Hydraulic & Electrical Rotary Joints photo

(Customized Products for Ladle Turret Applications)





















Hydraulic & Electrical Rotary Joints (Customized Products for Ladle Turret Applications)

In steelmaking ladle turrets, hydraulic and electrical rotary joints are critical components ensuring continuous and safe operation.

They allow high-pressure fluids such as hydraulic oil, lubricants, cooling water, and gases to be transferred from stationary piping to rotating equipment, while also maintaining uninterrupted power and signal transmission.

Hydraulic rotary joints utilize advanced rotary sealing and multi-channel fluid transfer technology to achieve continuous delivery of high-pressure fluids between stationary and rotating platforms.

Electrical slip rings use precision silver-alloy contacts to ensure reliable transmission of power and signals.

When integrated together, these systems form a comprehensive "multi-media transmission channel" — the lifeline of automated steelmaking operations.

Tianjin Uranus Hydraulic Machinery Co., Ltd.

Specialized in manufacturing hydraulic rotary joints, electrical slip rings, high-pressure hydraulic cylinders, and servo actuators.

Customized design and drawing services are available upon request.

【Working Principle】

The hydraulic rotary joint is composed of a **rotating housing** and a **stationary shaft core.** The shaft connects to fixed pipelines, while the rotating housing moves synchronously with the turret, transmitting high-pressure fluids through sealed multi-channel paths. This ensures leak-free, long-life performance even under extreme operating conditions.

The electrical slip ring uses silver-alloy contacts and low-noise conductive paths to maintain continuous transmission of power, control, and sensor signals with low resistance fluctuation and high anti-interference capability.

[Key Advantages]

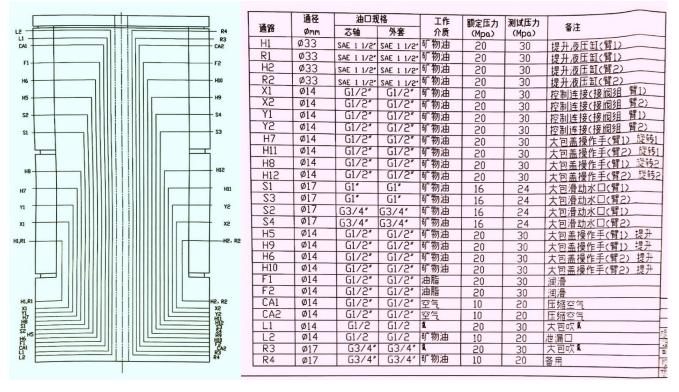
- 1. High-precision sealing Multi-layer sealing ensures zero leakage under high pressure.
- 2. Precision manufacturing CNC machining guarantees concentricity and sealing surface accuracy.
- 3. Low torque & smooth rotation Reduces energy consumption and extends lifespan.
- 4. Full-scale testing Every unit undergoes pressure, electrical, and durability testing before delivery.

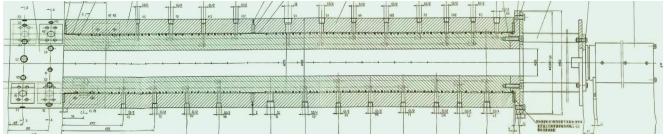
URANUS has delivered over a thousand customized rotary joints to global metallurgical enterprises, with many operating continuously in harsh environments for more than 20 years.

[Product Examples]

1. 28-Channel Hydraulic Slip Ring for Ladle Turret UX28 Φ270X2-XG

Hydraulic Joint: Shaft 0270 mm, 28 channels, 2 r/min.





Electrical Slip Ring Specifications:

Voltage: 0-380VAC/24VDC

Current/Ring: 20A per ring, 90 rings

Insulation Strength: $\geq 500 \text{VAC@50Hz}$ for 60 seconds Dynamic Contact Resistance Fluctuation: $\leq 0.01 \Omega$

