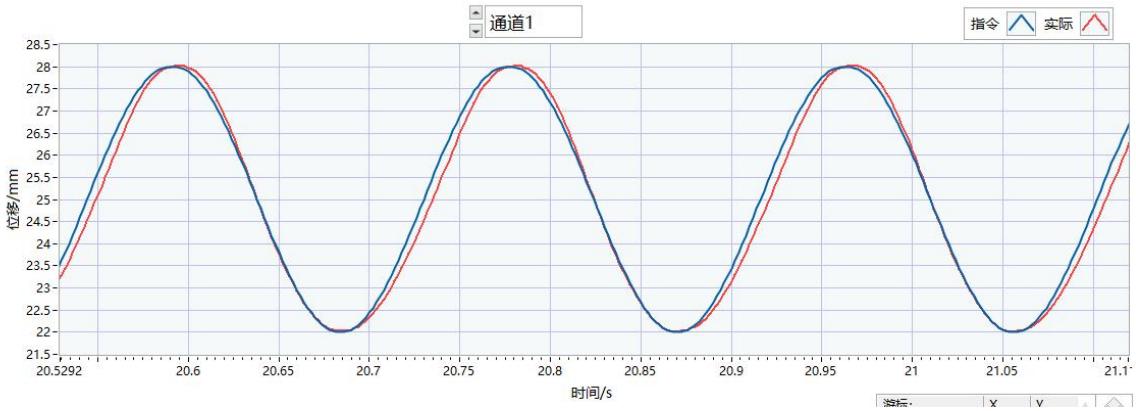
- Bore 140 mm; Rod 90 mm; Stroke 50 mm
- Pressure: Working 25 MPa; Test 31.5 MPa
- Medium: Water-glycol; Seal: FKM
- Built-in displacement sensor; servo valve block
- Servo valve: 75 L/min, max 350 bar; 24V, ±10 mA, feedback 4–20 mA
- Validation: Load 4500 Kg, vibration 193–325 OPM, accuracy within ±0.02 mm
- Dynamic Characteristics: 25% of maximum signal value > 60 Hz (9 slope line)



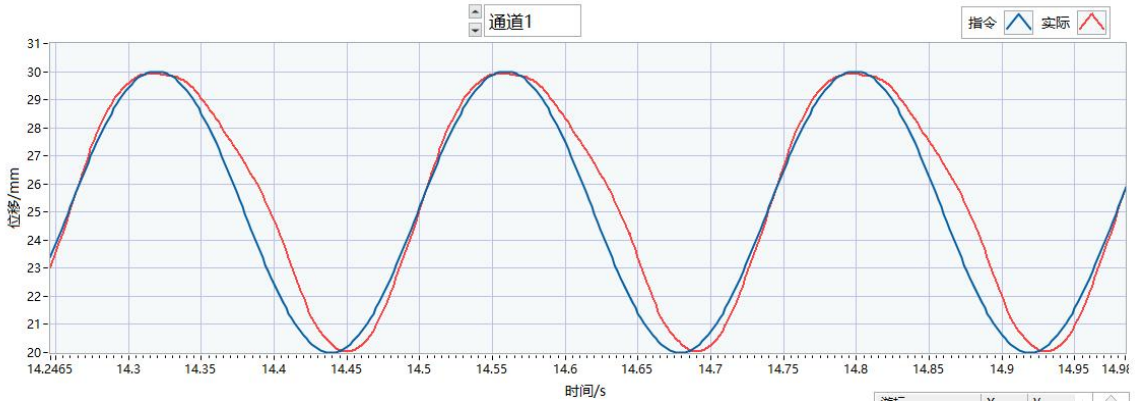
Load Test Curves of Crystallizer Servo Vibration Hydraulic Cylinder (Load: 4500Kg)

1）Total Stroke: 6mm（±3mm） ; Oscillation Frequency: 325 OPM;

