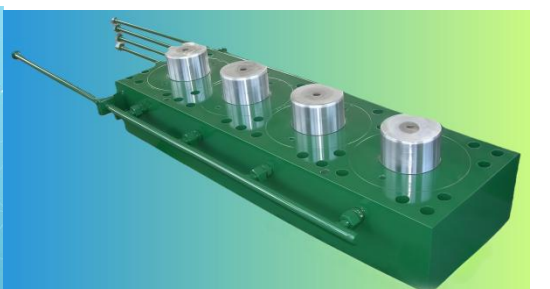
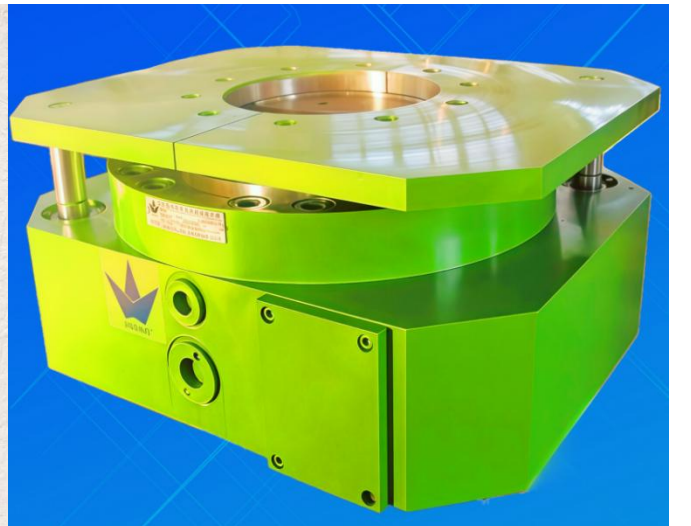
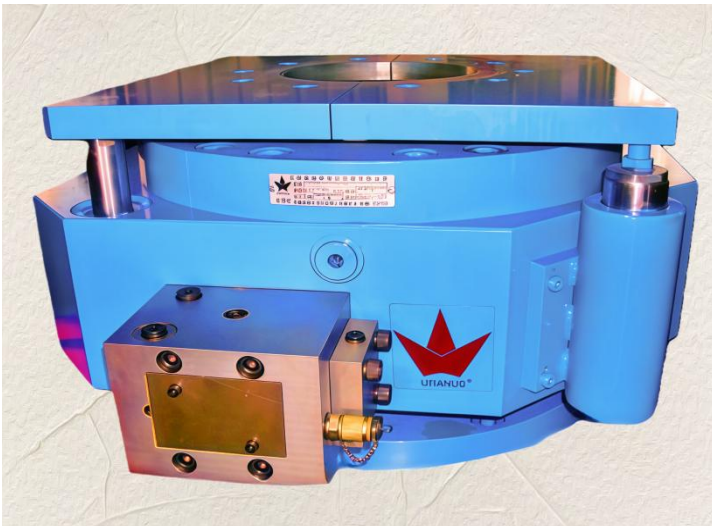
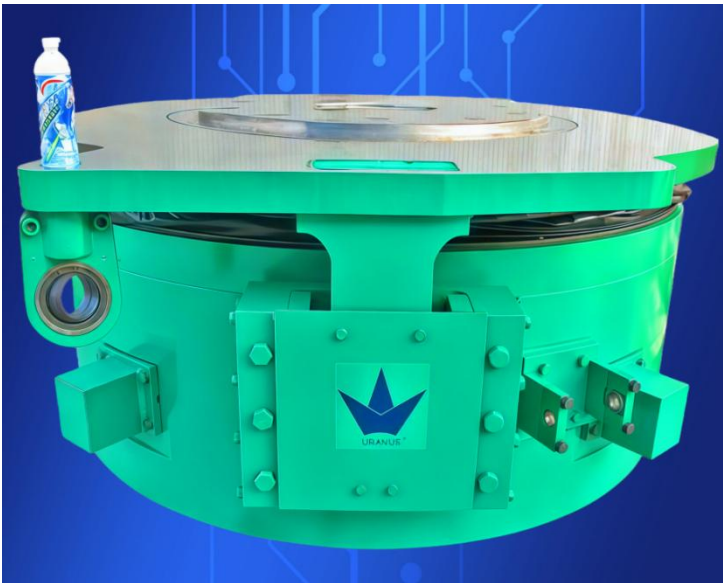
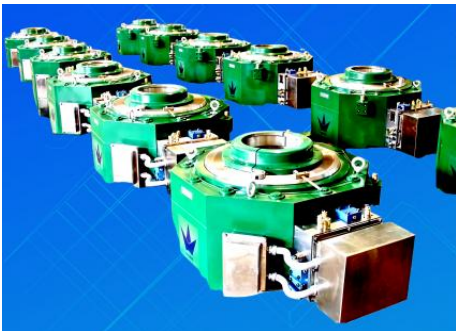