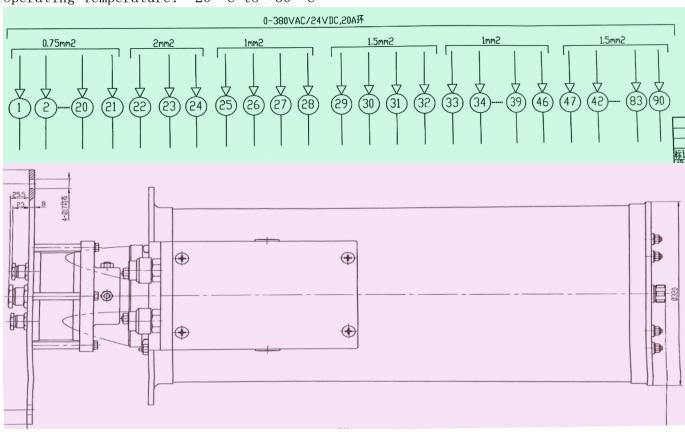
Rotational Speed: 0-250 rpm

Electrical Contact Material: Silver alloy

Housing Material: Aluminum alloy

Feature: Fully sealed

Operating Temperature: -20° C to +80° C



2、28-Channel Hydraulic Slip Ring for Ladle UX1504F28 Φ 270X2X0701

Shaft Ø270 mm, 28 channels, 1 r/min.



3、20-Channel Hydraulic Slip Ring for Ladle UX20 Φ 250X2

Hydraulic Joint: Shaft Ø250 mm, 20 channels.: 2r/min

Electrical Slip Ring Specifications:

Voltage: 0-380VAC/24VDC

Current/Ring: 0.5-2.5A per ring, 4-20mA per ring, 80 rings

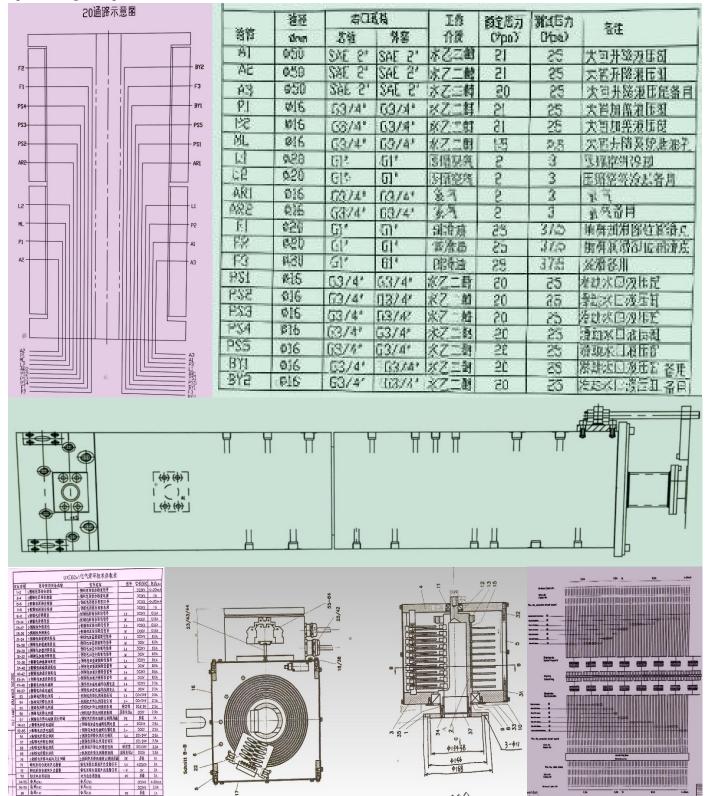
Insulation Strength: $\geq 500 \text{VAC@50Hz}$ for 60 seconds Dynamic Contact Resistance Fluctuation: $\leq 0.01 \Omega$

Rotational Speed: 0-250 rpm

Electrical Contact Material: Silver alloy

Housing Material: Aluminum alloy

Operating Temperature: -20° C to +80° C



4、14-Channel Hydraulic Slip Ring UX14 Φ 320X2

Hydraulic Joint: Shaft Ø320 mm, 14 channels. 2r/min

Electrical Slip Ring Specifications:

Voltage: 0-220VAC/24VDC

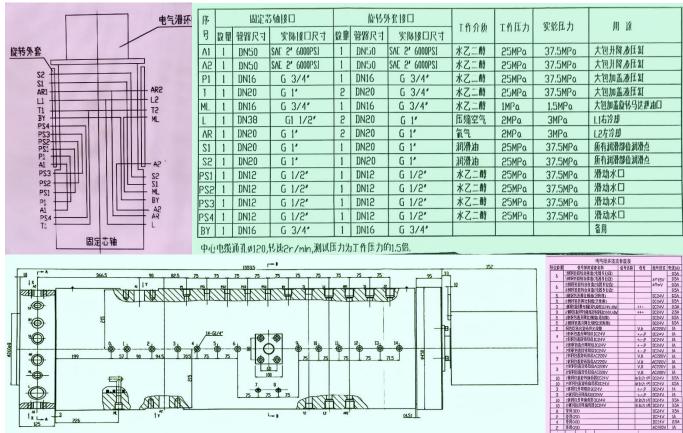
Current/Ring: 0.5-2.5A per ring, 124 rings