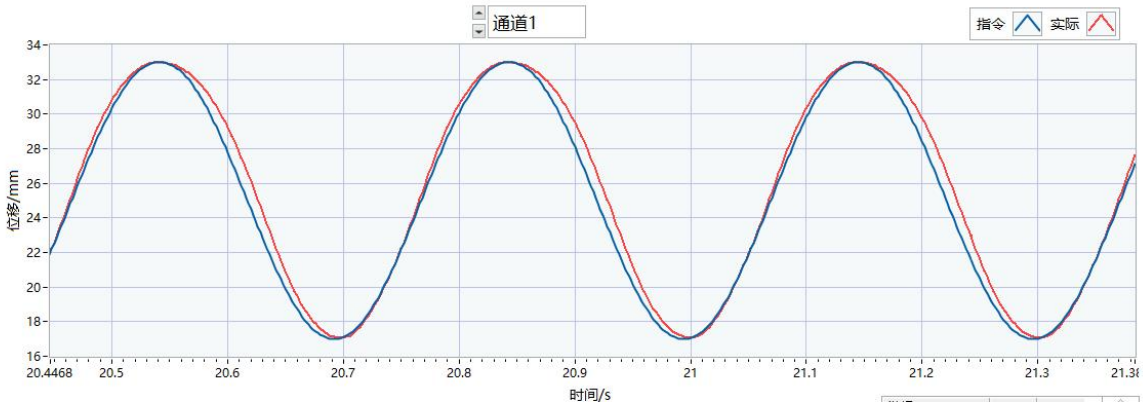
Accuracy: ±0.025 ~ -0.02mm. Refer to the figure below.



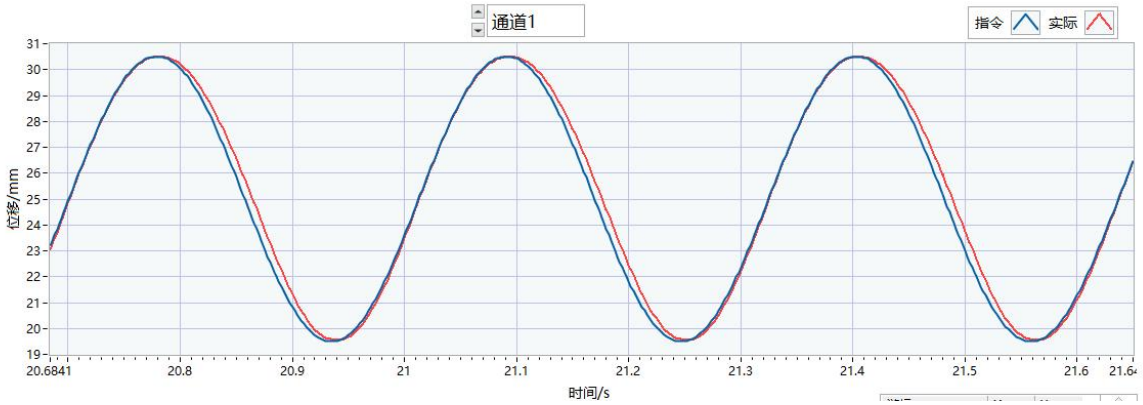
2） Total Stroke: 10mm（±5mm） ; Oscillation Frequency: 250 OPM;
Accuracy: ±0.07 ~ -0.02mm. Refer to the figure below



3）Total Stroke: 16mm（±8mm） ; Oscillation Frequency: 200 OPM;
Accuracy: ±0.015 ~ -0.05mm. Refer to the figure below.