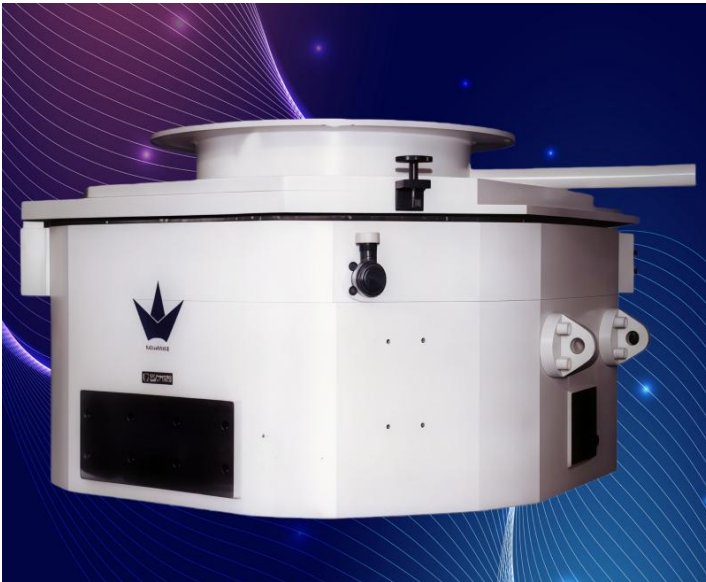
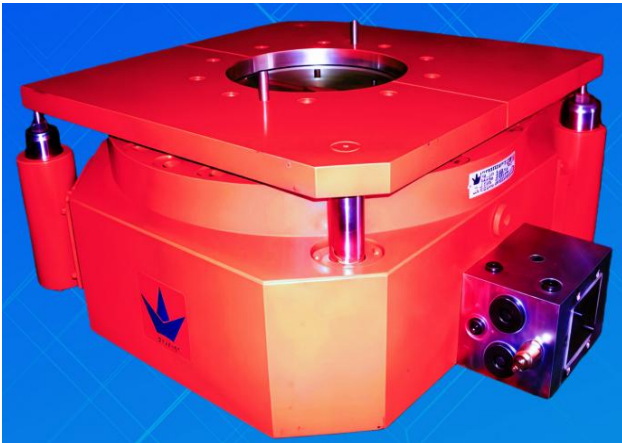
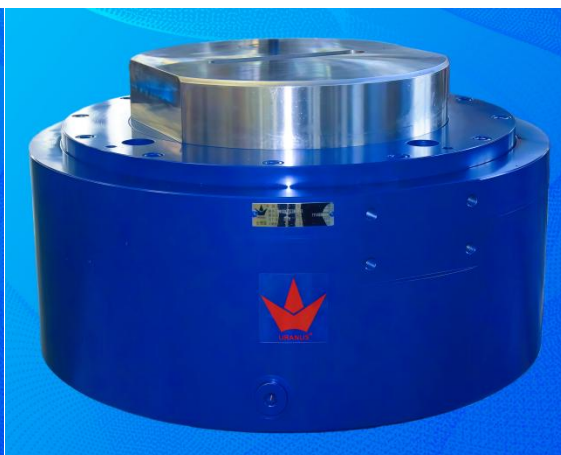
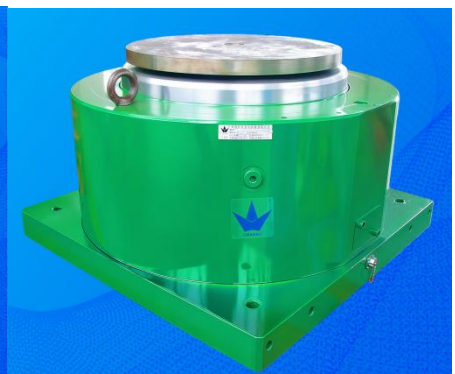
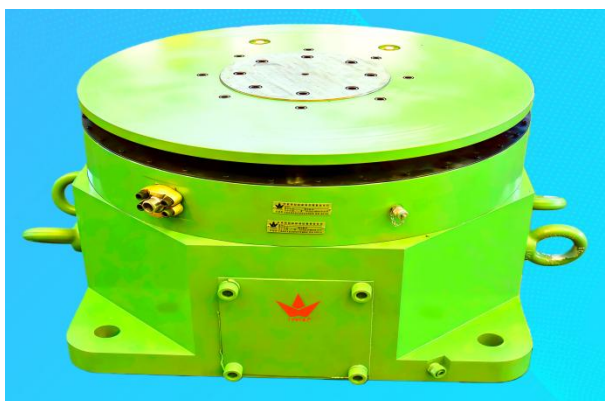