Insulation Strength: \geqslant 500VAC@50Hz for 60 seconds Dynamic Contact Resistance Fluctuation: \leqslant 0.01 Ω

Electrical Contact Material: Silver alloy

Housing Material: Aluminum alloy

Operating Temperature: -20° C to +80° C



5、14-Channel Hydraulic Slip Ring UX12D Φ 320X2

Shaft Ø320 mm, 12 channels, 2 r/min.

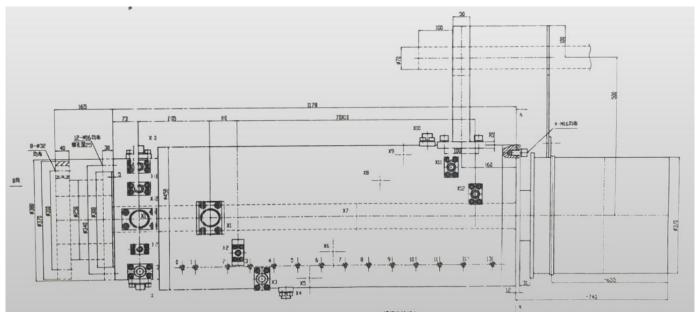
Electrical Slip Ring Specifications:

Voltage: 0-380VAC/24VDC Current/Ring: 0.5-2.5A per ring, 124 rings

Insulation Strength: \geqslant 500VAC@50Hz for 60 seconds Dynamic Contact Resistance Fluctuation: \leqslant 0.01 Ω

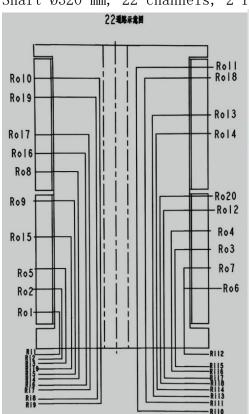
Electrical Contact Material: Silver alloy Housing Material: Aluminum alloy



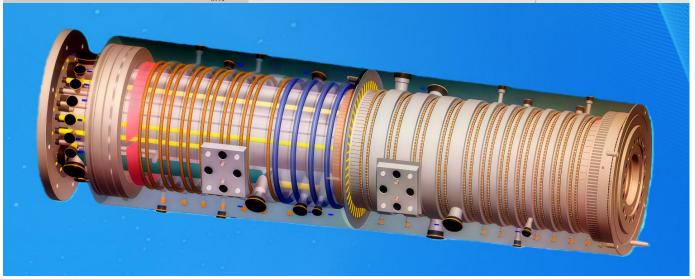


6. Slip Ring UX22 φ 320X2

Shaft Ø320 mm, 22 channels, 2 r/min.