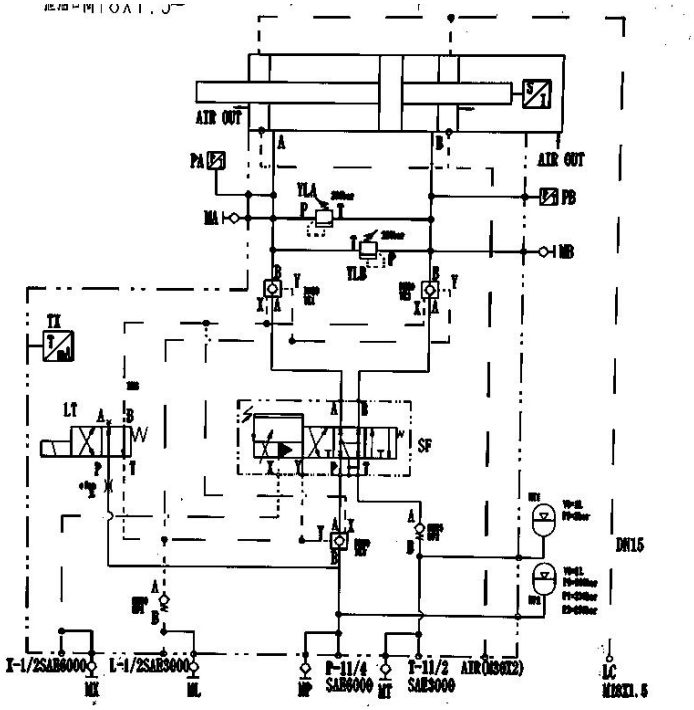


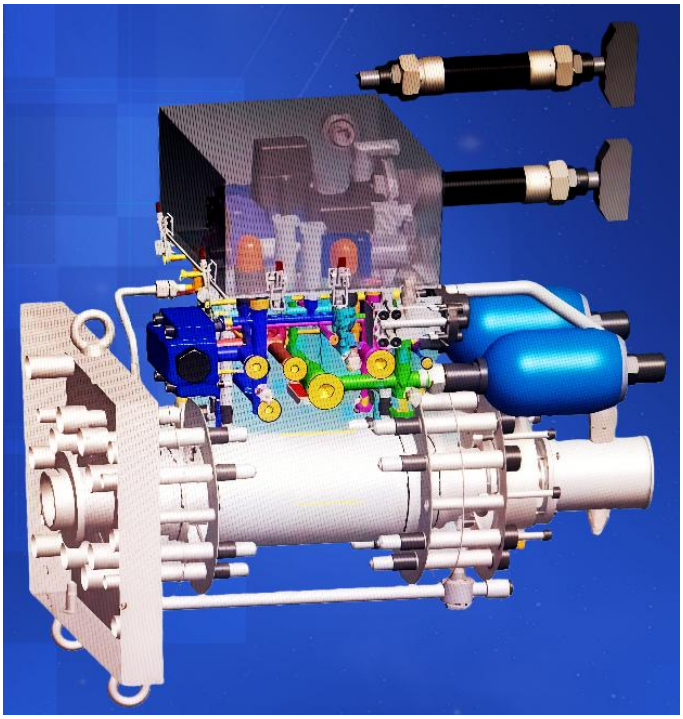
4） Total Stroke: 11mm（±5.5mm） ; Oscillation Frequency: 193 OPM;
Accuracy: ±0.015 ~ -0.05mm. Refer to the figure below.



2、Model: USYR2501R160/90-50LJHS+FK

- Bore 160 mm; Rod 90 mm; Stroke 50 mm
- Pressure: Working 25 MPa; Test 31.5 MPa
- Medium: Fatty ester; Temp −10℃~+80℃
- Built-in displacement sensor;