Photo of AGC series servo hydraulic cylinder









**The largest
8000TAGC
Servo hydraulic
cylinder test
bench in china**

(Independently designed and
developed by the company)



AGC Servo Hydraulic Cylinder

Automatic Gauge Control Cylinder

Uranus Hydraulic Machinery Co., Ltd.

A leading Chinese manufacturer of high-pressure, high-precision servo hydraulic cylinders, equipped with China's largest 8000-ton AGC cylinder testing platform.

1. Product Overview

The AGC servo hydraulic cylinder is the core actuator of Automatic Gauge Control (AGC) systems in steel rolling mills.

It precisely adjusts the roll gap via closed-loop electro-hydraulic control, ensuring stable strip thickness at the mill exit.

Displacement, pressure, and gauge signals form a closed-loop feedback. The controller processes them through PID and drives the servo valve to achieve micron-level roll gap control, featuring high precision, fast response, and excellent stability.

Applications:

- Hot strip mills
- Cold rolling mills
- Temper / skin-pass mills
- Stainless steel, silicon steel, aluminum, copper strip lines

2. Technical Advantages

Strong Engineering & R&D Capability

- 40+ design engineers
- Over 30 years of AGC cylinder expertise

- Thousands of AGC cylinders delivered worldwide
Available for OEM based on drawings or custom design.

Flexible Configurations

Sensors

- Pressure / force sensors
- Internal or external magnetostrictive sensors
- Magnetic scale / optical scale
- LVDT displacement sensors

Valve Options

- Servo valves (MOOG)
- Manifold / cartridge valves
- Pressure test & air-bleeding ports

Structural Options

- Spherical bearing
- Metal protective cover / bellows

3. Manufacturing & Quality Assurance

All cylinders comply with:

- GB/T 32216-2015 (Proportional/servo cylinder test method)
 - DIN ISO 10100:2022 (Hydraulic cylinder acceptance test)
- 100% inspection of all components with records archived for 10+ years.

Core Manufacturing Process

Cylinder Barrel

- 42CrMo forging, UT tested
- Precision boring & honing
- Hard chrome plating $\geq 0.08\text{mm}$, HV ≥ 800
- Surface roughness $\leq \text{Ra}0.4 \mu\text{m}$

Piston Rod

- 42CrMo quenched & tempered
- Hard chrome plating $\geq 0.08\text{mm}$
- Roughness $\leq \text{Ra}0.2 \mu\text{m}$

Seals

- High-pressure, low-friction servo seals (PTFE + NBR)
- Clean-room assembly

4. Full Testing (Curves Provided)

Static Tests

- 1.5× rated pressure, 10-min holding
- Zero permanent deformation & Zero leakage
- Internal leakage $\leq 1\text{MPa}$ drop in 5 min
- Starting pressure $\leq 0.01\text{MPa}$
- Friction variation $\leq \pm 5\%$

Dynamic Tests

- Step response $\leq 25 - 50\text{ms}$
- Overshoot $\leq 10 - 15\%$
- Frequency bandwidth $\geq 10\text{Hz}$
- Position accuracy $\leq \pm 0.005\text{mm}$

Testing Bench (Largest in China)

- 8000-ton push-pull load

- 35MPa, 1000L/min hydraulic power
- MOOG 792 servo valve
- ±0.01mm displacement accuracy

5. Reliability

Failure-free service life:

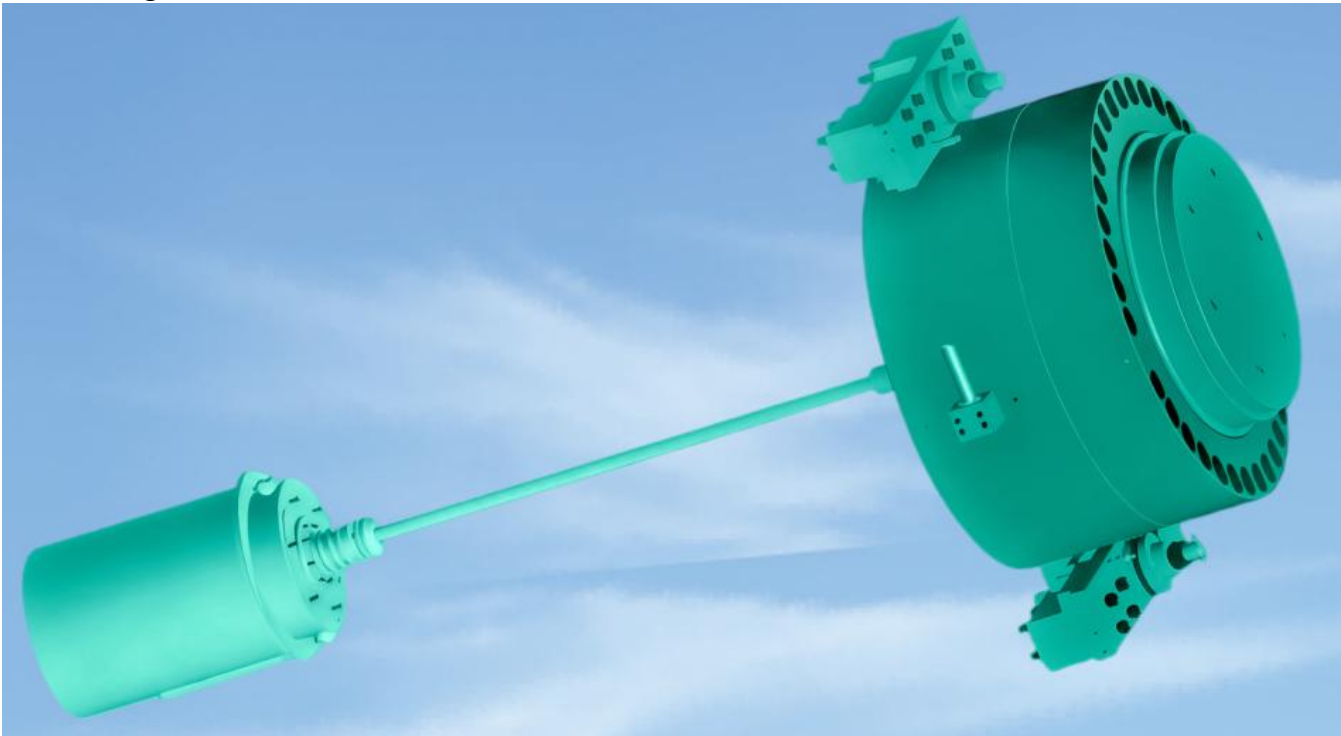
1 - 5 years (≥1,000,000 cycles)