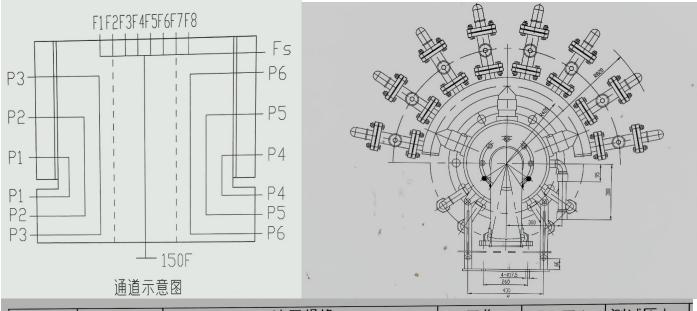


技术参数											
	瀬 名 Ø		油口規格		工作	頻定压力	测试压力				
通路	外套	岩轴	芯轴	外套	介质	(Mpa)	(Mpa)	用途			
T	15	15	Ri1=M22X1.5	Rol=M22X1.5	脂肪酸脂	15	25	滑动水口(A骨)			
2	15	15	Ri2=M22X1.5	Ro2=M22X1.5	脂肪酸脂	15	25	清动水口(A骨)			
3	15	15	Ri15=M22X1.5	Ro3=M22X1.5	脂肪酸脂	15	25	滑动水口(B骨)			
4	15	15	Ri16=M22X1.5		脂肪酸脂	15	25	滑动水口(目骨)			
5	20	30	Ri3=M33X2	Ro5=M33X2	空气		1.5	近天斗坦空气 李朝也是往水口斗坦(人里)			
6	20	20	Ri19=M33X2	Ro15=M33X2	空气	1	1.5	五头中中气 李朝也是在水口中中(B型)			
7	15		Ri12=M22X1.	Bo6=M22X1.5	氢气		1.5	每包港动水口保护(A 看)			
8	15	15		Ro7=M22X1.5	复气		1.5	新包港动水口保护(B骨)			
9	38	38	Ri4=M48X2	Ro8=M48X2	脂肪酸脂	15	25	回转台升降位(人)			
10	38	38	Ri5=M48X2	Ro9=M48X2	脂肪酸脂	15	25	回转台升降位(人)			
II	38	38	Ri9=M48X2	Ro10=M48X2	脂肪酸脂	15	25	回转台升降缸(B)			
12	38	1102111111	Ri10=M48X2	Roll=M48X2	脂肪酸脂	15	25	回转台升降位(B)			
13	38		Ri17=M48X2	Ro12=M48X2	脂肪酸脂	15	25	备用			
14	15	15	Ri13=M22X1.	Ro13=M22X1.	脂肪酸酯	15	25	加盖机升降缸			
15	15	15	Ri14=M22X1.		脂肪酸脂	15	25	加盖机升降位			
16	15	0.100	Ri16=M22X1.		脂肪酸酯	15	25	波拉手向阿拉帕西路(A骨)			
17	15		Ri7=M22X1.5		助計量的	15	25	建型单向同型侧回路(A骨)			
18	15	7 DOT 1000	Rill=M22X1.	5 Ro18=M22X1	脂肪糖脂	15	25	波差早向同差制回路(B骨)			
19	15		Ri8=M22X1.5		非財動能	15	25	建查早向同查领回路(B·看)			
20	15	10000	Ri18=M22X1.		the side also	15	25	各用			



7. Rotary Joint for Converter Non-Driving Side UX7 ϕ 360X2

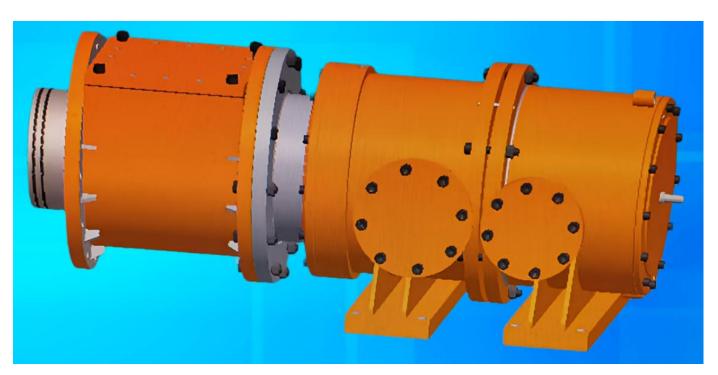
Shaft Ø360 mm, 7 channels. 2r/min



		通径	油口规格				工作	额定压力	测试压力
	通路	Ø(mm)	芯轴	数量	外套	数量	介质	(Mpa)	(Mpa)
	P1	ø25	Rc1 1/4"	1	Rc1 1/4"	1	空气	1.2	1.6
-	P2.	ø25	Rc1 1/4"	1	Rc1 1/4"	1	空气	1.2	1.6
	P3	ø25	Rc1 1/4"	1	Rc1 1/4"	1	空气	1.2	1.6
	P4	ø-25	Rc1 1/4"	1	Rc1 1/4"	1	空气	1.2	1.6
Ţ	P5	ø25	Rc1 1/4"	1	Rc1 1/4"	1	空气	1.2	1.6
	P6	Ø25	Rc1 1/4"	1	Rc1 1/4"	1	空气	1.2	1.6
	Fs		4.0F	8	150F		水		

8. Rotary Joint for No. 3 Converter Tilting Driving Side UX2 Φ 270X2

Shaft Ø270 mm, 2 channels, **2r/min** medium: water, working pressure: 1MPa. Testing Pressure: 1.5MPa



9. Rotary Joint (Converter Non-Driving Side)UX1 Φ 200X2

Shaft Ø200 mm, 1 channel, bore Ø150 mm, 2r/min

medium: water, working pressure: 0.9MPa. Testing Pressure:1.5MPa