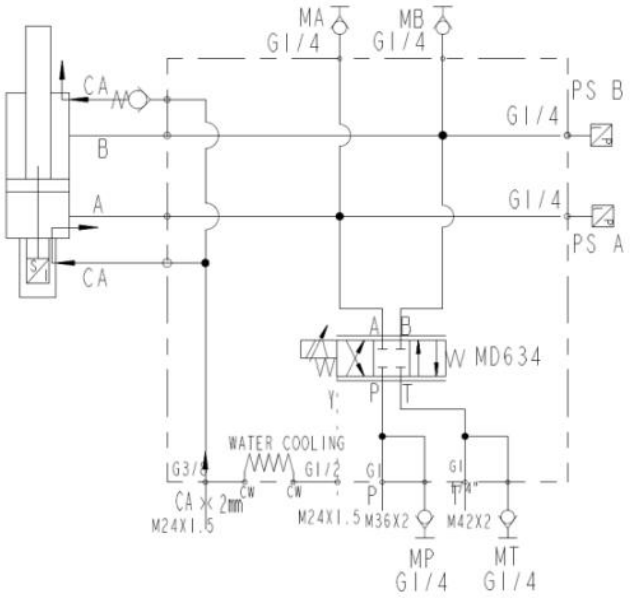


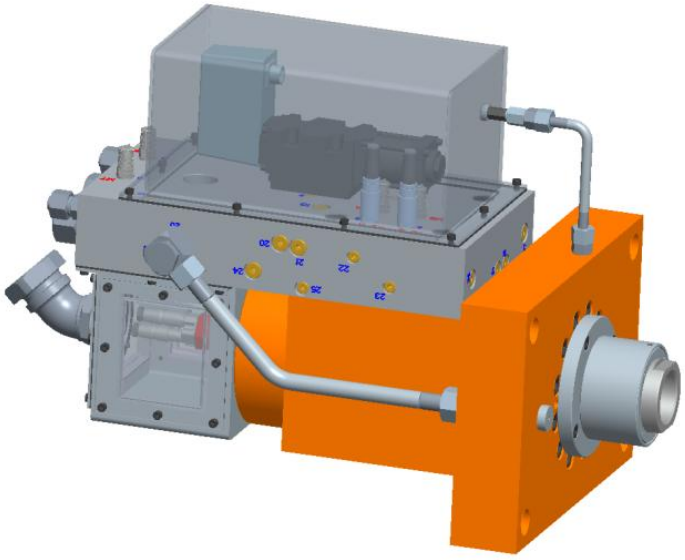


3、Model: 125/90-25

- Bore 125 mm; Rod 90 mm; Stroke 25 mm
- Pressure: Rated 21 MPa; Test 31.5 MPa
- Built-in LVDT; closed-loop servo

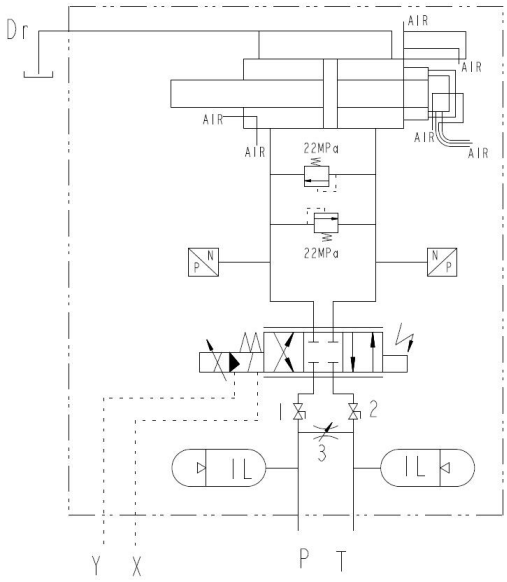
Valve box & rod boot pressurized with air for **cooling/dust**.