AGC series servo hydraulic cylinder technical parameter table

Cylinder diameter	Rod diameter	under different working pressuresKN					Cylinder diameter	Rod diameter	under different working pressuresKN				
		10MPa	16 MPa	21 MPa	25MPa	28MPa			10MPa	16 MPa	21 MPa	25MPa	28MPa
300	260	707	1131	1484	1767	1979	800	750	5027	8042	10556	12566	14074
350	300	962	1539	2020	2405	2694	860	800	5809	9294	12199	14522	16265
360	320	1018	1629	2138	2545	2850	900	840	6362	10179	13360	15904	17813
380	340	1134	1815	2382	2835	3176	1000	900	7854	12566	16493	19635	21991
400	340	1257	2011	2639	3142	3519	1050	900	8659	13854	18184	21648	24245
420	360	1385	2217	2909	3464	3879	1100	1000	9503	15205	19957	23758	26609
450	400	1590	2545	3340	3976	4453	1200	1100	11310	18096	23750	28274	31667
480	420	1810	2895	3800	4524	5067	1300	1200	13273	21237	27874	33183	37165
500	450	1964	3142	4123	4909	5498	1400	1300	15394	24630	32327	38485	43103
550	500	2376	3801	4989	5940	6652	1450	1350	16513	26421	34677	41283	46236
600	550	2827	4524	5937	7069	7917	1500	1400	17671	28274	37110	44179	49480
620	580	3019	4831	6340	7548	8453	1600	1500	20106	32170	42223	50265	56297
650	580	3318	5309	6968	8296	9291	1700	1600	22698	36317	47666	56745	63554
700	640	3848	6158	8082	9621	10776	1800	1700	25447	40715	53439	63617	71251
720	660	4072	6514	8550	10179	11400	1900	1800	28353	45365	59541	70882	79388
760	700	4536	7258	9527	11341	12702	2000	1900	31416	50265	65973	78540	87965

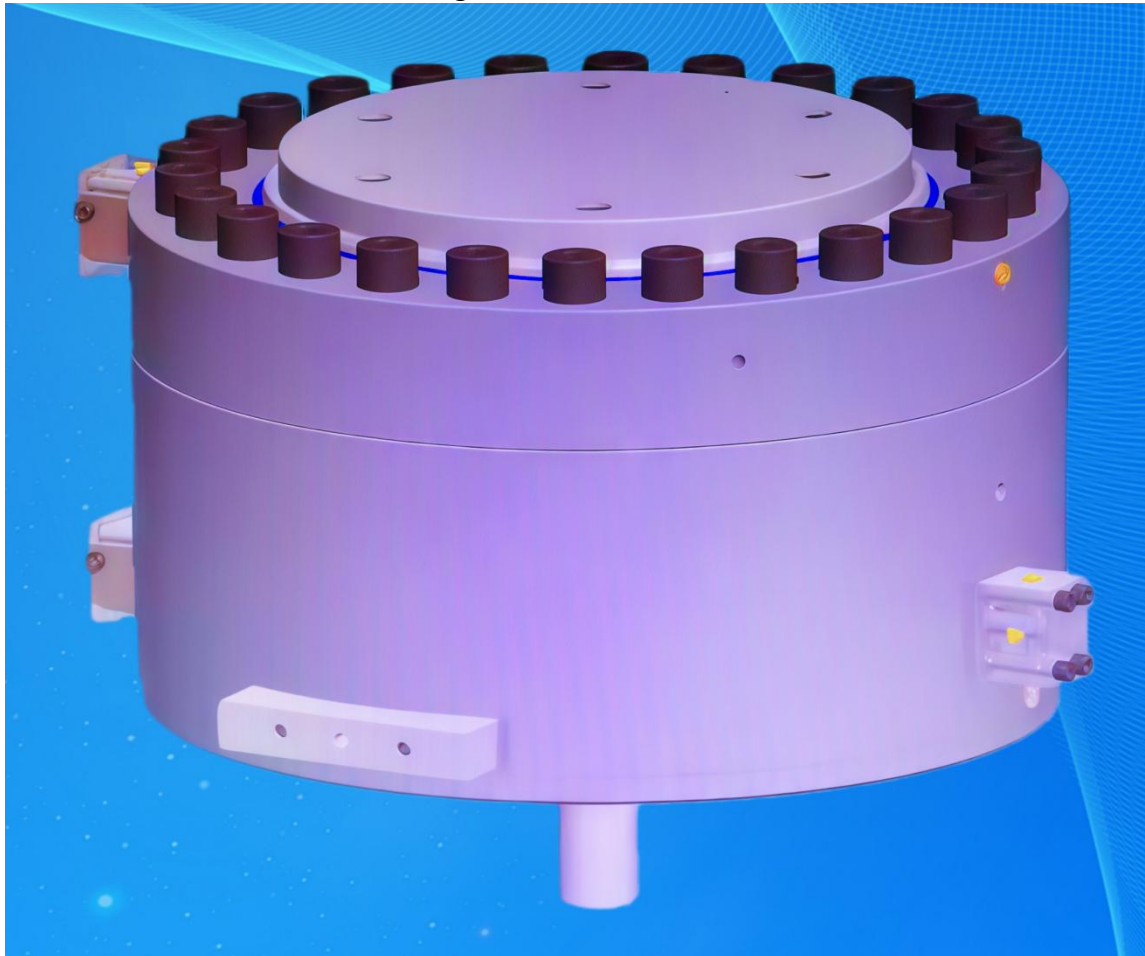
6. Typical Project Cases

1. Name: AGC Servo Hydraulic Cylinder; Model:UAGCT940/860-148 SONY
 Bore r: 940, Rod : 860, Stroke: 148; ; External SONY Magnetic Scale
 Working Pressure: 28MPa, Test Pressure: 35MPa



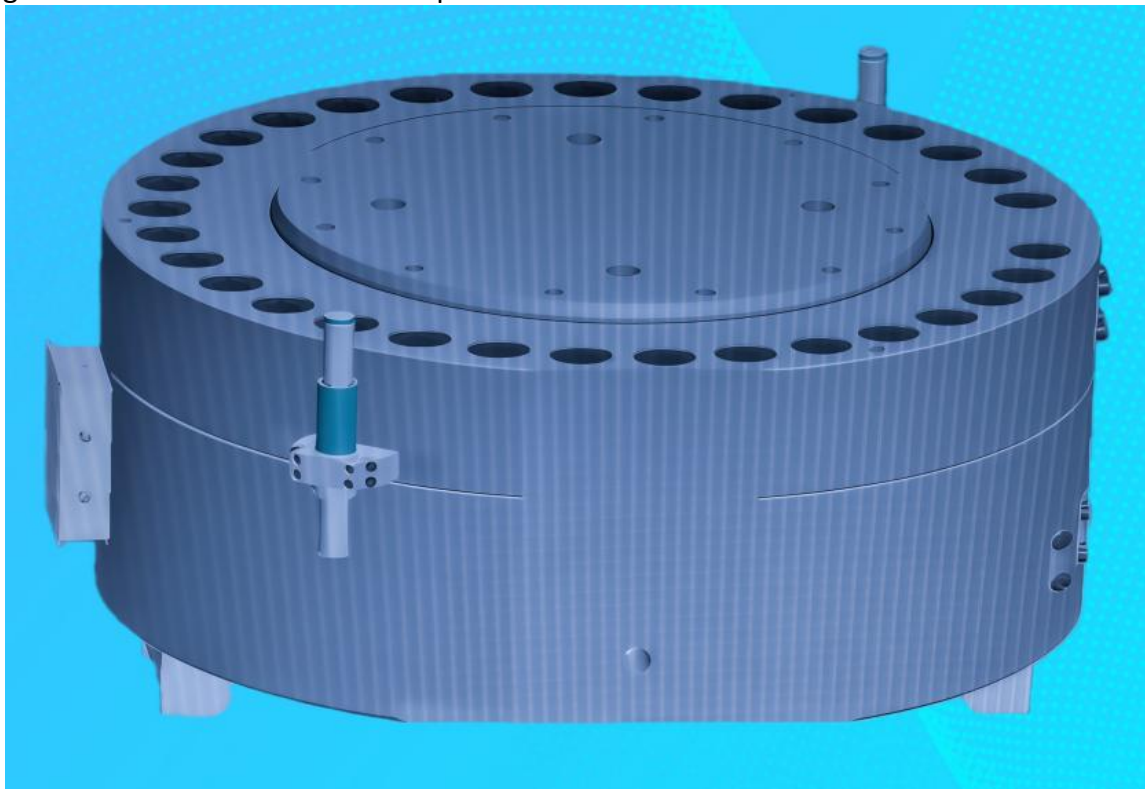
2.Name: AGC Servo Hydraulic Cylinder; Model: UAGC800/740-210

- Bore : 800, Rod : 740, Stroke: 210; Working Pressure: 25MPa, Test Pressure: 37.5MPa