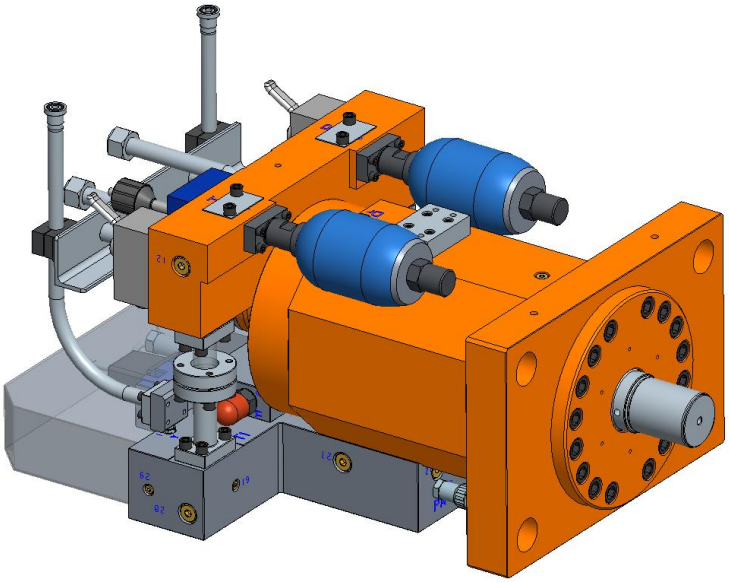




4、Model: 200/90-25

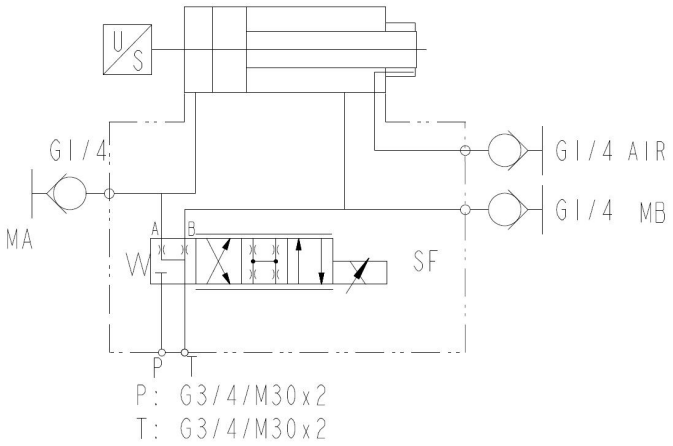
- Bore 200 mm; Rod 90 mm; Stroke 25 mm
- Pressure: Rated 21 MPa; Test 31.5 MPa
- Built-in displacement sensor; servo block with accumulator & valves

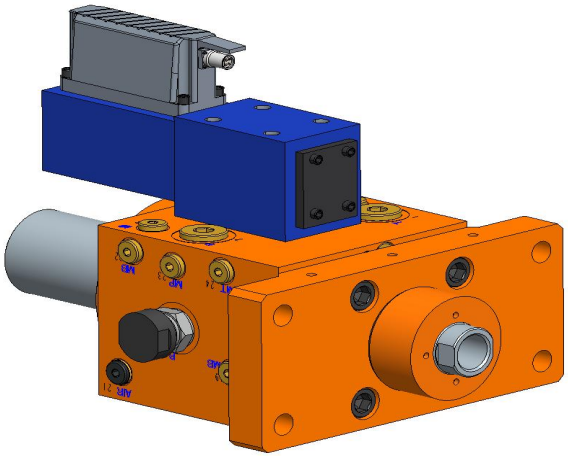




5、Model: 80/45-25

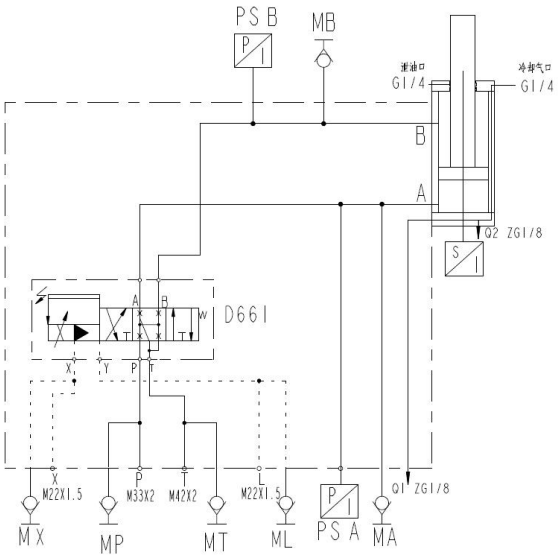
- Bore 80 mm; Rod 45 mm; Stroke 25 mm
- Pressure: Rated 25 MPa; Test 32 MPa
- Built-in displacement sensor; closed-loop