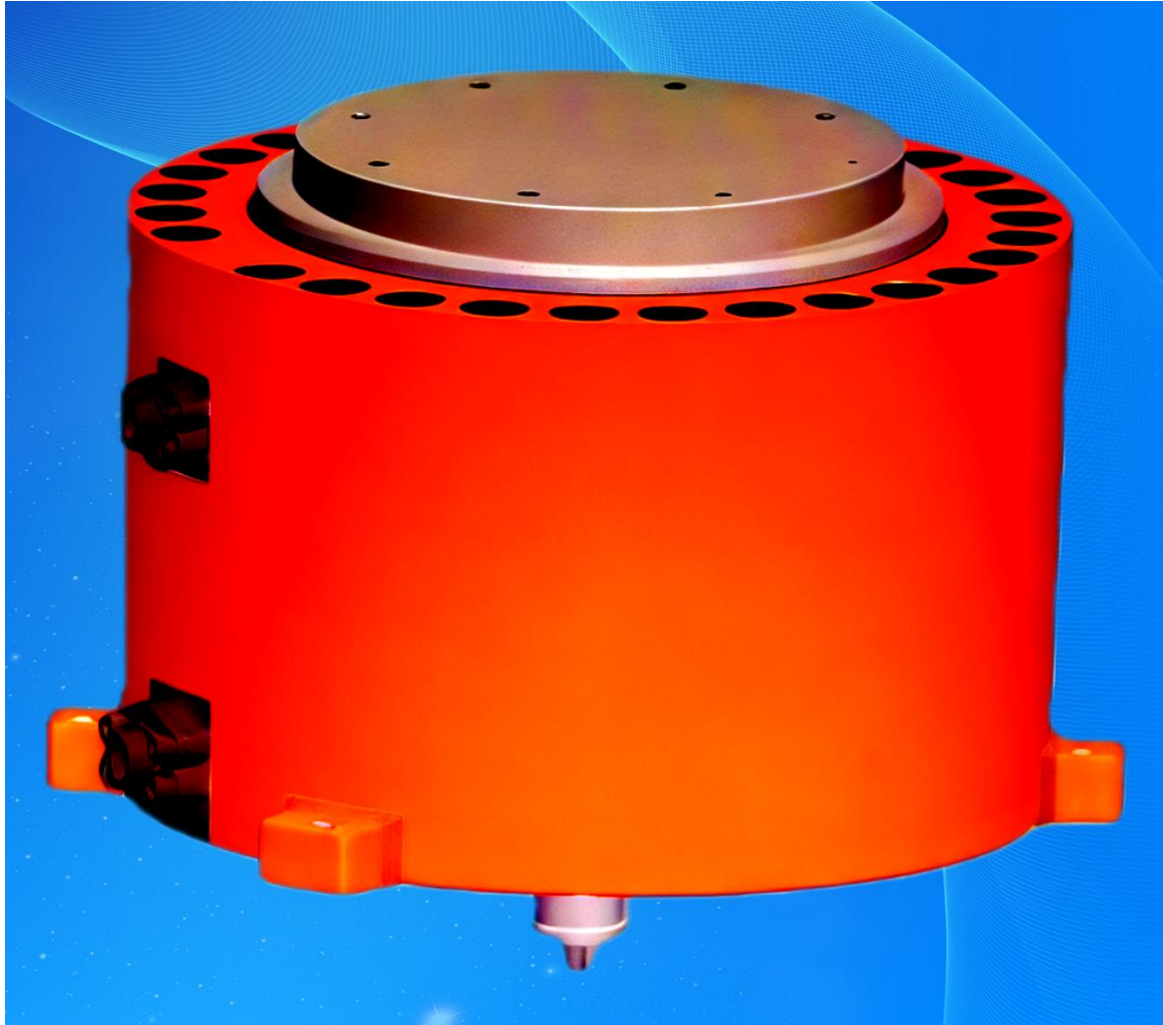
3.Name: AGC Servo Hydraulic Cylinder; Model: UAGC1600/1450-85H

- Bore : 1600, Rod : 1450, Stroke: 85
- Working Pressure of Rodless Chamber: 27MPa, Test Pressure: 37.5MPa
- Working Pressure of Rod Chamber: 7MPa, Test Pressure: 10MPa
- Working Medium: N46 • External Displacement Sensor



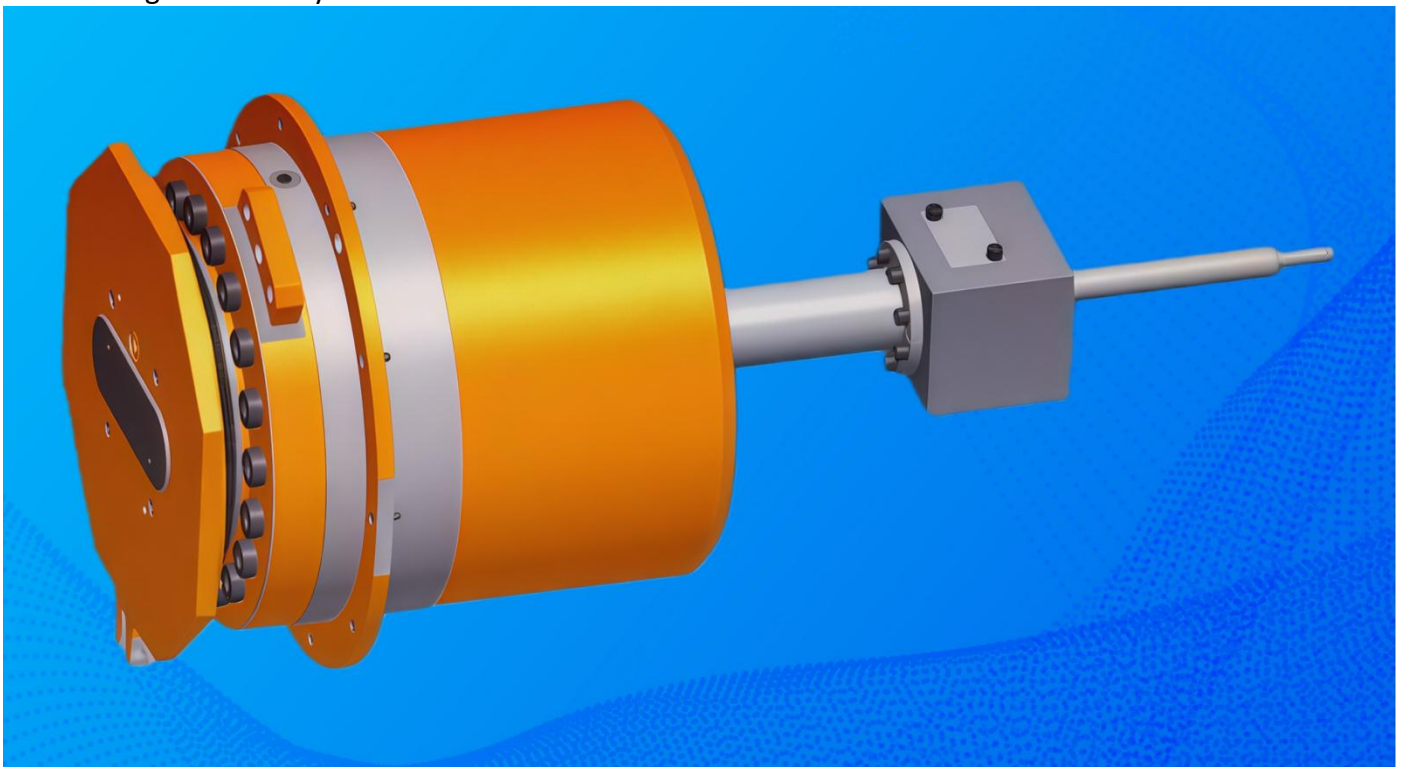
4.Name: 1450 Eighteen-Roll AGC Servo Hydraulic Cylinder; Model: UAGC760/680-180H

- Bore : 760, Rod : 680, Stroke: 180; Working Pressure: 21MPa, Test Pressure: 31MPa
- Working Medium: N46 • Internal Displacement Sensor



5.Name: Polisher AGC Servo Hydraulic Cylinder; Model: UAGC560/480-385

- Bore : 560, Rod : 480, Stroke: 385; Working Pressure: 23MPa, Test Pressure: 34.5MPa
- Working Medium: Hydraulic Oil



6.Name: 1580 Finishing Mill F4-F7 AGC Servo Hydraulic Cylinder; Model: UST1050/900-170CL(DS)

- Bore : 1050, Rod : 900, Stroke: 170;
- Starting Pressure $\leq 0.05\text{MPa}$, Internal Leakage $\leq 15\text{ml/min}$, No External Leakage
- Working Pressure of Rodless Chamber: 30.9MPa , Test Pressure: 35MPa
- Working Pressure of Rod Chamber: 6.86MPa , Test Pressure: 10MPa
- Bandwidth $\geq 15\text{Hz}$; Internal SONY Magnetic Scale