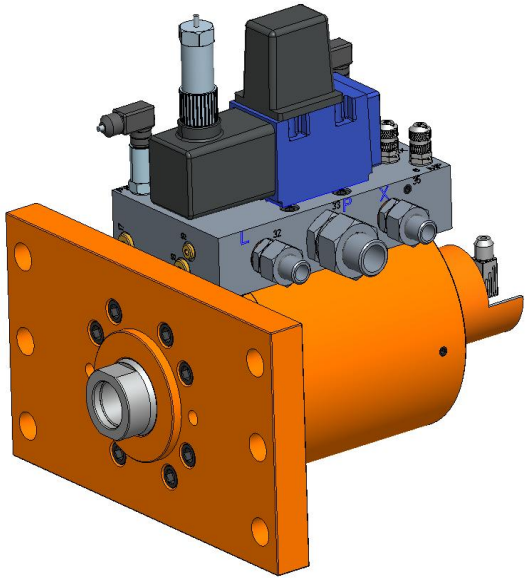




6、Model: 100/70-30

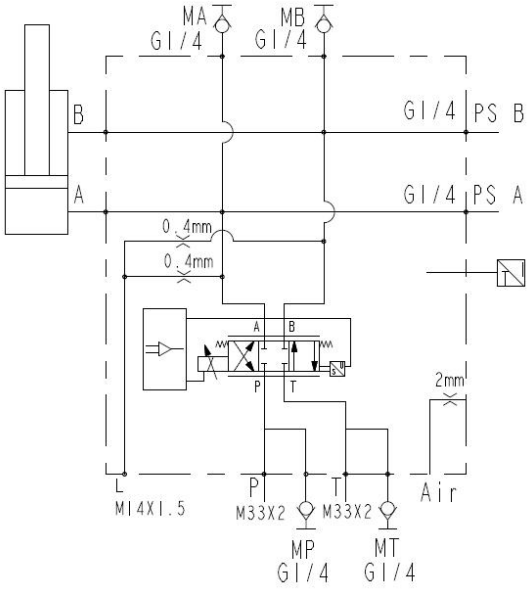
- Bore 100 mm; Rod 70 mm; Stroke 30 mm
- Pressure: Rated 21 MPa; Test 25 MPa
- Built-in displacement sensor; closed-loop

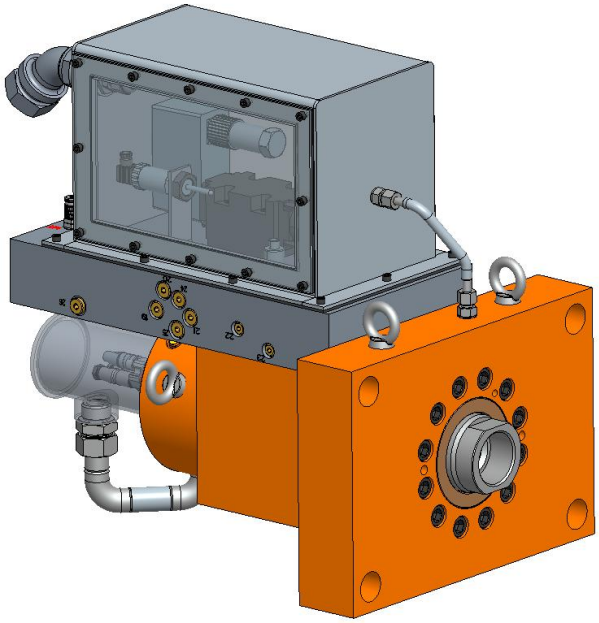




7、Model: 125/90-25 (dust/cooling type)

- Bore 125 mm; Rod 90 mm; Stroke 25 mm
- Pressure: Rated 16 MPa; Test 30 MPa
- Built-in displacement sensor; closed-loop; dust cover with air cooling





8. **8、Model: 100/70/70-33 (double-rod equal-speed)**

- Bore 100 mm; Rod 70/70 mm; Stroke 33 mm
- Pressure: Rated 10 MPa; Test 15 MPa
- Double-rod equal-speed design; built-in displacement sensor
- Cooling water jacket protects sensor chamber under high temp